Appendix 1

Single Submission Form

Common Document for Submission to Regulatory, Listing, and Registration Authorities, and Market Institutions for the Issuance of Notes under the ASEAN+3 Multi-Currency Bond Issuance Framework (AMBIF)

ASEAN+3 Bond Market Forum (ABMF) Initiative

Version 52, 15 June 2018

Prepared by ABMF Sub-Forum 1, the AMBIF Documentation Recommendation Board, and related authorities in the region

Important Explanations

For related parties:

- This Single Submission Form (SSF) is designed to facilitate an ASEAN+3 Multi-Currency Bond Issuance Framework (AMBIF) bond and note issuance application to regulatory, listing, and registration authorities in each participating market. As such, this Form is prepared for the benefit of issuer(s) aiming to issue bonds and notes to professional investors in ASEAN+3.
- This Form contains a common set of information to be submitted when applying for AMBIF bond and note issuance for each participating market; however, this does not impact the ability of the regulatory, listing, and registration authorities to request additional information, if deemed necessary, for review and approval.
- This Form is a standard submission document (template) for AMBIF bond and note issuance(s) that is readily available for the markets defined in this SSF's Chapter I, Section 3: Targeted Professional Investor Markets in ASEAN+3 Economies. As of end-July 2015, the professional bond markets of Hong Kong, China; Japan; Malaysia; the Philippines; Singapore; and Thailand comprised the Targeted Professional Investor Markets in ASEAN+3.
- This Form is basically recognized by most of the regulatory, listing, and registration authorities in each participating market; however, this does not exclude the possibility of using another form or document when applying for an AMBIF bond or note issuance where the relevant authorities so admit or require.

For issuers who would like to submit this Form:

- The SSF can be used either as disclosure for bonds and notes issued under a program or shelf-registration, or for a discrete stand-alone AMBIF bond or note issuance.
- When used in conjunction with a note issuance program, this Form may be used separately for issuance approval of the program in a first instance, and individual drawdowns under the program in every instance thereafter. Please choose the type of submission accordingly.
- All the necessary disclosure information as specified by regulatory, listing, and registration authorities should be submitted together with this Form, as may be required by the applicable regulations and guidelines of the relevant jurisdictions. This means that such information may not be provided only by way of referring to a particular filing place or website.
- In order to facilitate a shorter time to market for the issuer, this Form may be submitted to all relevant regulatory authorities and market institutions at the same time.
- Before the submission of this Form, the AMBIF Implementation Guidelines for each participating markets should be referred to accordingly.

About terminology in this Form:

- The term "notes" is used in the SSF to describe debt instruments to be issued in a general manner to professional investors in participating ASEAN+3 markets. The other terms below correspond to the expressions commonly used in the context of bond and note issuance in international debt capital markets and are typically familiar to regular issuers, professional investors, and their service providers.
- For the purpose of the SSF, notes is meant to include various forms of debt instruments—such as bills, notes, and bonds—without any prejudice toward any of the definitions of individual terms as may exist in current practices, laws, and regulations of participating ASEAN+3 markets.

- The term “note issuance program” is intended to describe a program under which multiple issuances of notes are intended with a maximum outstanding amount and common disclosure of the issuer information. The term “note issuance program” is also meant to cover any equivalent debt instrument issuance forms, including but not limited to medium-term note programs and debt issuance programs commonly used in mature debt capital markets.

Introduction to AMBIF and AMBIF Elements

- AMBIF is a policy initiative under the Asian Bond Markets Initiative (ABMI) to help facilitate intra-regional transactions through standardized bond and note issuance and investment processes. By doing so, it will facilitate the process of recycling savings within the region in a practical and efficient manner. This can be expected to contribute to the region's economic growth and stability.
- An AMBIF Market is defined as a professional bond market or market segment for AMBIF bond and note issuance; an AMBIF Market may be constituted as a result of professional investor concepts (e.g., Qualified Buyer), professional market concepts (e.g., Private Placement to Accredited Investors), or because of exemptions from public offering (e.g., Excluded Offers, Targeted Offers to Qualified Investors and similar regimes).
- AMBIF Investors are investors eligible for buying and trading bonds or notes issued under AMBIF.

The AMBIF Elements (AMBIF Core Components) are described below.

AMBIF Elements (AMBIF Core Components)	**Brief Description**
Domestic Settlement	Bonds and notes are settled at a national CSD in ASEAN+3 markets.
Harmonized Documents for Submission (Single Submission Form)	A common approach is of submitting information as input for regulatory process(es) where approval or consent is required. Appropriate disclosure information along with an ADRB recommendation needs to be included.ⓐ
Registration or profile listing at ASEAN+3 (Place of continuous disclosure)	Information on bonds, notes, and issuers needs to be disclosed continuously in ASEAN+3 markets. Registration or a listing authority function is required to ensure continuous and quality disclosure.
Currency	The denomination of an issue is generally expected to be in the domestic currency of each ASEAN+3 market.
Scope of Issuer	Resident of ASEAN+3
Scope of Investors	Professional investors defined in accordance with applicable laws and regulations, or market practice, in each ASEAN+3 market ⓑ

ADRB = AMBIF Documentation Recommendation Board; AMBIF = ASEAN+3 Multi-Currency Bond Issuance Framework; ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; CSD = central securities depository.

ⓐ For more on ADRB, please refer to AMBIF SSF Frequently Asked Questions No. 38 and 39.
ⓑ The following are characteristics of AMBIF Investors:
• Investors targeted under AMBIF are professional investors in ASEAN+3, as they may currently be defined in accordance with applicable laws and regulations in each jurisdiction or market practice.
• There is no intention to normalize professional investor concepts across markets at this stage, since it is the ASEAN+3 Bond Market Forum's (ABMF) policy to avoid changes to existing legislation as a result of defining and implementing AMBIF.
• Professional investors may also include foreign institutional investors if they are so defined in the laws and regulations as professional, or if market practice already shows evidence of foreign institutional investment activities.
Source: ABMF SF1.

Single Submission Form

Contents

I. General Information for Single Submission Form

Common Document for Submission to Regulatory, Listing, and Registration Authorities, and Market Institutions for Issuance of Notes under the ASEAN+3 Multi-Currency Bond Issuance Framework (AMBIF) to be submitted by Issuer(s) to Regulatory, Listing, and Registration Authorities, and Market Institutions for Regulatory Process(es) as applicable:

Date of Submission: **14 April 2021**

Issuer's Name: **Hanwha Solutions Corporation**

Issuer's Address: **86, Cheonggyecheon-ro, Jung-gu, Seoul 04541, Korea**

Issuer's Representative's Signature: ____________

Issuer's Representative's Name: **Koo Yung Lee**

Issuer's Representative's Title and Status: **Chief Executive Officer**

1. Authorities and market institutions applied to for an approval and profile listing or registration in each market

Targeted Market	Regulatory, Listing, or Registration Authority, and Market Institution		Purpose of Submission	Tick
Cambodia	1-1.	Securities and Exchange Commission of Cambodia (SECC)	Approval	
	1-2.	National Bank of Cambodia (NBC)	Approval	
	1-3	Cambodia Securities Exchange (CSX)	Submission for Listing	
People's Republic of China	2-1.	People's Bank of China (PBOC)	Approval	
	2-2.	National Association of Financial Market Institutional Investors (NAFMII)	Approval	
Hong Kong, China	3-1.	Hong Kong Exchanges and Clearing Limited (HKEx)	Submission for Listing	
	3-2.	Hong Kong Monetary Authority (HKMA)—Central Moneymarkets	Approval	

		Unit (CMU)		
Indonesia	4-1.	Indonesian Financial Services Agency (OJK)	Approval	
	4-2.	PT Kustodian Sentral Efek Indonesia (KSEI)	Approval	
Japan	5.	Tokyo Stock Exchange (TSE)—TOKYO PRO-BOND Market	Submission for Listing	
Republic of Korea	6-1.	Korea Exchange (KRX)	Submission for Listing	
	6-2.	Korea Financial Investment Association (KOFIA)	Submission for Registration	
Lao People's Democratic Republic	7-1.	Securities and Exchange Commission Office (SCC)	Approval	
	7-2.	Bank of Lao PDR	Approval	
Malaysia	8-1.	Securities Commission Malaysia	Lodgement of Documents and Information under the Lodge and Launch Framework	
	8-2.	Bank Negara Malaysia (BNM)	Request for Approval (for Purposes of Foreign Exchange Administration)	
Myanmar	9-1.	Securities and Exchange Commission	Approval	
	9-2.	Central Bank of Myanmar	Approval	
Philippines	10-1.	Securities and Exchange Commission of the Philippines (PH SEC)	Submission of Notice of Exemption	
	10-2.	Bangko Sentral ng Pilipinas (BSP)	Request for Approval	
	10-3.	Philippine Dealing & Exchange Corp. (PDEx)	Enrolment for Listing cum Trading	
	10-4.	Philippine Depository & Trust Corp. (PDTC)	Approval	

Singapore	11-1.	Singapore Exchange Securities Trading Limited (SGX)	Submission of Application for Listing	X
	11-2.	Central Depository Pte Ltd.(CDP)	Approval	

Thailand	12-1.	The Securities and Exchange Commission, Thailand (Thai SEC)	Filing for Approval	
	12-2.	Public Debt Management Office (PDMO) of the Ministry of Finance	Request for Approval	
	12-3.	Thai Bond Market Association (ThaiBMA)	Submission for Registration	
	12-4.	Bank of Thailand (BoT) *(only if issuer is a financial institution and the use of proceeds is for capital requirements)*	Request for Approval	
	12-5.	Thailand Securities Depository (TSD)	Approval	

Viet Nam	13-1.	Ministry of Finance (MOF)	Notification	
	13-2.	State Bank of Vietnam (SBV)	Approval	
	13-3.	Hanoi Stock Exchange (HNX)	Submission of Application for Profile Listing	

2. **Issuer's Domicile:**

Issuer's Domicile (Home Jurisdiction)	No.*	Resident in
	1	Republic of Korea

* Enumeration in case of multiple issuer domiciles

3. **Issuer's Parent Company's Jurisdiction:**

Issuer's Parent Company's Jurisdiction	**Republic of Korea**

4. **Type of Submission:**

		Tick
Type-P	Note Issuance Program:	
Type-S	Shelf-Registration: *(regulatory system of collective registration of the total amount of the note issuances that can be executed within a certain period of time)*	
Type-A	Stand-Alone Issuance:	X

Type-D	Drawdown Issuance from the Note Issuance Program or Shelf-Registration:	

5. Distinction of the Form:

		Tick
N.	New:	X
R.	Renewal (details are described below):	
A.	Amendment (details are described below):	

6. Targeted Professional Investor Markets in ASEAN+3:

No.	Targeted Professional Investor Market*	Tick
1.	**Cambodia: Targeted Offers to Qualified Investors**	
2.	People's Republic of China: Inter-Bank Bond Market (IBBM)	
3.	**Hong Kong, China: Professional Investors Only Market**	
4.	Indonesia: (Offering to Professional Investor)	
	Non-Public Offering (Private Placement)	
5.	**Japan: TOKYO PRO-BOND Market (Professional Investor Market)**	
6.	**Republic of Korea: QIB Market**	
7.	(Lao People's Democratic Republic: PP Market)	
8.	**Malaysia: Excluded Offers – Sophisticated Investors Market**	
9.	(Myanmar: PP Market)	
10.	**Philippines: Qualified Buyers' Market**	
11.	**Singapore: Wholesale Market (Institutional Investors Market)**	X
12.	**Thailand: PP-II Regime**	
13.	Viet Nam: PP (Institutional Investors) Market	

AI = Accredited Investors, PP = Private Placement, PP-II = Private Placement to Institutional Investors.
* Markets that were not yet active at end-May 2018 are in parentheses. Those eight markets that had defined professional bond markets suitable for AMBIF at end-May 2018 are in boldface type.

7. Denominated Currency of the Notes:

No.	Denominated Currency of the Notes (ISO 4217 Code)	Tick
1.	KHR (Cambodia)	

<table>
<tr><td></td><td colspan="2">USD (Cambodia)</td><td></td></tr>
<tr><td rowspan="2">2.</td><td rowspan="2">CNY</td><td>CNH: (HKMA-CMU settled)</td><td>X</td></tr>
<tr><td>CNH: (other than HKMA-CMU settled:)</td><td></td></tr>
<tr><td>3.</td><td colspan="2">HKD</td><td></td></tr>
<tr><td>4.</td><td colspan="2">IDR</td><td></td></tr>
<tr><td>5.</td><td colspan="2">JPY</td><td></td></tr>
<tr><td>6.</td><td colspan="2">KRW</td><td></td></tr>
<tr><td>7.</td><td colspan="2">LAK</td><td></td></tr>
<tr><td>8.</td><td colspan="2">MYR</td><td></td></tr>
<tr><td>9.</td><td colspan="2">MMK</td><td></td></tr>
<tr><td>10.</td><td colspan="2">PHP</td><td></td></tr>
<tr><td>11.</td><td colspan="2">SGD</td><td></td></tr>
<tr><td>12.</td><td colspan="2">THB</td><td></td></tr>
<tr><td>13.</td><td colspan="2">VND</td><td></td></tr>
<tr><td>14.</td><td colspan="2">USD</td><td></td></tr>
</table>

8. Clearing and Settlement:

No.	Denominated Currency of the Notes	Name of Central Depository	Name of Depository System	Distinction of DVP, Non-DVP, or N.A.
	CNY	Central Moneymarkets Unit Service	Central Moneymarkets Unit Service	DVP

9. Place of Disclosure:

No.	Name of the Place of Disclosure
1	Singapore Exchange Securities Trading Limited ("**SGX-ST**") The SGX-ST assumes no responsibility for the accuracy of any of the statements made or opinions or reports contained in the Offering Circular as attached hereto in Section VI ("**Offering Circular**"). Admission of the Bonds to the Official List of the SGX-ST is not to be taken as an indication of the merits of the Issuer, the Guarantor, their respective subsidiaries or associated companies or the Bonds.

Detailed explanation of the profile listing or registration, if necessary: **N/A**

10. Other Important Matters:

No.	Jurisdiction (Market)	Important Matter
1.	Cambodia	
2.	People's Republic of China	
3.	Hong Kong, China	Please see Part IV, Section 2, Point 11 (Selling Restrictions at Issuance) of this form.
4.	Indonesia	
5.	Japan	
6.	Republic of Korea	Please see Part IV, Section 2, Point 11 (Selling Restrictions at Issuance) of this form.
7.	Lao People's Democratic Republic	
8.	Malaysia	
9.	Myanmar	
10.	Philippines	
11.	Singapore	Please see Part IV, Section 2, Point 11 (Selling Restrictions at Issuance) of this form.
12.	Thailand	
13.	Viet Nam	
14.	Other (if any)	The United States and United Kingdom Please see Part IV, Section 2, Point 11 (Selling Restrictions at Issuance) of this form.

II. Issuer Information

(If two or more issuers intend to jointly establish a note issuance program, describe information for each of the issuers.)

Method of describing Issuer Information* *(An issuer can choose one method of describing as set forth below.)*		**Tick**
A.	Fully describe Issuer Information	X
B.	Specify the documents and places where AMBIF Investors are able to access the documents and designate them as Documents Incorporated by Reference	
C.	A combination of A and B above	

* An issuer can also choose not to designate Financial Information of the issuer as Documents Incorporated by Reference provided the issuer discloses its financial information in English in the Home Jurisdiction. For example, in case the issuer has continuously disclosed English annual reports that contain consolidated financial statements with independent auditor reports, the issuer may state such facts below and describe how AMBIF Investors can access such annual reports (e.g., via a website).

1. Information on the Issuer:

1.	Name of Issuer:	Hanwha Solutions Corporation
2.	Name and Title of Representative:	Koo Yung Lee; Chief Executive Officer
3.	Address (Registered or Business Address):	86, Cheonggyecheon-ro, Jung-gu, Seoul 04541, Korea
4.	Liaison Contact Person:	Woojoon Chung (Manager, International Finance Team)
5.	Telephone and e-Mail:	+82 2 6049 0795 / woojoon.chung@hanwha.com
6.	Business Registration No. (if any):	202-81-16577
7.	Date and Place of Incorporation:	27 April 1974, Korea
8.	Authorized and Paid-up Capital:	Won 821,170,655,000 as of 31 December 2020
9.	Trends of Key Financial Data:	See Issuer's audited financial statements set forth in the Offering Circular.
10.	Description of Business: *(nature of business of the issuer in the domestic economy, if any)*	See "The Issuer" set forth in the Offering Circular.
11.	Risk Factors: *(including risks related to the issuer's business,*	See "Risk Factors" set forth in the Offering Circular.

	operations, and regulatory environment)	
12.	Board of Directors:	Lee Koo Yung Kim Hee Cheul Ryoo Duhyoung Kim Dong-Kwan Kim Eun-Soo Choi Man-Gyu Amanda Bush Shima Satoshi Suh Jeong-Ho Park Ji-Hyung Lee Han-Joo
13.	Controlling Shareholders or, in the Case of a Public Company, Names of Major Shareholders:	Hanwha Corporation – 37.25% as of 31 December 2020
14.	Status of Affiliates:	See notes to the Issuer's audited financial statements set forth in the Offering Circular.
15.	Website for Disclosure (if any):	Information about the Bonds will be disclosed on the website of the SGX.

2. Financial Information on the Issuer:

1.	Consolidated Financial Statements: (i) Consolidated Balance Sheet (ii) Consolidated Income Statement and Consolidated Comprehensive Income Statement, or Statement of Consolidated Income and Comprehensive Income (iii) Consolidated Statement of Changes in Shareholders' Equity (iv) Consolidated Cash Flow Statement (v) Independent Auditor's Report (vi) Accompanied Notes	The audited consolidated financial statements of the Issuer as of and for the years ended 31 December 2020 and 2019 were prepared in accordance with the International Financial Reporting Standards as adopted in Korea and were audited by Deloitte Anjin LLC. See Issuer's audited financial statements and related notes set forth in the Offering Circular.
2.	Other Matters	
	● Subsequent Events:	N/A
	● Litigations:	N/A

* For (i), (ii), and (iii) only

3. Information on the Guarantor or Provider of other Credit Enhancement (if any):

1.	Name:	Credit Guarantee and Investment Facility, a trust fund of the Asian Development Bank
2.	Address:	Asian Development Bank Building

		6 ADB Avenue, Mandaluyong City 1550, Metro Manila, Philippines
3.	Description of Business:	See “Information on the Guarantor” set forth in the Offering Circular.
4.	Guaranty or Support Agreement Details:	See “Description of the CGIF Guarantee” set forth in the Offering Circular.

4. Financial Information on the Guarantor or Provider of Credit Enhancement:

The Guarantor’s audited financial statements are prepared and presented in accordance with the International Financial Reporting Standards and audited by Deloitte & Touche LLP. See CGIF’s audited financial statements and related notes set forth in the Offering Circular.

III. Information on the Program or the Shelf-Registration

N/A

IV. Information on the Notes

1. Summary of the Terms and Conditions of the Notes or Final Terms of Individual Issuance of Notes:

(This section may be used for describing the information of individual issuance of notes for Type-D submissions.)

1.	Issuer(s):	Hanwha Solutions Corporation
2.	2-1.Guarantor (if any):	Credit Guarantee and Investment Facility, a trust fund of the Asian Development Bank
	2-2.Provider of Support Agreement (if any):	N/A
3.	Name of the Notes:	CNY1,000,000,000 in aggregate principal amount of 3.00 per cent. Guaranteed Green Bonds due 2024
4.	Aggregate Amount of the Notes (Issue Amount):	CNY1,000,000,000
5.	Form of Notes:	The Bonds are issued in registered form.
6.	Status of the Notes:	The Bonds will constitute direct, unconditional, unsubordinated and (subject to Condition 4 (*Negative Pledge*) of the Terms and Conditions of the Bonds set forth in the Offering Circular) unsecured obligations of the Issuer and shall at all times rank *pari passu* and without any preference among themselves. The payment obligations of the Issuer under the Bonds shall, save for such exceptions as may be provided by applicable legislation, at all times rank at least equally with all other unsecured and unsubordinated indebtedness of the Issuer, present and future.
7.	Denomination of the Notes: (i) minimum tradable amount (ii) multiple tradable amount	The Bonds are in the denominations of CNY1,000,000 and integral multiples of CNY10,000 in excess thereof.
8.	Issue Price:	100.00 per cent. of the principal amount
9.	Offer Price:	100.00 per cent. of the principal amount
10.	Date of Issue:	19 April 2021
11.	Date of Maturities: *(timing of amortization plan ([if any])*	Maturity Date: 19 April 2024 See Condition 7 *(Redemption and Purchase)* of the Terms and Conditions of the Bonds set forth

		in the Offering Circular.
12.	Early Redemption: *(with call option, with put option, with call and put exercise dates [if any])*	The terms of the Bonds contain early redemption provisions. See Conditions 7(b) and 7(c) of the Terms and Conditions of the Bonds set forth in the Offering Circular.
13.	Type of Notes: *(fixed-rate notes)* *(floating-rate notes)* *(zero-coupon notes)*	The Bonds will bear interest at a fixed rate.
14.	Interest or Coupon Rate:	See Condition 6(a) of the Terms and Conditions of the Bonds set forth in the Offering Circular.
15.	Interest or Coupon Payment Method: *(record date rule, interest payment frequency, interest calculation frequency, first interest payment date, and timing of interest payment)*	See Condition 6(c) of the Terms and Conditions of the Bonds set forth in the Offering Circular.
16.	Negative Pledge:	The terms of the Bonds contain a negative pledge provision. See Condition 4 (*Negative Pledge*) of the Terms and Conditions of the Bonds set forth in the Offering Circular.
17.	Cross Default:	The terms of the Bonds contain a cross-acceleration provision. See Condition 11(a)(iii) of the Terms and Conditions of the Bonds set forth in the Offering Circular.
18.	Governing Law and Jurisdiction*:	The Bonds, the Trust Deed, the Agency Agreement and the CGIF Guarantee and any non-contractual obligations arising out of or in connection with them are governed by, and shall be construed in accordance with, English law. See Condition 19 of the Terms and Conditions of the Bonds set forth in the Offering Circular.
19.	Special Withholding Tax Applied to Financial Institutions including FATCA (if any):	See "Taxation" set forth in the Offering Circular.

** Governing law and jurisdiction, with respect to the Terms and Conditions of the Notes, will be those agreed among the contract parties, subject to applicable laws and regulations.*

2. Other Information of the Notes:

1.	Dealers and/or Underwriters or Equivalent: *(for example, Principal Advisor [MY] or Financial Advisor [TH])*	Standard Chartered Bank
2.	Trustee or Equivalent (if any): *(Bond Administrator, Commissioned Company or Person, Bondholders Representative)*	Citicorp International Limited

<table>
<tr><td>3.</td><td colspan="2">Fiscal Agent:</td><td colspan="3">N/A</td></tr>
<tr><td>4.</td><td colspan="2">Paying Agents:</td><td colspan="3">Citicorp International Limited</td></tr>
<tr><td>5.</td><td colspan="2">Registrar and Transfer Agent:</td><td colspan="3">Citicorp International Limited</td></tr>
<tr><td>6-1.</td><td colspan="2">CMU Lodging Agent:</td><td colspan="3">Citicorp International Limited</td></tr>
<tr><td>6-2.</td><td colspan="2">Other Agent:
( ):</td><td colspan="3">N/A</td></tr>
<tr><td>6-3.</td><td colspan="2">Other Agent:
( ):</td><td colspan="3">N/A</td></tr>
<tr><td>7.</td><td colspan="2">Listing, Registration, or Filing Place(s) of the Notes:
(See I.-6.Place of Disclosure.)</td><td colspan="3">Information about the Bonds will be disclosed on the website of the SGX. The Bonds are expected to be listed on the SGX.</td></tr>
<tr><td rowspan="3">8.</td><td colspan="2" rowspan="3">Settlement Place(s) of each Denominated Currency Notes:
(See I.-5.Clearing and Settlement.)</td><td>1.</td><td>Denominated Currency of Bond</td><td>Settlement</td></tr>
<tr><td></td><td>CNY</td><td>CMU</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td rowspan="4">9.</td><td colspan="5">Use of Proceeds:</td></tr>
<tr><td>1.</td><td>Amount of Proceeds from Sale of Notes:</td><td colspan="3">See “Use of Proceeds” set forth in the Offering Circular.</td></tr>
<tr><td rowspan="2">2.</td><td rowspan="2">Use of Proceeds [and Timing of Disbursement]:
(may include rationale or justification)</td><td colspan="3">See “Use of Proceeds” set forth in the Offering Circular.</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>10.</td><td colspan="2">Risk Factors relating to the Notes:</td><td colspan="3">See “Risk Factors” set forth in the Offering Circular.</td></tr>
<tr><td rowspan="2">11.</td><td colspan="5">Selling Restrictions at Issuance: See "Subscription and Sale" set forth in the Offering Circular.
(Notes shall not be sold, offered for sale, or distributed to nonprofessional investors in ASEAN+3.)</td></tr>
<tr><td>1.</td><td colspan="4">United States

The Bonds and CGIF Guarantee have not been and will not be registered under the U.S. Securities Act of 1933, as amended (the "Securities Act") and may not be offered or sold within the United States except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act. The Sole Lead Manager has represented that it has not offered or sold, and has agreed that it will not offer or sell, any Bonds and the CGIF Guarantee constituting part of its allotment within the United States, and any offers and sales will be made in accordance with Rule 903 of Regulation S under the Securities Act. Accordingly, none of the Sole Lead Manager, its affiliates or any persons acting on their behalf have engaged in, or will engage in, any directed selling efforts with</td></tr>
</table>

<table>
<tr><td></td><td></td><td>respect to the Bonds and the CGIF Guarantee. Terms used in these paragraphs have the meanings given to them by Regulation S.

In addition, until 40 days after the commencement of the offering of the Bonds and the CGIF Guarantee, an offer or sale of the Bonds or the CGIF Guarantee within the United States by any "dealer" (as defined in the Securities Act), whether or not participating in the offering, may violate the registration requirements of the Securities Act.</td></tr>
<tr><td></td><td>2.</td><td>United Kingdom

The Sole Lead Manager has represented and agreed that:

(a) Financial promotion: it has only communicated or caused to be communicated and will only communicate or cause to be communicated any invitation or inducement to engage in investment activity (within the meaning of section 21 of the Financial Services and Markets Act 2000 (the "FSMA") received by it in connection with the issue or sale of any Securities in circumstances in which section 21(1) of the FSMA does not apply to the Issuer or the Guarantor; and

(b) General compliance: it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Securities in, from or otherwise involving the United Kingdom.</td></tr>
<tr><td></td><td>3.</td><td>Singapore

The Sole Lead Manager has acknowledged that this Offering Circular has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, the Sole Lead Manager has represented, warranted and agreed that it has not offered or sold any Bonds or caused the Bonds to be made the subject of an invitation for subscription or purchase and will not offer or sell any Bonds or cause the Bonds to be made the subject of an invitation for subscription or purchase, and has not circulated or distributed, nor will it circulate or distribute, this Offering Circular or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the Bonds, whether directly or indirectly, to any person in Singapore other than (i) to an institutional investor (as defined in Section 4A of the SFA) pursuant to Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.
Where the Bonds and the CGIF Guarantee are subscribed or purchased under Section 275 of the SFA by a relevant person which</td></tr>
</table>

		is: (a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor, securities or securities-based derivatives contracts (each term as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired such securities or securities-based derivatives contract pursuant to an offer made under Section 275 of the SFA except: 1. to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA; 2. where no consideration is or will be given for the transfer; 3. where the transfer is by operation of law; 4. as specified in Section 276(7) of the SFA; or 5. as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018 of Singapore.
	4.	**Hong Kong** The Sole Lead Manager has represented and agreed that: (a) it has not offered or sold and will not offer or sell in Hong Kong, by means of any document, any Bonds other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong (the "**SFO**") and any rules made under the SFO; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions Ordinance (Cap. 32) of Hong Kong (the "**C(WUMP)O**") or which do not constitute an offer to the public within the meaning of the C(WUMP)O; and (b) it has not issued or had in its possession for the purposes of issue, and will not issue or have in its possession for the purposes of issue, whether in Hong Kong or elsewhere, any advertisement, invitation or document relating to the Bonds and the CGIF Guarantee, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to Bonds and the CGIF Guarantee which are or are intended to be disposed of only to

		persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made under the SFO.
	5.	**Korea** The Bonds have not been and will not be registered under the Financial Investment Services and Capital Markets act of Korea. Accordingly, the Bonds may not be offered, sold or delivered, directly or indirectly, in Korea or to, or for the account or benefit of, any resident of Korea (as such term is defined under the Foreign Exchange Transactions Act of Korea and its Presidential Decree) or to others for re-offering or resale, directly or indirectly, in Korea or to any resident of Korea, except as otherwise permitted under applicable Korean laws and regulations. In addition, during the first year after the issuance of the Bonds, the Bonds may not be transferred to any resident of Korea other than a Korean Qualified Institutional Buyer (a "**Korean QIB**," as defined in the Regulation on Securities Issuance, Public Disclosure, etc. of Korea) who is registered with the Korea Financial Investment Association as a Korean QIB, provided that the amount of the Bonds acquired by such Korean QIBs in the primary market is limited to no more than 20% of the aggregate issue amount of the Bonds.
	Selling Restrictions Thereafter: *(Notes shall not be sold, offered for sale, or distributed to nonprofessional investors in ASEAN+3.)*	
	1.	As directly above.
	2.	
12.	Credit Rating for the Notes:	The Bonds are expected to be rated AA by S&P. A rating is not a recommendation to buy, sell or hold securities and may be subject to revision, suspension or withdrawal at any time by the assigning rating organisation. No guarantee is made that such ratings will not be adversely revised or withdrawn either before or after delivery of the Bonds. See "Risk Factors—Risk Relating to the Bonds" set forth in the Offering Circular.

13-1.	Legal Adviser(s) to the Issuer(s):	Paul Hastings LLP (as to English law), Lee & Ko (as to Korean law)
13-2.	Legal Adviser(s) to the Dealer(s):	Clifford Chance (as to English law)

14.	Method of Distribution:	Subject to applicable selling restrictions

	(Subject to applicable selling restrictions. For example, notes may be distributed [only to professional investors] on a syndicated or non-syndicated basis, and also in case of THB-denominated bonds and notes.)	on a non-syndicated basis.

15.	Outstanding Debt from Previous Issues of Bonds and Notes : *(for example, in case of THB-denominated bonds and notes)*	N/A

16.	Cross Currency Swap Information: *(for example, in case of issuance by nonresident, including intermediaries, if possible, and currencies, as and where necessary)*	N/A

17.	Timing of Bond Issuance: *[for example, in case of Baht Bond issued by non-Thai resident [Public Debt Management Office authorized period])*	19 April 2021

18.	Other: *("final terms" for drawdown)*	N/A

V. Terms and Conditions of the Notes

See "Terms and Conditions of the Bonds" set forth in the Offering Circular.

VI. Attachments

Offering Circular

IMPORTANT NOTICE

NOT FOR DISTRIBUTION TO ANY PERSON OR ADDRESS IN THE UNITED STATES. THIS OFFERING IS AVAILABLE ONLY TO INVESTORS WHO ARE ADDRESSEES OUTSIDE OF THE UNITED STATES.

IMPORTANT: You must read the following disclaimer before continuing. The following disclaimer applies to the attached offering circular (the "**Offering Circular**") received by e-mail or otherwise received as a result of electronic communication, and you are therefore advised to read this disclaimer page carefully before reading, accessing or making any other use of the attached Offering Circular. In accessing the Offering Circular, you agree to be bound by the following terms and conditions, including any modifications to them from time to time, each time you receive any information from the Issuer or the Guarantor (each as defined in this Offering Circular) as a result of such access.

NOTHING IN THIS ELECTRONIC TRANSMISSION CONSTITUTES AN OFFER OF SECURITIES FOR SALE IN THE UNITED STATES OR ANY OTHER JURISDICTION WHERE IT IS UNLAWFUL TO DO SO. THE SECURITIES HAVE NOT BEEN, AND WILL NOT BE, REGISTERED UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "**SECURITIES ACT**"), OR THE SECURITIES LAWS OF ANY STATE OF THE UNITED STATES, OR ANY OTHER JURISDICTION, AND THE SECURITIES AND THE CGIF GUARANTEE MAY NOT BE OFFERED, SOLD, RESOLD, TRANSFERRED OR DELIVERED, DIRECTLY OR INDIRECTLY, WITHIN THE UNITED STATES, EXCEPT PURSUANT TO AN EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND APPLICABLE STATE OR LOCAL SECURITIES LAWS. THIS OFFERING IS MADE SOLELY IN OFFSHORE TRANSACTIONS PURSUANT TO REGULATION S UNDER THE SECURITIES ACT.

YOU ARE NOT AUTHORISED TO AND YOU MAY NOT FORWARD OR DELIVER THE ATTACHED OFFERING CIRCULAR, ELECTRONICALLY OR OTHERWISE, TO ANY OTHER PERSON OR REPRODUCE SUCH OFFERING CIRCULAR IN ANY MANNER WHATSOEVER, AND IN PARTICULAR, MAY NOT BE FORWARDED TO ANY U.S. ADDRESS. ANY FORWARDING, DISTRIBUTION OR REPRODUCTION OF THIS OFFERING CIRCULAR IN WHOLE OR IN PART IS UNAUTHORISED. FAILURE TO COMPLY WITH THIS DIRECTIVE MAY RESULT IN A VIOLATION OF THE SECURITIES ACT OR THE APPLICABLE LAWS OF OTHER JURISDICTIONS. IF YOU HAVE GAINED ACCESS TO THIS TRANSMISSION CONTRARY TO ANY OF THE FOREGOING RESTRICTIONS, YOU ARE NOT AUTHORISED AND WILL NOT BE ABLE TO PURCHASE ANY OF THE SECURITIES DESCRIBED THEREIN.

Confirmation of Your Representation: By accepting the email and accessing the attached Offering Circular, you will be deemed to have represented to Standard Chartered Bank (the "**Sole Lead Manager**"), that: (i) the electronic mail address that you gave us and to which this e-mail has been delivered is not located in the United States; and (ii) you consent to delivery of the attached Offering Circular and any amendments or supplements thereto by electronic transmission.

Renminbi ("**RMB**") is currently not freely convertible and conversion of RMB through banks in Hong Kong is subject to certain restrictions. You should be reminded of the conversion risk in RMB products. In addition, there is a liquidity risk associated with RMB products, especially if such investments do not have an active secondary market and their prices have large bid/offer spreads. Offshore RMB products are denominated and settled in RMB deliverable in Hong Kong, which represents a market which is different from that of RMB deliverable in the PRC.

This Offering Circular has been sent to you in electronic form. You are reminded that documents transmitted via this medium may be altered or changed during the process of transmission and consequently none of the Issuer, the Guarantor, the Sole Lead Manager, the Trustee (as defined in this Offering Circular), the Agents (as defined in this Offering Circular) or any person who controls, or is a director, officer, employee, agent, representative or affiliate of, any such person accepts any liability or responsibility whatsoever in respect of any difference between the Offering Circular distributed to you in electronic form and the hard copy version available to you on request from the Sole Lead Manager.

Restrictions: The attached Offering Circular is being furnished in connection with an offering exempt from registration under the Securities Act solely for the purpose of enabling a prospective investor to consider the purchase of the securities described in the Offering Circular.

Nothing in this electronic transmission constitutes an offer of securities for sale in any jurisdiction where it is unlawful to do so.

You are reminded that you have accessed the attached Offering Circular on the basis that you are a person into whose possession this Offering Circular may be lawfully delivered in accordance with the laws of the jurisdiction in which you are located and you may not nor are you authorised to deliver or forward this document, electronically or otherwise, to any other person. If you have gained access to this transmission contrary to the foregoing restrictions, you will be unable to purchase any of the securities described therein.

If a jurisdiction requires that the offering be made by a licenced broker or dealer and the underwriters or any affiliate of the underwriters is a licenced broker or dealer in that jurisdiction, the offering shall be deemed to be made by the underwriters or such affiliate on the Issuer's behalf in such jurisdiction.

Actions that You May Not Take: You should not reply by e-mail to this electronic transmission, and you may not purchase any securities by doing so. Any reply e-mail communications, including those you generate by using the "Reply" function on your e-mail software, will be ignored or rejected.

You are responsible for protecting against viruses and other destructive items. Your use of this e-mail is at your own risk and it is your responsibility to take precautions to ensure that it is free from viruses and other items of a destructive nature.

OFFERING CIRCULAR **STRICTLY CONFIDENTIAL**

HANWHA SOLUTIONS CORPORATION

(incorporated with limited liability in Korea)

CNY1,000,000,000 3.00 PER CENT. GUARANTEED GREEN BONDS DUE 2024
UNCONDITIONALLY AND IRREVOCABLY GUARANTEED BY

Credit Guarantee & Investment Facility
An Asian Bond Markets Initiative

CREDIT GUARANTEE AND INVESTMENT FACILITY, A TRUST FUND OF THE ASIAN DEVELOPMENT BANK

Issue Price: 100.00 per cent.

The CNY1,000,000,000 in aggregate principal amount of 3.00 per cent. Guaranteed Green Bonds due 2024 (the "**Bonds**") to be issued by Hanwha Solutions Corporation (the "**Issuer**") will mature on 19 April 2024. The payment obligations of the Issuer in respect of the Bonds and the Trust Deed (as defined in "*Terms and Conditions of the Bonds*") will be unconditionally and irrevocably guaranteed by Credit Guarantee and Investment Facility, a trust fund of the Asian Development Bank ("**CGIF**" or the "**Guarantor**," and such guarantee, the "**CGIF Guarantee**") to the extent of, and in accordance with and subject to the terms of, the CGIF Guarantee.

Interest at the rate of 3.00 per cent. per annum will accrue on the Bonds from and including 19 April 2021, and be payable semi-annually in arrear on 19 April and 19 October of each year, commencing on 19 October 2021.

The Bonds constitute direct, unconditional, unsubordinated and (subject to Condition 4 (*Negative Pledge*)) unsecured obligations of the Issuer and shall at all times rank *pari passu* and without any preference among themselves. The payment obligations of the Issuer under the Bonds shall, save for such exceptions as may be provided by applicable legislation, at all times rank at least equally with all other unsecured and unsubordinated indebtedness of the Issuer, present and future. The payment obligations of the Issuer under the Bonds and the Trust Deed are unconditionally and irrevocably guaranteed by the Guarantor to the extent of, and in accordance with and subject to the terms of, the CGIF Guarantee. Such obligations of the Guarantor under the CGIF Guarantee are direct, unconditional and general obligations of the Guarantor and rank *pari passu* with the claims of all its other unsecured and unsubordinated creditors, except for obligations mandatorily preferred by law.

The ability of the Trustee (as defined in "*Terms and Conditions of the Bonds*") or any Bondholder (as defined in "*Terms and Conditions of the Bonds*") to accelerate under the Bonds is limited pursuant to the terms of the Trust Deed. For a description of this and certain other restrictions of the CGIF Guarantee, see "*Description of the CGIF Guarantee*" and "*Risks relating to the Guarantor and the CGIF Guarantee*."

Unless previously redeemed, or purchased and cancelled, the Issuer will redeem the Bonds at 100.00 per cent. (100%) of their principal amount on 19 April 2024 (the "**Maturity Date**"), subject as provided in Condition 8 (*Payments*) of the Terms and Conditions of the Bonds. The Bonds may be redeemed in whole, but not in part, at the option of the Issuer, subject to certain provisions, at their principal amount, together with all interest accrued and unpaid to the date fixed for redemption upon the occurrence of a change in, or amendment to, the laws or regulations of the Republic of Korea, the Republic of the Philippines or any political subdivision or any authority thereof or therein having power to tax, or any change in the application or official interpretation of such laws or regulations, which change or amendment becomes effective on or after 13 April 2021 such that the Issuer or the Guarantor (as the case may be) would be required to pay additional amounts in respect of the Bonds or the CGIF Guarantee and such obligation cannot be avoided by the Issuer or the Guarantor, as the case may be, taking reasonable measures available to it. In addition, at any time following the occurrence of a CGIF Acceleration (as defined in "*Terms and Conditions of the Bonds*"), the Guarantor may at its discretion, subject to certain provisions, require the Issuer to redeem the Bonds in whole, but not in part only, at their principal amount, together with interest accrued but unpaid to the date fixed for redemption following which the Issuer shall immediately, or if the Issuer fails to do so the Guarantor may, give notice to the Bondholders, the Trustee and the CMU Lodging and Paying Agent in accordance with Condition 17 (*Notices*) of the Terms and Conditions of the Bonds (which notice shall be irrevocable).

For a description of these and certain further restrictions on offers, sales and resales of the Bonds and the CGIF Guarantee and the distribution of this Offering Circular, see "*Subscription and Sale*."

The Bonds are expected to be rated AA by S&P Global Ratings, a division of S&P Global Inc. ("**S&P**"). A security rating is not a recommendation to buy, sell or hold securities and may be subject to suspension, reduction or withdrawal at any time by the assigning rating agency.

Investing in the Bonds involves risks. For a description of certain risks to be considered in connection with an investment in the Bonds, see "*Risk Factors*" beginning on page 5.

The Bonds will be evidenced by a global certificate (the "**Global Certificate**"), in registered form, which will be registered in the name of, and lodged with a sub-custodian for, the Hong Kong Monetary Authority as operator (the "**Operator**") of the Central Moneymarkets Unit Service ("**CMU**"). Beneficial interests in the Global Certificate will be shown on, and transfer thereof will be effected only through, records maintained by the CMU. For persons seeking to hold a beneficial interest in the Bonds through Euroclear Bank SA/NV ("**Euroclear**") and Clearstream Banking S.A. ("**Clearstream**"), such persons will hold their interest through an account opened and held by Euroclear or Clearstream with CMU. Except as described herein, individual certificates for the Bonds will not be issued in exchange for interests in the relevant Global Certificate. The Bonds constitute freely transferable securities. Except in the limited circumstances set out herein, individual certificates will not be issued in exchange for interests in the Global Certificate.

Approval in-principle has been received from the Singapore Exchange Securities Trading Limited (the "**SGX-ST**") for the listing and quotation of the Bonds on the Official List of the SGX-ST. The SGX-ST assumes no responsibility for the accuracy of any of the statements made or opinions or reports contained in this Offering Circular. Admission of the Bonds to the Official List of the SGX-ST is not to be taken as an indication of the merits of the Issuer, the Guarantor or the Bonds. The Bonds will be traded on the SGX-ST in a minimum board lot size of S$200,000 (or its equivalent in foreign currencies) for so long as the Bonds are listed on the SGX-ST and the rules of the SGX-ST so require. There is currently no market for the Bonds.

The Bonds and the CGIF Guarantee have not been and will not be registered under the United States Securities Act of 1933, as amended (the "**Securities Act**") or the securities laws of any other jurisdiction. The Bonds and the CGIF Guarantee may not be offered, sold, pledged or otherwise transferred within the United States, except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act. The Bonds and the CGIF Guarantee are being offered and sold outside the United States in reliance on Regulation S under the Securities Act ("**Regulation S**"). For a description of these and certain further restrictions on offers, sales and transfers of the Bonds and the CGIF Guarantee and distribution of this Offering Circular, see "*Subscription and Sale*."

Sole Lead Manager

Standard Chartered Bank

The date of this Offering Circular is 13 April 2021.

IMPORTANT NOTICE

The Issuer confirms that: this Offering Circular (other than the section entitled "*Information on the Guarantor*") contains as of its date of issue all information with respect to the Issuer and the Group (as defined herein) (taken as a whole) and to the Bonds which is (in the context of the issue, offering and sale of the Bonds) material and does not, as of its date of publication, contain any untrue statement of a material fact nor does it, as of such date, omit to state any material fact necessary to make the statements about the Issuer or the Group (taken as a whole) therein, in the light of the circumstances under which they were made, not misleading. Any opinions, predictions or intentions expressed in this Offering Circular (other than the section entitled "*Information on the Guarantor*") are as of such date honestly held or made; and all reasonable enquiries have been made to ascertain or verify all material facts for the purpose of the foregoing. The Issuer accepts responsibility for the information contained in this Offering Circular accordingly.

The Guarantor confirms that: as of its date of issue, the information in relation to the Guarantor contained in the section entitled "*Information on the Guarantor*" of this Offering Circular is true and accurate in all material respects and is not misleading in any material respect; the section entitled "*Information on the Guarantor*" of this Offering Circular does not omit to state any material fact necessary to make such information relating to the Guarantor (in the context of the giving of the CGIF Guarantee) not misleading in any material respect; and all proper enquiries were made by the Guarantor to ascertain or verify the foregoing.

This Offering Circular has been prepared by the Issuer solely for use in connection with the issuance and offering of the Bonds described herein. The Sole Lead Manager reserves the right, for any reason, to reject any offer to subscribe for the Bonds, in whole or in part.

The distribution of this Offering Circular and the offering, sale or delivery of the Bonds in certain jurisdictions may be restricted by law. Persons who acquire this Offering Circular are required by the Issuer, the Guarantor, the Sole Lead Manager, the Trustee and the Agents (as defined in the "*Terms and Conditions*") to inform themselves about and to observe any such restrictions. No action is being taken to permit a public offering of the Bonds or the possession or distribution of this Offering Circular or any offering or publicity material relating to the Bonds in any jurisdiction where action would be required for such purposes. There are restrictions on the offer and sale of the Bonds and the circulation of documents relating thereto, in certain jurisdictions and to persons connected therewith. For a description of certain further restrictions on offers, sales and resales of the Bonds and the distribution of this Offering Circular, see "*Subscription and Sale*." This Offering Circular does not constitute an offer of, or an invitation to subscribe for or purchase, any of the Bonds and may not be used for the purpose of an offer to, or a solicitation by, anyone in any jurisdiction or in any circumstances in which such offer, invitation to subscribe or purchase, or solicitation is not authorised or would be unlawful. By purchasing the Bonds, investors represent and agree to all of those provisions contained in that section of this Offering Circular. Nothing contained in this Offering Circular is, or shall be relied upon as a promise or representation, whether as to the past or the future.

No person has been authorised to give any information or to make any representation concerning the Issuer, the Guarantor, the Group, the Bonds or the CGIF Guarantee other than those included in this Offering Circular in connection with the issuance, offering or sale of the Bonds and, if given or made, such information or representation must not be relied upon as having been authorised by the Issuer, the Guarantor, the Sole Lead Manager, the Trustee or the Agents or any of their respective affiliates. Neither the delivery of this Offering Circular nor any sale made in connection herewith shall, under any circumstances, create any implication or constitute any representation that there has been no change in the Issuer's affairs or that there has been no adverse change in the Issuer's or the Group's financial position since the date hereof or the date upon which this Offering Circular has been most recently amended or supplemented or create an implication that any other information supplied in connection with the Bonds is correct as of any time subsequent to the date on which it is supplied or, if different, the date indicated in the document containing the same.

Information in respect of the Guarantor contained in this Offering Circular has been provided by the Guarantor and has not been verified by the Issuer and the Issuer does not take any responsibility, express or implied, for any information contained in the section entitled "*Information on the Guarantor*." The Issuer has not taken any steps to verify the accuracy of any of the information contained in the section entitled "*Information on the Guarantor*," and no representation or warranty, express or implied, is made by the Issuer as to the accuracy or completeness of the information contained in that section.

Information in respect of the Issuer contained in this Offering Circular has been provided by the Issuer and has not been verified by the Guarantor. None of the Guarantor, its management nor its employees take any responsibility, express or implied, for any information contained in this Offering Circular, other than the information contained in the section entitled "*Information on the Guarantor*." In addition, none of the foregoing parties has taken any steps to verify the accuracy of any of the information included in this Offering Circular, other than the information contained in the section entitled "*Information on the Guarantor*," and no representation or warranty, express or implied, is made by any such parties as to the accuracy or completeness of the information contained in this Offering Circular.

None of the Sole Lead Manager, the Guarantor, the Trustee and the Agents or any of their respective affiliates, officers, representatives, directors, employees, agents or advisers makes any representation or warranty, express or implied, as to the accuracy or completeness of the information contained in this Offering Circular. None of the Sole Lead Manager, the Trustee and the Agents or any of their respective affiliates, officers, representatives, directors, employees, agents or advisers has independently verified any of such information and assumes no responsibility for its accuracy or completeness. Each person receiving this Offering Circular acknowledges that such person has not relied on the Sole Lead Manager, the Guarantor, the Trustee and the Agents or any of their respective affiliates, directors, employees, agents or advisers in connection with its investigation of the accuracy of such information or its investment decision. Neither this document nor any other information supplied in connection with the offering of the Bonds (a) is intended to provide the basis of any credit or other evaluation or (b) should be considered as a recommendation by the Issuer, the Guarantor, the Sole Lead Manager, the Trustee or the Agents or any of their respective affiliates, officers, representatives, directors, employees, agents or advisers that any recipient of this document, or any other information supplied in connection with the offering of the Bonds, should purchase the Bonds. Each person contemplating making an investment in the Bonds must make its own investigation and analysis of the Issuer's and the Guarantor's creditworthiness and its own determination of the suitability of any such investment, with particular reference to its own investment objectives and experience and any other factors which may be relevant to it in connection with such investment. No person should construe the contents of this Offering Circular as legal, business or tax advice and each person should be aware that it may be required to bear the financial risks of any investment in the Bonds for an indefinite period of time. Each person should consult its own counsel, accountant and other advisers as to legal, tax, business, financial and related aspects of an investment in the Bonds. To the fullest extent permitted by law, none of the Sole Lead Manager, the Guarantor, the Trustee and the Agents or any of their respective affiliates, officers, representatives, directors, employees, agents or advisers accepts any responsibility for the contents of or any omission from this Offering Circular or for any statement made or purported to be made by it or on its behalf with respect to the Issuer or the offering and issuance of the Bonds for so long as the Bonds remain outstanding nor undertake to advise any investor or potential investor of the Bonds of any information coming to the attention of any of the Sole Lead Manager, the Guarantor, the Trustee, the Agents or their respective affiliates, officers, representatives, directors, employees, agents, or advisers. Each of the Sole Lead Manager, the Guarantor, the Trustee and the Agents or any of their respective affiliates, officers, representatives, directors, employees, agents or advisers accordingly disclaims any and all liability whether arising in tort or contract or otherwise (save as referred to above) which it might otherwise have in respect of this Offering Circular.

This Offering Circular does not constitute an offer of, or an invitation by or on behalf of the Issuer, the Guarantor, the Sole Lead Manager, the Trustee or the Agents or any of their respective affiliates, officers, representatives, directors, employees, agents or advisers to subscribe for or purchase, any Bonds in any jurisdiction or in any circumstances in which such offer, invitation or solicitation is not authorised or to any person to whom it is unlawful to make such offer, invitation or solicitation.

None of the Issuer, the Guarantor, the Sole Lead Manager nor any of their respective affiliates, officers, representatives, directors, employees, agents or advisers makes any representation to any investor regarding the legality of an investment by such investor under applicable laws. Investors should not consider any information in this document to be legal, business and tax advice regarding an investment in the Bonds. See the section entitled "*Risk Factors*" for a discussion of certain factors to be considered in connection with an investment in the Bonds.

The Issuer and the Sole Lead Manager are relying on the exemption from registration under the Securities Act provided by Regulation S for offers and sales of securities made outside the United States. The Bonds and the CGIF Guarantee have not been registered under the Securities Act or the securities laws of any other jurisdiction and, unless so registered, may be offered or sold only in transactions that are exempt from or not subject to, the registration requirements of the Securities Act and any other applicable laws.

Each purchaser of the Bonds must comply with all applicable laws and regulations in force in each jurisdiction in which it purchases, offers or sells such Bonds or possesses or distributes this Offering Circular and must obtain any consent, approval or permission required by it for the purchase, offer or sale by it of such Bonds under the laws and regulations in force in any jurisdictions to which it is subject or in which it makes such purchases, offers or sales and neither the Issuer, the Guarantor nor the Sole Lead Manager shall have any responsibility therefor.

The Sole Lead Manager and any of its affiliates may purchase the Bonds for its or their own account and enter into transactions, including credit derivatives, such as asset swaps, repackaging and credit default swaps relating to the Bonds and/or other securities of the Issuer or the Guarantor or their respective subsidiaries or associates at the same time as the offer and sale of the Bonds or in secondary market transactions. Such transactions may be carried out as bilateral trades with selected counterparties and separately from any existing sale or resale of the Bonds to which this Offering Circular relates (notwithstanding that such selected counterparties may also be purchasers of the Bonds). Furthermore, investors in the Bonds may include entities affiliated with the Issuer or the Guarantor.

Investors are advised to read and understand the contents of this Offering Circular before investing. If in doubt, investors should consult his or her adviser.

IN CONNECTION WITH THE ISSUE OF THE BONDS, THE SOLE LEAD MANAGER ACTING IN ITS CAPACITY AS A STABILISATION MANAGER (OR PERSONS ACTING ON BEHALF OF THE STABILISATION MANAGER) MAY OVER ALLOT BONDS OR EFFECT TRANSACTIONS WITH A VIEW TO SUPPORTING THE MARKET PRICE OF THE BONDS AT A LEVEL HIGHER THAN THAT WHICH MIGHT OTHERWISE PREVAIL. HOWEVER, STABILISATION MAY NOT NECESSARILY OCCUR. ANY STABILISATION ACTION MAY BEGIN ON OR AFTER THE DATE ON WHICH ADEQUATE PUBLIC DISCLOSURE OF THE TERMS OF THE OFFER OF THE BONDS IS MADE AND, IF BEGUN, MAY CEASE AT ANY TIME, BUT IT MUST BE BROUGHT TO AN END AFTER A LIMITED PERIOD. ANY STABILISATION ACTION OR OVER ALLOTMENT MUST BE CONDUCTED BY THE STABILISATION MANAGER (OR PERSON(S) ACTING ON BEHALF OF THE STABILISATION MANAGER) IN ACCORDANCE WITH ALL APPLICABLE LAWS AND RULES.

Market data and certain industry forecasts and statistics in this Offering Circular have been obtained from both public and private sources, including market research, publicly available information and industry publications. Although the Issuer believes this information to be reliable, this information has not been independently verified by the Issuer, the Guarantor, the Sole Lead Manager, the Trustee or the Agents or their respective affiliates, officers, representatives, directors, employees, agents or advisers, and none of the Issuer, the Guarantor, the Sole Lead Manager, the Trustee or the Agents or their respective affiliates, officers, representatives, directors, employees, agents or advisers makes any representation as to the accuracy or completeness of that information. In addition, third party information providers may have obtained information from market participants and such information may not have been independently verified. This Offering Circular summarises certain documents and other information, and investors should refer to them for a more complete understanding of what is discussed in those documents.

The contents of this Offering Circular have not been reviewed by any regulatory authority in any jurisdiction. Investors are advised to exercise caution in relation to the offer. If investors are in any doubt about any of the contents of this Offering Circular, investors should obtain independent professional advice.

SINGAPORE SECURITIES AND FUTURES ACT PRODUCT CLASSIFICATION: Solely for the purposes of its obligations pursuant to sections 309B(1)(a) and 309B(1)(c) of the Securities and Futures Act (Chapter 289) of Singapore (the "**SFA**"), the Issuer has determined, and hereby notifies all relevant persons (as defined in Section 309A of the SFA), that the Bonds are 'prescribed capital markets products' (as defined in the Securities and Futures (Capital Markets Products) Regulations 2018 of Singapore) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

CERTAIN DEFINED TERMS AND CONVENTIONS

All references to the "**Issuer**" are references to Hanwha Solutions Corporation. All references to the "**Group**" are to the Issuer and its consolidated subsidiaries. All references to "**Korea**" are references to the Republic of Korea. All references to "**China**" or the "**PRC**" are references to the Peoples' Republic of China (excluding, for the purposes of this Offering Circular, Hong Kong, Macau and Taiwan).

Unless otherwise indicated or required by the context, all references in this Offering Circular to "**U.S. dollars**" or "**U.S.$**" are to United States dollars, the lawful currency of the United States, to "**Won**" are to Korean Won, the lawful currency of Korea, to "**Renminbi**" are to Chinese Renminbi, the lawful currency of China, to "**CNY**" are to Chinese Yuan (Offshore), the lawful currency of China that is being traded and settled offshore, and to "**S$**" are to the Singapore Dollar, the lawful currency of Singapore.

PRESENTATION OF FINANCIAL INFORMATION

This Offering Circular contains the audited consolidated financial statements of the Issuer as of and for the years ended 31 December 2020 and 2019 (the "**Issuer Audited Financial Statements**"), which were prepared in accordance with International Financial Reporting Standards as adopted in Korea ("**Korean IFRS**") and audited by Deloitte Anjin LLC ("**Deloitte Anjin**"). Unless specified or the context otherwise requires, all financial information in this Offering Circular relating to the Issuer is presented on a consolidated basis in accordance with Korean IFRS.

This Offering Circular also contains the audited financial statements of the Guarantor as of and for the years ended 31 December 2019 and 2018 (the "**Guarantor Audited Financial Statements**"), which were prepared in accordance with International Financial Reporting Standards ("**IFRS**") and audited by Deloitte & Touche LLP ("**Deloitte**"). Unless specified or the context otherwise requires, all financial information in this Offering Circular relating to the Guarantor is presented in accordance with IFRS.

The Issuer Audited Financial Statements were prepared in accordance with Korean IFRS, which differ in certain respects from generally accepted accounting principles in other countries, including IFRS, which differences might be material to the financial information presented herein. Potential investors should consult their own professional advisers for an understanding of the difference between Korean IFRS, IFRS and accounting principles in certain other jurisdictions, and how those differences might affect the financial information presented herein. In making an investment decision, investors must rely upon their own independent examination of the Issuer, the Group, and the Guarantor, the terms of this offering and the recent financial information of the Issuer, the Group and the Guarantor.

ROUNDING

In this Offering Circular, amounts may have been rounded up or down. Accordingly, figures shown as totals in certain tables may not be an arithmetic aggregation of the figures which precede them. References to information in billions of units are to the equivalent of a thousand million units.

FORWARD-LOOKING STATEMENTS AND ASSOCIATED RISKS

This Offering Circular includes words such as "believe," "plan," "expect," "intend," "should," "seek," "estimate" "will," "aim" and "anticipate" and similar expressions that constitute "forward-looking statements" as that term is defined under U.S. federal securities laws.

Such statements are subject to certain risks and uncertainties because they relate to and depend on events and circumstances that may or may not occur. The Issuer cautions potential investors that forward-looking statements are not guarantees of future performance and that the Issuer's actual financial condition, results of operations and cash flows, and prospects may differ materially from those made in or suggested by the forward-looking statements included in this Offering Circular. In addition, even if the Issuer's financial condition, results of operations and cash flows and prospects are consistent with such statements, those results or developments may not be indicative of results or prospects in subsequent periods. Actual results may differ materially from information contained in such forward-looking statements as a result of a number of factors, many of which are beyond the Issuer's control, including:

- cyclicality in the petrochemical industry;
- fluctuations in the market price of raw materials;
- competition in the industries the Group competes in;
- government policies towards renewable energy;
- integration of companies merged into the Group;
- an inability to attract and retain key management and qualified personnel;
- risks associated with the Group's business activities;
- general economic and political conditions;
- the Group's ability to implement its business strategy and plan of operation;
- the Group's financial condition and results of operations;
- fluctuations in foreign currency exchange rates;
- environmental regulations;
- exchange rate and/or interest rate fluctuations; and
- those other risks identified in the "*Risk Factors*" section of this Offering Circular.

The occurrence of one or more of these factors, among others, could cause the Issuer's actual results to vary materially from those estimated, anticipated or projected. Although the Issuer believes that its management's expectations as reflected in such forward-looking statements are reasonable based on information currently available to the Issuer, it cannot be assured that such expectations will be realised. Accordingly, prospective purchasers are cautioned to not place undue reliance on such forward-looking statements and to carefully consider the foregoing factors and other uncertainties and events, especially in light of the political, economic, social and legal environment in which the Issuer operates. Such forward-looking statements speak only as of their dates, and the Issuer undertakes no obligation to publicly revise any of them, whether as a result of new information, future events or otherwise, subject to compliance with all applicable laws, including the rules of the SGX-ST. The Issuer urges potential investors to read this Offering Circular, including the sections entitled "*Risk Factors*" and "*The Issuer*" for a more complete discussion of the factors that could affect the Issuer's performance.

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SUMMARY OF THE OFFERING

The following is a general summary of the terms of the Bonds and the CGIF Guarantee and it is qualified in its entirety by reference to, and should be read in conjunction, with the general summary section entitled "Terms and Conditions of the Bonds" and the Trust Deed. The Trust Deed prevails to the extent of any inconsistency with the general summary set forth in this section. Terms used in this summary and not otherwise defined have the meanings given to such terms in "Terms and Conditions of the Bonds."

Issuer	Hanwha Solutions Corporation Legal Entity Identifier: 549300M2V0ZS71BRNR68
Guarantor	Credit Guarantee and Investment Facility, a trust fund of the Asian Development Bank.
Bonds Offered	CNY1,000,000,000 in aggregate principal amount of 3.00 per cent. Guaranteed Green Bonds due 2024.
Guarantee of the Bonds	Payment of all sums from time to time payable by the Issuer in respect of the Bonds is irrevocably and unconditionally guaranteed by the Guarantor to the extent of, and in accordance with and subject to, the terms of the CGIF Guarantee.
Issue	The Bonds are proposed to be issued under the ASEAN+3 Multi-Currency Bond Issuance Framework ("**AMBIF**").
Issue Price	3.00 per cent. of the principal amount of the Bonds.
Maturity Date	19 April 2024.
Interest	The Bonds will bear interest from, and including 19 April 2021 at the rate of 3.00 per cent. per annum, payable semi-annually in arrear.
Interest Payment Dates	19 April and 19 October of each year, commencing 19 October 2021.
Status of the Bonds	The Bonds will constitute direct, unconditional, unsubordinated and (subject to Condition 4 (*Negative Pledge*) of the Terms and Conditions of the Bonds) unsecured obligations of the Issuer and shall at all times rank *pari passu* and without any preference among themselves. The payment obligations of the Issuer under the Bonds shall, save for such exceptions as may be provided by applicable legislation, at all times rank at least equally with all other unsecured and unsubordinated indebtedness of the Issuer, present and future.
Status of the CGIF Guarantee	The payment obligations of the Issuer under the Bonds and the Trust Deed will be unconditionally and irrevocably guaranteed by the Guarantor to the extent of, and in accordance with and subject to, the terms of the CGIF Guarantee. Such obligations of the Guarantor under the CGIF Guarantee are direct, unconditional and general obligations of the Guarantor and rank *pari passu* with the claims of all its other unsecured and unsubordinated creditors, except for obligations mandatorily preferred by law. The CGIF Guarantee does not cover any relevant amounts of principal or accrued but unpaid interest that become payable by the Issuer on the exercise by it of an early redemption, including as a result of the Issuer's redemption for tax reasons (Condition 7(b) (*Redemption and Purchase—Redemption for tax reasons*)) of the

Terms and Conditions of the Bonds). In order to mitigate any risk of the Issuer not paying the relevant amount of principal and/or accrued but unpaid interest arising out of or in connection with the Issuer exercising any of its rights of early redemption, the Issuer, in exercising its rights for redemption for tax reasons, is required to, not less than one Business Day prior to the publication of any notice of redemption in relation to redemption for tax reasons under Condition 7(b) (*Redemption and Purchase—Redemption for tax reasons*) of the Terms and Conditions of the Bonds, transfer to a Renminbi account maintained by the CMU Lodging and Paying Agent for the benefit of the Bondholders an amount in Renminbi in immediately available cleared funds sufficient to redeem the Bonds at their principal amount together with any interest accrued but unpaid to the relevant date fixed for redemption.

The recourse of the Bondholders against CGIF in respect of the CGIF Guarantee and any other documents related to the Bonds is limited solely to the CGIF Assets. By its holding of a Bond each Bondholder will be deemed to acknowledge and accept that it, and the Trustee on its behalf, only has recourse to the CGIF Assets and neither the Trustee nor any Bondholder has recourse to any assets of the Asian Development Bank or any other contributors to CGIF. Any obligation under the CGIF Guarantee shall not constitute an obligation of the Asian Development Bank or any other contributors to CGIF.

For further information on the terms of the CGIF Guarantee, see "*Description of the CGIF Guarantee*" and Appendix A.

Use of Proceeds . . . . The Issuer will allocate the net proceeds from the offering of the Bonds towards the financing or refinancing, in whole or in part, of new or existing projects in "Eligible Green Projects" in accordance with the Issuer's Green Financing Framework (the "**Framework**"). See "*Use of Proceeds*" and "*Green Financing Framework*."

Negative Pledge . . . . The terms of the Bonds contain a negative pledge provision as further described in Condition 4 (*Negative Pledge*) of the Terms and Conditions of the Bonds.

Redemption at Maturity . . . . Unless previously redeemed, or purchased and cancelled, the Bonds will be redeemed at their principal amount on the relevant Maturity Date, subject as provided in Condition 8 (*Payments*) of the Terms and Conditions of the Bonds.

Redemption for tax reasons . . . . The Bonds may be redeemed at the option of the Issuer in whole, but not in part only, at any time, on giving not less than 15 nor more than 30 days' notice to the Bondholders, the Guarantor, the Trustee and the CMU Lodging and Paying Agent (which notice shall be irrevocable) at their principal amount, together with interest accrued but unpaid to the date fixed for redemption, in the event of certain tax changes if, immediately before giving such notice, the Issuer satisfies certain conditions as described in Condition 7(b) (*Redemption and Purchase—Redemption for tax reasons*) of the Terms and Conditions of the Bonds.

Redemption in the event of a CGIF Acceleration . . . . At any time following the occurrence of a CGIF Acceleration (as defined herein), the Guarantor may at its discretion, on giving not less than 7 nor more than 15 days' notice to the Issuer, the Trustee and the CMU Lodging and Paying Agent, require the Issuer to redeem the

	Bonds in whole, but not in part only, at their principal amount, together with interest accrued but unpaid to the date fixed for redemption following which the Issuer shall immediately, or if the Issuer fails to do so the Guarantor may, give notice of the redemption of the Bonds to the Bondholders, the Trustee and the CMU Lodging and Paying Agent (which notice shall be irrevocable).
Events of Default	The terms of the Bonds contain certain events of default provisions as further described in Condition 11 (*Events of Default*) of the Terms and Conditions of the Bonds.
Selling Restrictions	The Bonds and the CGIF Guarantee will not be registered under the Securities Act or under any state securities laws of the United States or of any other jurisdiction. See "*Subscription and Sale*."
Form and Denomination of the Bonds	The Bonds will be issued in registered form and in the denominations of CNY1,000,000 and integral multiples of CNY10,000 in excess thereof.
Clearing System	The Bonds will be represented by beneficial interests in the Global Certificate in registered form, which will be registered in the name of, and lodged with a sub-custodian for the Hong Kong Monetary Authority as operator of the CMU. Beneficial interests in the Global Certificate will be shown on and transfers thereof will be effected only through records maintained by the CMU. For persons seeking to hold a beneficial interest in the Bonds through Euroclear and Clearstream, such persons will hold their interest through an account opened and held by Euroclear or Clearstream with CMU. Except in the limited circumstances described in the Global Certificate, individual certificates for the Bonds will not be issued in exchange for beneficial interests in the Global Certificate.
Clearing and Settlement	CMU. For a description of certain factors relating to clearance and settlement, see "*Clearing and Settlement*."
Trustee and Registrar	Citicorp International Limited
CMU Lodging and Paying Agent and Transfer Agent	Citicorp International Limited
CMU Instrument Number	CILHFB21003
ISIN Code	HK0000722261
Common Code	233348180
Listing	Approval in-principle has been received from the SGX-ST for the listing and quotation of the Bonds on the Official List of the SGX-ST. Admission of the Bonds to the Official List of the SGX-ST is not to be taken as an indication of the merits of the Issuer, the Guarantor or the Bonds. The Bonds will be traded on the SGX-ST in a minimum board lot size of S$200,000 (or its equivalent in foreign currencies) for so long as the Bonds are listed on the SGX-ST and the rules of the SGX-ST so require. So long as the Bonds are listed on the SGX-ST and the rules of the SGX-ST so require, the Issuer shall appoint and maintain a paying agent in Singapore, where such Bonds may be presented or surrendered for payment or redemption, in the event that the Global Certificate representing such Bonds is exchanged for definitive

certificates. In addition, an announcement of such exchange will be made by or on behalf of the Issuer through the SGX-ST. Such announcement will include all material information with respect to the delivery of the definitive certificates or, as the case may be, certificates, including details of the paying agent in Singapore.

The CGIF-Guaranteed Bonds issued by the Issuer are proposed to be issued under the AMBIF.

AMBIF is a policy initiative under the Asian Bond Markets Initiative ("**ABMI**") that seeks to facilitate intra-regional bond and note issuances by streamlining market practises, documentation and disclosure information requirements common among ASEAN+3 domestic bond markets. Through the AMBIF, issuers are able to expand into ASEAN+3 markets outside their country of domicile, and investors are able to actively participate in the region's various investment opportunities.

Since ABMI established the ASEAN+3 Bond Market Forum in 2010, three entities have issued debt under the AMBIF format in three different jurisdictions.

Governing Law .... The Bonds, the CGIF Guarantee, the Trust Deed, the Agency Agreement and any non-contractual obligations arising out of or in connection therewith will be governed by, and will be construed in accordance with English law and any disputes arising thereunder are subject to arbitration under the Rules of the Singapore International Arbitration Centre.

Ratings .... The Bonds are expected to be rated AA by S&P. A rating is not a recommendation to buy, sell or hold securities and may be subject to revision, suspension or withdrawal at any time by the assigning rating organisation. No guarantee is made that such ratings will not be adversely revised or withdrawn either before or after delivery of the Bonds. See "*Risk Factors—Risk Relating to the Bonds*."

Risk Factors .... For a discussion of certain factors that should be considered in evaluating an investment in the Bonds, see "*Risk Factors*."

RISK FACTORS

An investment in the Bonds is subject to a number of risks. Potential investors should carefully consider all the information contained in this Offering Circular including the risks described below before making an investment decision. The Group's business, financial condition and results of operations could be materially and adversely affected by any of these risks. The market price of the Bonds could decline due to any of these risks and investors may lose all or part of their investment. The risks described below are not the only ones that may affect the Group or the Bonds. This Offering Circular contains forward-looking statements relating to events that involve risks and uncertainties. The Group's actual results may differ materially from those anticipated in forward-looking statements as a result of various factors, including the risks faced by the Group described below and elsewhere in this Offering Circular.

Risks Relating to the Group's Business and Industry

Cyclicality in the petrochemical industry has in the past adversely affected, and may in the future adversely affect, the Group's business, operating results, cash flows and financial condition.

The petrochemical industry is highly cyclical and demand for petrochemical products has fluctuated depending on general economic conditions in Korea and abroad. An imbalance between supply and demand, as well as the emergence of low cost producers in the Middle East and the United States which are located near fuel sources, have resulted in pricing pressures as well as uncertainty regarding future prospects for the global petrochemical industry. The petrochemical industry has suffered in the past from, and continues to face the prospects of, an oversupply of petrochemical products as a result of continued expansion of petrochemical production capacity in Asia, the Middle East and the United States, and it is uncertain whether prices and margins in the Korean and global market for petrochemical products can be sustained in the longer term.

This cyclicality and volatility may reduce the Group's revenue and margin, including as follows:

- downturns in general business and economic activity may cause demand for the Group's products to decline;
- when demand falls, the Group may face competitive pressures to lower its prices; and
- if the Group decides to expand its existing plants or construct new plants, it may do so based on an estimate of future demand that never materialises or materialises at levels lower than the Group predicted.

Although the Group seeks to enhance operational efficiency in order to maintain its margins and strengthen its market position, deterioration in global economic conditions and oversupply of petrochemical products may result in a decline in demand for the Group's products, significant price competition and declines in margins. There can be no assurance that the Group will not be adversely affected by such factors, as well as by the volatility of prices of petrochemical products in the Korean and international markets.

The supply and market price of certain key raw materials, particularly those of crude oil, significantly affect the Group's gross margin and overall financial performance.

The Group's chemical division produces olefin-based petrochemical products based on ethylene and propylene feedstock. Ethylene and propylene are produced by processing naphtha, a by-product of crude oil, and the cost of ethylene and propylene feedstock constitutes a substantial portion of the cost of sales of the Group's chemical division. The financial performance of the Group's chemical division is significantly impacted by the market price of naphtha, which in turn is affected by the market price of crude oil. Accordingly, the Group is exposed to increases in the price of crude oil and has limited ability to control its raw material costs.

Historically, the supply and the market price of crude oil have been subject to a variety of factors that are beyond the Group's control, including the following:

- political developments and instability in the petroleum producing regions, in particular, the Middle East;
- exchange rate and interest rate fluctuations;
- activities of the Organization of Petroleum Exporting Countries and other petroleum producing nations in setting and maintaining production levels and, therefore, market prices;

- global economic growth and demand for energy resources;
- the development, market prices and supply levels of substitute energy sources, such as natural gas, coal, nuclear energy, solar energy and hydropower;
- the level of commitment and investment by governments and private sector enterprises in new, greenfield exploration projects and the success of such activities in increasing the global supply of crude oil for commercial applications;
- Korean as well as foreign government regulations with respect to the oil and energy industries in general;
- global weather conditions;
- expectations of inflation; and
- overall Korean and global economic conditions.

In recent years, due to various reasons, the price of crude oil has fluctuated significantly. Such price fluctuations in crude oil have led to volatility in naphtha and naphtha-based ethylene and propylene prices. The Group expects that the volatility and uncertainty of the prices of crude oil and petrochemical products will continue, and that if crude oil prices increase due to instability in the global market or fluctuations in exchange rates, the price of the Group's petrochemical products will decline and may adversely affect its business and results of operations and financial condition.

To mitigate the effect of price volatility in raw material prices on its operations, the Group has historically been able to pass on increases in the raw material prices to its customers through price increases to some extent. However, because there is a time lag of generally one to two months before an increase in naphtha and ethylene prices is reflected in the prices of its petrochemical products, the Group has, from time to time, been unable to pass along such increased costs to its customers without negatively impacting customer demand or its long-term relationship with customers. In some cases, the Group has not been able to pass on increases in the raw material prices through price increases to its customers as it would affect its competitive position. Although the impact of fluctuations in raw material prices has in the past been partially mitigated by such strategy, there can be no assurance that such strategy will be sufficient to reduce or eliminate the adverse impact of such fluctuations in the future. Future increases in prices of the Group's raw materials, particularly naphtha-based ethylene, which are affected by fluctuation in crude oil prices and its inability to pass along such increases to its customers on a timely basis may have a material adverse effect on its financial condition and results of operations.

The success of the Group's chemical division is dependent on the spread between ethylene and naphtha.

The prices of ethylene and propylene, raw materials derived from naphtha, rely on the price of naphtha, which has fluctuated significantly in recent years. Accordingly, the success and profitability of petrochemical businesses are determined by the ethylene-naphtha spread, which indicates the price difference between naphtha and ethylene. If the unit price of naphtha increases, the spread between raw materials and processed goods diminishes and therefore the Group's profit margin will decrease. The Group is required to continue monitoring ethylene and naphtha prices, and it may face decreased profitability resulting from a reduced spread between ethylene and naphtha prices.

Change in government policies and increased competition may have a material adverse effect on the Group's Q CELLS solar energy division.

Demand for solar power products has been affected by global economic conditions and government policies, including subsidies used to encourage renewable energy sources. As a result, the economic feasibility of solar power is substantially dependent on government policies toward the renewable energy industry. Solar energy businesses have primarily flourished in the United States, United Kingdom and Japan, where such governments have actively encouraged the development of renewable energy. However, any reduction or elimination of government subsidies and economic incentives in a particular country may adversely impact the growth of the solar energy markets, which could decrease demand for the Group's products and reduce its revenue. In addition, the Group faces increasingly strong competition, especially relating to the oversupply from Chinese solar energy companies who have greater price competitiveness and a number of businesses have ceased their operations as a result of such competition. In 2020, the Group closed its polysilicon business unit, which had produced raw materials for its solar power products, after facing continued losses. As a result, the Group's ability to complete the solar production value chain has been limited, and any potential surge in the price of raw materials such as polysilicon may negatively affect the Group's competitiveness and therefore the Group's results of operations.

The Group's advanced materials division is dependent on the downstream demand from the automotive, solar and electronics industries.

The Group's advanced materials division manufactures industrial materials for use in downstream automotive, solar and electronic products. Accordingly, the results of operations of the Group's advanced materials division is highly dependent on the demand from these downstream industries. In recent years, the automotive materials industry has faced increased regulations resulting in requests from buyers to enhance product quality and manufacture materials that support eco-friendly measures. In addition, the electronics market has become increasingly saturated in recent years, which has diminished further potential growth prospects for the industry. Accordingly, the sales of the Group's advanced materials may become stagnant, should the business conditions of related industries become unfavourable.

The Group may fail to realise the benefits of the mergers with Hanwha Q CELLS & Advanced Materials and Hanwha Galleria if the Group experiences difficulties integrating the operations of the merged companies.

In January 2020, the Group merged Hanwha Q CELLS & Advanced Materials, then a subsidiary of the Issuer and a solar solutions and advanced materials company. Previously, Hanwha Q CELLS & Advanced Materials was formed from a merger between Hanwha Q CELLS and Hanwha Advanced Materials in November 2018. In addition, the Group's merged with Hanwha Galleria, then a subsidiary of the Issuer and Hanwha Group's premier fashion and department store business, on 1 April 2021.

The success of the mergers will depend, in large part, on the Group's ability to seamlessly integrate the operations of the merged businesses into one company, and to realise the anticipated synergies. If the Group's projections relating to the merger are incorrect or it is not able to successfully combine the merged companies, anticipated synergies may not be realised fully or at all, or may take longer to realise than anticipated. In addition, integration requires substantial management attention and could detract attention away from the day-to-day business of the combined company. The Group could encounter difficulties in the integration process, such as the loss of key employees, customers or suppliers. If the Group does not integrate the businesses successfully, it may fail to realise the expected benefits from the mergers.

The Group may fail to realise the benefits of the Group's strategic acquisitions and reorganisation efforts, which may adversely affect its business, financial condition and results of operations.

In recent years, the Group has utilised strategic acquisitions and reorganisations to accelerate the expansion and diversification of its business portfolio, establish new revenue streams and otherwise create synergies of strategic value to its business.

Strategic acquisitions and reorganisation efforts involve risks and uncertainties, including those associated with the integration of new business segments and expansion of the Group's product portfolio, unforeseen levels of diversion of the Group's resources and management attention, or the failure to realise the anticipated benefits and synergies. Strategic alliances with third parties could subject the Group to a number of risks, including risks associated with sharing proprietary information and non-performance by the third party. The Group's ability to realise the anticipated benefits from its acquisitions and reorganisation depends on its ability to successfully integrate them with the rest of its business operations. If the Group is unable to do so in an efficient manner and reasonable timeframe, its business, financial condition and results of operations may be adversely affected.

If third parties infringe upon the Group's intellectual property or if the Group were to infringe upon the intellectual property of third parties, the Group may expend significant resources enforcing or defending its rights or its reputation may be harmed.

While the Group takes steps to ensure that the use of any third-party intellectual property is pursuant to a licence and that any intellectual property that the Group develops itself is properly registered and protected, the Group cannot guarantee that the intellectual property underlying its products and processes do not infringe on the intellectual property rights of third parties. Any claims or litigation in these areas, whether the Group ultimately wins or loses, could be time-consuming and costly, harm its reputation or require it to enter into royalty or licencing arrangements. The Group may not be able to enter into such royalty or licencing arrangements on acceptable terms, or at all. In addition, if a claim of infringement were successful against the Group, an injunction may be ordered against its services or operations. If the Group loses its ability to utilise the intellectual property of others due to such an injunction or otherwise, it may not be able to continue providing its services in accordance with the requirements of its customers and business partners and its business and performance could be adversely affected.

The Group's business may be adversely affected by legal claims.

At any given time, the Group may be subject to legal claims in the ordinary course of its business, including those related to intellectual property disputes. As of 31 December 2020, the Group was involved in 32 legal claims as defendant with claims in the aggregate totalling Won 68.0 billion. See "*The Issuer—Legal and Regulatory Proceedings*."

In the event the Group is found liable in any material litigations or proceedings, it may be subject to significant damages, which could have a material adverse impact on its overall business and results of operations. Any limitations on the Group's business resulting from litigation or litigation settlements could impact its relationships with its customers and business partners, including reducing the volume of business that the Group does with them, which could have a material adverse effect on its business, financial condition and results of operations.

Risks Relating to Korea

If economic conditions in Korea deteriorate, the Group's current business and future growth could be materially and adversely affected.

The Issuer, along with many members of the Group, is incorporated in Korea and most of its operations are located in Korea. As a result, the Group is subject to political, economic, legal and regulatory risks specific to Korea. Since 2020, the economic indicators in Korea, including GDP, have deteriorated largely due the adverse macroeconomic conditions induced by the COVID-19 pandemic. Any future deterioration of the Korean economy, as a result of unfavourable global economic conditions or otherwise, could adversely affect the Group's business, financial condition and results of operations and the market price of the Bonds.

Developments that could have an adverse impact on the Korean economy include:

- the occurrence of severe health epidemics in Korea or other parts of the world, such as the outbreak of the COVID-19 pandemic, beginning in late 2019;
- declines in consumer confidence and a slowdown in consumer spending in the Korean or global economy;
- adverse conditions in the economies of countries and regions that are important export markets for Korea, such as China, the United States, Europe and Japan, or in emerging market economies in Asia or elsewhere, including as a result of economic and trade tensions between the United States and China and uncertain effects of the United Kingdom's exit from the European Union;
- adverse changes or volatility in foreign currency reserve levels, commodity prices (including oil prices), exchange rates (including fluctuation of the U.S. dollar, the Euro or Japanese Yen exchange rates or revaluation of the Chinese Renminbi), interest rates, inflation rates or stock markets;
- deterioration in economic or diplomatic relations between Korea and its trading partners or allies, including deterioration resulting from territorial or trade disputes or disagreements in foreign policy, in particular the ongoing trade disputes with Japan;
- increased sovereign default risk in select countries and the resulting adverse effects on the global financial markets;
- investigations of large Korean business groups and their senior management for possible misconduct;
- a continuing rise in the level of household debt and increasing delinquencies and credit defaults by retail and small- and medium-sized enterprise borrowers in Korea;
- social and labour unrest;
- substantial decreases in the market prices of Korean real estate;
- the economic impact of any pending or future free trade agreements or changes in existing free trade agreements;
- a decrease in tax revenue and a substantial increase in the Government's expenditures for fiscal stimulus measures, unemployment compensation and other economic and social programs that, together, would lead to an increased government budget deficit;
- financial problems or lack of progress in the restructuring of Korean business groups, other large troubled companies, their suppliers or the financial sector;

- loss of investor confidence arising from corporate accounting irregularities or corporate governance issues at certain Korean companies;
- increases in social expenditures to support an ageing population in Korea or decreases in economic productivity due to the declining population size in Korea;
- geo-political uncertainty and the risk of attacks by terrorist groups around the world;
- natural or man-made disasters that have a significant adverse economic or other impact on Korea or its major trading partners;
- political uncertainty or increasing strife among or within political parties in Korea;
- hostilities or political or social tensions involving oil producing countries in the Middle East and North Africa and any material disruption in the global supply of oil or sudden increase in the price of oil; and
- an increase in the level of tensions or an outbreak of hostilities between North Korea and Korea or the United States.

Escalations in tensions with North Korea could have an adverse effect on the Group and the market value of the Bonds.

Relations between Korea and North Korea have been tense throughout Korea's modern history. The level of tension between the two Koreas has fluctuated and may increase abruptly as a result of current and future events. In particular, there have been heightened security concerns over the years stemming from North Korea's nuclear weapons and ballistic missile programs as well as its hostile military actions against Korea. In January 2003, North Korea renounced its obligations under the Nuclear Non-Proliferation Treaty and has conducted several rounds of nuclear tests since October 2006, including claimed detonations of hydrogen bombs, which are more powerful than plutonium bombs, and warheads that can be mounted on ballistic missiles. In addition, North Korea has also conducted a series of ballistic missile tests, including missiles launched from submarines and intercontinental ballistic missiles that it claims can reach the United States mainland. In response, the Government has repeatedly condemned the provocations and flagrant violations of relevant United Nations Security Council resolutions. Internationally, the United Nations Security Council has passed a series of resolutions condemning North Korea's actions and have expanded the scope of sanctions applicable to North Korea in response to North Korea's nuclear and intercontinental ballistic missile tests. Over the years, the United States and the European Union have also expanded their sanctions applicable to North Korea.

North Korea's economy also faces severe challenges, which may further aggravate social and political pressures within North Korea. Since April 2018, North Korea has held a series of bilateral summit meetings with Korea and the United States to discuss peace and denuclearization of the Korean peninsula. However, North Korea has since resumed its missile testing, heightening tensions, and the outlook of such discussions remains uncertain.

Further tensions in North Korean relations could develop due to a leadership crisis, breakdown in high-level inter-Korea contacts or military hostilities. Alternatively, tensions may be resolved through reconciliatory efforts, which may include peace talks, alleviation of sanctions or reunification. There can be no assurance that future negotiations will result in a final agreement on North Korea's nuclear program, including critical details such as implementation and timing, or that the level of tensions between Korea and North Korea will not escalate. Any further increase in tensions could have a material adverse effect on the Korean economy and the Group's business, financial condition and results of operations and could lead to a decline in the market value of the Bonds.

There are special risks involved with investing in securities of Korean companies, including the possibility of restrictions being imposed by the Government in emergency circumstances as well as accounting and corporate disclosure standards that differ from those in other jurisdictions.

As the Issuer is a Korean company, there are risks associated with investing in its securities that are not typical for investments in securities of companies in other jurisdictions. As a Korean company, the Issuer operates in a business and cultural environment that is different from that of other countries.

Under the Foreign Exchange Transaction Act of Korea, if the Government determines that certain emergency circumstances, including sudden fluctuations in interest rates or exchange rates, extreme difficulty in stabilising the balance of payments or substantial disturbance in the Korean financial and capital markets, are likely to occur, it may impose any necessary restriction such as requiring Korean or foreign investors to obtain prior approval from the Minister of Economy and Finance of Korea for the capital markets transaction or for the repatriation of interest, dividends or sales proceeds arising from Korean securities or from disposition of such securities or other transactions involving foreign exchange.

In addition, the Issuer prepares and presents its financial statements in accordance with Korean IFRS, which differs in material respects from accounting principles applicable to companies in certain other countries. The Issuer also will make public disclosures regarding other aspects of its business in accordance with the relevant laws, the rules and regulations of the Korea Exchange and accepted practise in Korea. These disclosure rules and practises differ in material respects from those applicable to companies in certain other countries. There may also be less publicly available information about Korean companies, such as the Issuer, than is regularly made available by public or non-public companies in other countries. In making an investment decision, investors must rely upon their own examination of the Group, the terms of the offering and the financial information contained in this Offering Circular.

Risks Relating to the Bonds

The Bonds may not be a suitable investment for all investors.

Each potential investor in the Bonds must determine the suitability of the Bonds in light of its own circumstances. In particular, each potential investor should:

- have sufficient knowledge and experience to make a meaningful evaluation of the Bonds, the merits and risks of investing in the Bonds and the information contained in this Offering Circular;
- have access to, and knowledge of, appropriate analytical tools to evaluate, in the context of its particular financial situation, an investment in the Bonds and the impact such investment will have on its overall investment portfolio;
- have sufficient financial resources and liquidity to bear all of the risks of an investment in the Bonds;
- understand thoroughly the terms of the Bonds; and
- be able to evaluate (either alone or with the help of a financial adviser) possible scenarios for economic, interest rate and other factors that may affect its investment and its ability to bear the applicable risks.

A potential investor should not invest in the Bonds unless it has the expertise (either alone or with the help of a financial adviser) to evaluate how the Bonds will perform under changing conditions, the resulting effects on the value of such Bonds and the impact this investment will have on the potential investor's overall investment portfolio.

Additionally, the investment activities of certain investors may be subject to legal investment laws and regulations, or review or regulation by certain authorities. Each potential investor should consult its legal advisers to determine whether and to what extent: (i) the Bonds are legal investments for it; (ii) the Bonds can be used as collateral for various types of borrowing; and (iii) other restrictions apply to its purchase of any Bonds. Financial institutions should consult their legal advisers or the appropriate regulators to determine the appropriate treatment of Bonds under any applicable risk-based capital or similar rules.

The Bonds are subject to selling restrictions.

The Bonds and the CGIF Guarantee will not be registered under the Securities Act or any state securities laws and may not be offered or sold within the United States. They may only be sold outside the United States in reliance on Regulation S, or, if available, pursuant to another exemption from, or in another transaction not subject to, the registration requirements of the Securities Act and, in each case, in accordance with applicable state securities laws. In addition, subject to the conditions set forth in the Trust Deed, a Bond may be transferred only if the principal amount of Bonds transferred and, where not all of the Bonds held by a Bondholder are being transferred, the principal amount of the balance of Bonds not transferred is at least CNY 10,000. For a further discussion of the transfer restrictions applicable to the Bonds, see "*Terms and Conditions of the Bonds*" and "*Subscription and Sale*."

There is no existing trading market for the Bonds and, therefore, the Bonds offer limited liquidity.

The Bonds constitute a new issue of securities which may not be widely distributed and for which there is currently no existing market.

No assurance can be given as to the liquidity of, or the development and continuation of an active trading market for, the Bonds. If an active trading market for the Bonds does not develop or is not maintained, the market price and liquidity of the Bonds may be adversely affected. If such a market were to develop, the Bonds could trade at prices that may be higher or lower than the price at which the Bonds are issued depending on many factors, including:

- prevailing interest rates;
- the Group's results of operations and financial condition;
- the market conditions for similar securities; and
- the financial condition and stability of financial and other sectors.

In addition, there may be a limited number of buyers when investors decide to sell their Bonds. This may affect the prices, if any, offered for Bonds or investors' ability to sell their Bonds when desired or at all.

The liquidity and price of the Bonds following the offering may be volatile.

The price and trading volume of the Bonds may be highly volatile. Factors such as variations in the Group's turnover, earnings and cash flows, proposals for new investments, strategic alliances and/or acquisitions, changes in interest rates, fluctuations in price for comparable companies, changes in government regulations and changes in general economic conditions nationally or internationally could cause the price of the Bonds to change. Any such developments may result in large and sudden changes in the trading volume and price of the Bonds. There can be no assurance that these developments will not occur in the future.

Bondholders are bound by decisions of defined majorities in respect of any modification and waivers.

The Trust Deed contains provisions for calling meetings of Bondholders to consider matters affecting their interests generally. These provisions permit defined majorities to bind all Bondholders including Bondholders who did not attend and vote at the relevant meeting and Bondholders who voted in a manner contrary to the majority. Furthermore, there is a risk that the decision of the majority of Bondholders may be adverse to the interests of the individual Bondholders.

Also, Condition 15 (*Meetings of Bondholders—Modification and Waiver*) provides that the Trustee may, with the consent of CGIF but without the consent of Bondholders, agree (but shall not be obliged to agree (i) to any modification of the Terms and Conditions of the Bonds, the Trust Deed or the Agency Agreement (other than in respect of a Reserved Matter (as defined in "*Terms and Conditions of the Bonds*")) if such modification will not be materially prejudicial to the interests of Bondholders; and (ii) to any modification of the Bonds, the Terms and Conditions of the Bonds, the Trust Deed or the Agency Agreement which is of a formal, minor or technical nature or is to correct a manifest error or which is necessary to comply with mandatory provisions of law.

In addition, the Trustee may, with the consent of CGIF but without the consent of the Bondholders, authorise or waive any proposed breach or breach of the Bonds, the Terms and Conditions of the Bonds, the Trust Deed or the Agency Agreement (other than a proposed breach or breach relating to the subject of a Reserved Matter) if the interests of the Bondholders will not be materially prejudiced thereby, **provided that** the Trustee will not do so in contravention of an express direction given by an Extraordinary Resolution (as defined in "*Terms and Conditions of the Bonds*") or a request made pursuant to Condition 11 (*Events of Default*) of the Terms and Conditions of the Bonds.

The Trustee's ability to accelerate the Bonds is limited pursuant to the terms of the Trust Deed.

Under the terms of the Trust Deed, the Trustee has agreed with CGIF that it shall not take steps to declare any Bond to be or become immediately due and payable except in limited circumstances.

Unless the prior written consent of CGIF is obtained, these circumstances are strictly limited to the failure by CGIF to make payment of a Guaranteed Amount in accordance with the CGIF Guarantee such that a Non-Payment Event has occurred and is continuing (a "**Guaranteed Party Acceleration**").

In particular, potential investors should be aware that the Trustee is not permitted by the Terms and Conditions of the Bonds, the Trust Deed or the CGIF Guarantee to take steps to declare any Bond to be or become immediately due and payable if an Event of Default arising in relation to Conditions 11(a)(ii) (*Events of Default—Breach of other obligations*) to 11(a)(xi) (*Events of Default—Guarantee not in force*) of the Terms and Conditions of the Bonds has occurred and is continuing without the prior written consent of CGIF.

The Trustee may request that the Bondholders provide an indemnity and/or security and/or prefunding to its satisfaction.

In certain circumstances, including, without limitation, the giving of a Guaranteed Party Acceleration Notice to the Guarantor pursuant to clause 3 (*Acceleration*) of the Trust Deed and taking enforcement steps pursuant to Condition 16 (*Enforcement*) of the Terms and Conditions of the Bonds, the Trustee may (at its sole discretion) request the Bondholders to provide an indemnity and/or security, and/or prefunding to its satisfaction before it takes actions on behalf of Bondholders. The Trustee shall not be obliged to take any such actions if not indemnified and/or secured, and/or prefunded to its satisfaction. Negotiating and agreeing to any indemnity and/or security, and/or prefunding can be a lengthy process and may impact on when such actions can be taken. The Trustee may not be able to take actions notwithstanding the provision of an indemnity or security or prefunding to it, in breach of the terms of the Trust Deed constituting the Bonds and in circumstances where there is uncertainty or dispute as to the applicable laws or regulations and, to the extent permitted by the agreements and the applicable law, it will be for the Bondholders to take such actions directly.

Credit ratings may not reflect all risks and the ratings assigned to the Bonds may be lowered or withdrawn in the future.

Credit ratings may not reflect all risks and any downgrade in ratings may affect the market price of the Bonds.

The Bonds are expected to be rated AA by S&P. The ratings address the Issuer's and the Guarantor's ability to perform their obligations under the Terms and Conditions of the Bonds and credit risks in determining the likelihood that payments will be made when due under the Bonds. A rating is not a recommendation to buy, sell or hold the Bonds and may be subject to revision, suspension or withdrawal at any time. Further, the ratings may not reflect the potential impact of all risks that may affect the value of the Bonds including those relating to the structure of the Bonds or the CGIF Guarantee, market conditions and the factors discussed in this section. There is no assurance that a rating will remain for any given period of time or that a rating will not be lowered or withdrawn entirely by the relevant rating agency if in its judgement circumstances in the future so warrant. Neither the Issuer nor the Guarantor has any obligation to inform holders of the Bonds of any such revision, downgrade or withdrawal. A suspension, downgrade or withdrawal at any time of the rating assigned to the Bonds may adversely affect the market price of the Bonds.

The Bonds will initially be represented by a Global Certificate and holders of a beneficial interest in the Global Certificate must rely on the procedures of the Clearing System(s).

The Bonds will initially be represented by a Global Certificate and will be held in CMU ("**Clearing System**"), which is a clearing system run by the Hong Kong Monetary Authority. The Global Certificate will be deposited for safekeeping with a sub-custodian of CMU. Except in the circumstances described in the Global Certificate, investors will not be entitled to receive individual certificates. The Clearing System will maintain records of the beneficial interests in the relevant Global Certificate.

While the Bonds are represented by the Global Certificate, investors will be able to trade their beneficial interests only through the Clearing System. The Issuer will discharge its payment obligations under the Bonds by making payments to the Clearing System for distribution to their account holders.

A holder of a beneficial interest in the Global Certificate must rely on the procedures of the Clearing System to receive payments under the relevant series of the Bonds. The Issuer has no responsibility or liability for the records relating to, or payments made in respect of, beneficial interests in the Global Certificate.

Holders of beneficial interests in the Global Certificate will not have a direct right to vote in respect of the Bonds. Instead, such holders will be permitted to act only to the extent that they are enabled by the Clearing System to appoint appropriate proxies.

The Issuer may be unable to redeem the Bonds.

On certain dates, including at maturity of the Bonds, if the Issuer has or will become obliged to pay certain taxes or in the event of a CGIF Acceleration (as defined herein), the Issuer may, and at maturity, will be required to redeem all of the Bonds. If such an event were to occur, the Issuer may not have sufficient cash in hand and may not be able to arrange financing to redeem the Bonds in time, or on acceptable terms, or at all. The Issuer's ability to redeem the Bonds in such event may also depend on the receipt of the relevant Guaranteed Amounts from the Guarantor. Failure by the Issuer to pay any amount of principal in respect of the Bonds on the scheduled redemption at maturity or on an early redemption, would constitute an event of default under the Bonds.

Enforceability of Arbitral Awards.

The Trust Deed, the Agency Agreement, the Bonds and the CGIF Guarantee are governed by English law and the parties have agreed that disputes arising thereunder are subject to arbitration in Singapore under the SIAC Arbitration Rules.

CGIF is established by the Association of Southeast Asian Nations members, China, Japan (Japan Bank for International Cooperation ("**JBIC**")), Korea (the "**CGIF Member Countries**") and the Asian Development Bank as a key component of the Asian Bond Markets Initiative. A substantial part of CGIF's assets is located outside of Singapore. Therefore, even though the Trustee may obtain an arbitral award in Singapore against CGIF in arbitration proceedings (an "**Award**") and the Award may be enforced in Singapore in the same manner as a judgement or order to the same effect, CGIF may not have sufficient assets in Singapore to satisfy the Award.

In this regard, pursuant to Article 2.2 of CGIF's Articles of Agreement, CGIF may only undertake its functions within the CGIF Member Countries and all CGIF Member Countries are parties to the New York Convention. Accordingly, any arbitration award obtained in a state which is party to the New York Convention should be recognised and enforceable in all CGIF Member Countries, provided the conditions for enforcement set out in the New York Convention are met and certain conditions and requirements under the applicable laws of the relevant jurisdictions relating to such enforcement are complied with.

Enforcing Bondholders' rights under the Bonds or the CGIF Guarantee across multiple jurisdictions may be difficult.

The Bonds, which are guaranteed by the CGIF, a trust fund established under public international law, will be issued by the Issuer, which is incorporated under Korean law. The CGIF Guarantee, the Bonds and the Trust Deed are governed by English law. In the event of a bankruptcy, insolvency or similar event, different proceedings could be initiated in the United Kingdom and Singapore. Such multi-jurisdictional proceedings are likely to be complex and costly for creditors and otherwise may result in greater uncertainty and delay regarding the enforcement of the rights of Bondholders.

Bondholders' rights under the Bonds and the CGIF Guarantee will be subject to the insolvency and administrative laws of several jurisdictions and there can be no assurance that Bondholders will be able to effectively enforce their rights in such complex bankruptcy, insolvency or similar proceedings.

Furthermore, the bankruptcy, insolvency, administrative and other laws of Korea and England may be materially different from, or be in conflict with, each other and those with which Bondholders may be familiar, including in the areas of rights of creditors, priority of governmental and other creditors, ability to obtain post-petition interest and duration of the proceedings. The application of these laws, or any conflict among them, could call into question whether the laws of any particular jurisdiction should apply, adversely affect Bondholders, and their ability to enforce their rights under the Bonds and the CGIF Guarantee in the relevant jurisdiction or limit any amounts that Bondholders may receive.

There may be interest rate risks on an investment in the Bonds.

Bondholders may suffer unforeseen losses due to fluctuations in interest rates. Generally, a rise in interest rates may cause a fall in the price of the Bonds, resulting in a capital loss for the Bondholders. However, the Bondholders may reinvest the interest payments at higher prevailing interest rates. Conversely, when interest rates fall, the price of the Bonds may rise. The Bondholders may enjoy a capital gain but interest payments received may be reinvested at lower prevailing interest rates.

Changes in market interest rates may adversely affect the value of the Bonds.

An investment in the Bonds involves the risk that subsequent changes in market interest rates may adversely affect the value of the Bonds.

Performance of contractual obligations.

The Issuer's ability to make payments in respect of the Bonds may depend upon other parties' due performance to the transaction documents of the obligations thereunder. This includes the performance by the Trustee, the

CMU Lodging and Paying Agent and/or the Registrar of their respective obligations. Whilst the non-performance of any relevant parties will not relieve the Issuer of its obligations to make payments in respect of the Bonds, the Issuer may not, in such circumstances, be able to fulfil its obligations to the Bondholders.

Renminbi is not freely convertible and there are significant restrictions on the remittance of Renminbi into and out of the PRC which may adversely affect the liquidity of Bonds.

Renminbi is not freely convertible at present. The PRC government continues to regulate conversions between Renminbi and foreign currencies, including the Hong Kong dollar.

In recent years, the PRC government has significantly reduced control over foreign currencies, particularly over trade transactions involving routine foreign exchange transactions, which are known as current account items. However, remittance of Renminbi into and out of the PRC for the settlement of capital account items, such as capital contributions, debt financing and securities investment, is generally only permitted upon obtaining specific approvals from, or completing specific registrations or filings with, the relevant authorities on a case-by-case basis and is subject to a strict monitoring system. Regulations in the PRC on the remittance of Renminbi into and out of the PRC for settlement of capital account items are being developed.

Although Renminbi was added to the Special Drawing Rights basket created by the International Monetary Fund in 2016 and policies further improving accessibility to Renminbi to settle cross-border transactions in foreign currencies were implemented by the People's Bank of China (中国人民银行) ("**PBOC**") in 2018, there is no assurance that the PRC government will continue to gradually liberalise control over cross-border remittance of Renminbi in the future, that the schemes for Renminbi cross-border utilisation will not be discontinued, or that new regulations in the PRC which have the effect of restricting or eliminating the remittance of Renminbi into or out of the PRC will not be promulgated in the future. Despite recent efforts to internationalise the Renminbi, including the Renminbi internationalisation pilot programme, there can be no assurance that the PRC government will not impose interim or long-term restrictions on the cross-border remittance of Renminbi. In the event that funds cannot be repatriated out of the PRC in Renminbi, the overall availability of Renminbi outside the PRC and the ability of the Bank to source Renminbi to finance its obligations under Bonds denominated in Renminbi may be affected.

There is only limited availability of Renminbi outside the PRC, which may affect the liquidity of the Bonds and the Issuer's ability to source Renminbi outside the PRC to service Bonds.

As a result of the restrictions by the PRC government on cross-border Renminbi fund flows, the availability of Renminbi outside the PRC is limited. While the PBOC has entered into agreements (the "**Settlement Arrangements**") on the clearing of Renminbi business with financial institutions (the "**Renminbi Clearing Banks**") in a number of financial centres and cities, including but not limited to Hong Kong, it has established the Cross-Border Inter-Bank Payments System ("**CIPS**") to facilitate cross-border Renminbi settlement and is further in the process of establishing Renminbi clearing and settlement mechanisms in several other jurisdictions, the current size of Renminbi denominated financial assets outside the PRC is limited.

There are restrictions imposed by PBOC on Renminbi business participating banks in respect of cross-border Renminbi settlement, such as those relating to direct transactions with PRC enterprises. Furthermore, Renminbi business participating banks do not have direct Renminbi liquidity support from PBOC, although PBOC has gradually allowed participating banks to access the PRC's onshore inter-bank market for the purchase and sale of Renminbi. The Renminbi Clearing Banks only have limited access to onshore liquidity support from PBOC for the purpose of squaring open positions of participating banks for limited types of transactions and are not obliged to square for participating banks any open positions resulting from other foreign exchange transactions or conversion services. In cases where the participating banks cannot source sufficient Renminbi through the above channels, they will need to source Renminbi from outside the PRC to square such open positions.

Although it is expected that the offshore Renminbi market will continue to grow in depth and size, its growth is subject to many constraints as a result of PRC laws and regulations on foreign exchange. There is no assurance that new PRC regulations will not be promulgated or the Settlement Arrangements will not be terminated or amended in the future which will have the effect of restricting availability of Renminbi outside the PRC. The limited availability of Renminbi outside the PRC may affect the liquidity of the Bonds. To the extent the Bank is required to source Renminbi in the offshore market to service its Bonds, there is no assurance that the Bank will be able to source such Renminbi on satisfactory terms, if at all.

Investment in the Bonds is subject to exchange rate risks.

The value of Renminbi against other foreign currencies fluctuates from time to time and is affected by changes in the PRC and international political and economic conditions as well as many other factors. Recently, the PBOC implemented changes to the way it calculates the Renminbi's daily mid-point against the U.S. dollar to take into account market-maker quotes before announcing such daily mid-point. This change, and others that may be implemented, may increase the volatility in the value of the Renminbi against foreign currencies. All payments of interest and principal will be made in Renminbi with respect to Bonds unless otherwise specified. As a result, the value of these Renminbi payments may vary with the changes in the prevailing exchange rates in the marketplace. If the value of Renminbi depreciates against another foreign currency, the value of the investment made by a holder of the Bonds in that foreign currency will decline.

Payments with respect to the Bonds may be made only in the manner designated in the Bonds.

All payments to investors in respect of the Bonds will be made solely (i) for so long as the Bonds are represented by the Global Certificate deposited with a sub-custodian for CMU or any alternative clearing system, by transfer to a Renminbi bank account maintained in Hong Kong and (ii) for so long as the Bonds are in definitive form, by transfer to a Renminbi bank account maintained in Hong Kong in accordance with prevailing rules and regulations. The Issuer, failing whom the Guarantor, cannot be required to make payment by any other means (including in any other currency or by transfer to a bank account in the PRC).

The Bonds may not be a suitable investment for all investors seeking exposure to green assets.

The Bonds are being issued as Green Bonds in accordance with the Framework, which was prepared in accordance with the four core components shared by the International Capital Markets Association's 2018 Green Bond Principles (the "**2018 ICMA GB Principles**") and the Loan Market Association's 2018 Green Loan Principles (the "**2018 LMA GL Principles**"). Sustainalytics issued a second party opinion in March 2021 affirming the alignment of the Framework with the 2018 ICMA GB Principles and the 2018 LMA GL Principles (the "**Second Party Opinion**"). See "*Green Financing Framework*."

There is currently no market consensus on what precise attributes are required for a particular project to be defined as "green," and therefore no assurance can be provided to potential investors that the Green Eligible Projects (as defined in the Framework) will continue to meet the relevant eligibility criteria. Although applicable green projects are expected to be selected in accordance with the categories recognised by the 2018 ICMA GB Principles and the 2018 LMA GL Principles and are expected to be developed in accordance with applicable legislation and standards, there can be no guarantee that adverse social and/or environmental developments will not occur during the design, construction, commissioning and/or operation of any such green projects. In addition, where any negative impacts are insufficiently mitigated, green projects may become controversial, and/or may be criticised by activist groups or other stakeholders.

The Second Party Opinion may not reflect the potential impact of all risks related to the structure, market, additional risk factors discussed above and other factors that may affect the value of the Bonds. The Second Party Opinion is not a recommendation to buy, sell or hold any Bonds and is only current as of the date that the Second Party Opinion was initially issued, and may be updated, suspended or withdrawn at any time. Currently, the providers of second party opinions and certifications are not subject to any regulatory regime or oversight. In addition, although the Issuer has agreed to certain reporting and use of proceeds obligations in connection with certain criteria, the Issuer's failure to comply with such obligations does not constitute a breach or an event of default under the Bonds. A withdrawal of the Second Party Opinion or any failure by the Issuer to use the proceeds of the Bonds on projects in Green Eligible Categories, or to meet or continue to meet the investment requirements of certain environmentally-focused investors with respect to such Bonds, may have an adverse effect on the value of the Bonds and/or may have adverse consequences for certain investors with portfolio mandates to invest in green assets.

No assurance can be provided with respect to the suitability or reliability of the Second Party Opinion or that the Bonds will fulfil the criteria to qualify as Green Bonds. The Sole Lead Manager has not undertaken, nor are responsible for, any assessment of the eligibility of projects in Green Eligible Categories or the monitoring of the use of proceeds from the offering of the Bonds. Each potential purchaser of the Bonds should determine for itself the relevance of the information contained in this Offering Circular regarding the use of proceeds and its purchase of the Bonds should be based upon such investigation as it deems necessary.

Risks Relating to the Guarantor and the CGIF Guarantee

Other than principal amounts, scheduled interest and certain other amounts, not all amounts due in respect of the Bonds are guaranteed by CGIF.

Pursuant to the terms of the CGIF Guarantee, CGIF shall irrevocably and unconditionally guarantee to the Trustee, on behalf of the Bondholders, the full and punctual payment of each Guaranteed Amount. For the purposes of the CGIF Guarantee, "**Guaranteed Amount**" means:

- any Principal Amount and any Scheduled Interest which is overdue and unpaid (whether in whole or in part) by the Issuer under the Conditions and the Trust Deed;
- any Additional Accrued Interest; and
- any Trustee Expenses (in each case as defined in the CGIF Guarantee).

A Guaranteed Amount does not include any increased costs, tax-related indemnity (but for the avoidance of doubt includes any additional amounts required to be paid to the Bondholders due to a tax deduction and the operation of Condition 9 (*Taxation*), provided that the Guaranteed Amount will only include the original amount which would have been due from the Issuer if no tax deduction were required), default interest, fees or any other amounts save as provided above.

The obligations of the Guarantor under the CGIF Guarantee are secondary obligations only.

The CGIF Guarantee is governed by English law. Under English law generally, the liability of a guarantor (in this case, the Guarantor) is ancillary, or secondary, to that of the principal debtor (in this case, the Issuer), in the sense that the principal debtor remains primarily liable to creditors (in this case, the Trustee, on behalf of the Bondholders) and the guarantor's liability depends upon the continued existence and validity of the principal debtor's liability. The Guarantor's liability under the CGIF Guarantee is therefore co-extensive with that of the Issuer. Consequently, and in the absence of agreement to the contrary, a guarantor's liability will normally be extinguished if the principal debtor's obligation is void or unenforceable, has not yet arisen or has been released, or if a defence or right of set-off is available to the principal debtor.

Accordingly, English law guarantees in debt capital markets transactions customarily include provisions:

- aimed at protecting creditors by preserving a guarantor's liability in circumstances where it would otherwise be discharged, for example, in the event of any unenforceability, illegality or, invalidity of any obligation of any person under any of the bond documents (such as a trust deed, agency agreement or guarantee) or any other document or security ("**Protective Provisions**"); and
- to the effect that the guarantor shall be liable as if it were the principal debtor and not merely a surety, and an indemnity, to provide that the guarantor will be liable as a primary obligor in the event that the original guaranteed obligations were to be set aside for any reason ("**Co-Principal Debtor Provisions**").

Potential investors should therefore be aware that while the CGIF Guarantee does provide for certain customary Protective Provisions whereby the Guarantor's liability is preserved (and shall remain in force), notwithstanding any act, omission, event or thing of any kind which, but for the Protective Provisions, would reduce, release or prejudice any of the Guarantor's obligations, neither the CGIF Guarantee nor the Trust Deed provides for any Principal Debtor Provisions. See "*Appendix A: Form of CGIF Guarantee.*"

Accordingly, in the event that the Issuer's obligations under the Bonds, the Trust Deed and/or the Agency Agreement (i.e., the primary obligations which are the subject of the CGIF Guarantee) cease to exist in circumstances that are not contemplated by the Protective Provisions, the Trustee may not be able to make a claim under the CGIF Guarantee for any Guaranteed Amount in the event of a failure by the Issuer to meet its obligations under the Bonds (including, without limitation, a Missed Payment Event).

The obligations of the Guarantor under the CGIF Guarantee are secondary obligations only, CGIF's right to accelerate following a CGIF Acceleration.

Prospective investors should be aware that the Bonds may be redeemed in certain circumstances at the election of CGIF. At any time following the occurrence of a CGIF Acceleration, CGIF may at its discretion, on giving not less than seven nor more than 15 days' notice to the Issuer and the Trustee, require the Issuer to redeem the

Bonds in whole, but not in part, at their principal amount, together with interest accrued but unpaid to the date fixed for redemption following which the Issuer shall immediately, or if the Issuer fails to do so CGIF may, give notice to the Bondholders, the Trustee and the CMU Lodging and Paying Agent (which notice shall be irrevocable).

A "**CGIF Acceleration**" occurs if:

- an Issuer Event of Default (as defined in the Conditions) has occurred; or
- a Missed Payment Event has occurred and is continuing and irrespective of whether or not CGIF has already paid any Guaranteed Amounts in respect of such Missed Payment Event; or
- any term or provision of the Conditions, the Trust Deed or the Agency Agreement has been amended, modified, varied, novated, supplemented, superseded, waived or terminated without the prior written consent of CGIF as required pursuant to the terms of the CGIF Guarantee, Trust Deed or the Agency Agreement, as the case may be; and
- CGIF has delivered a CGIF Acceleration Notice to the Trustee in accordance with the Trust Deed.

The CGIF Acceleration Notice will, among other things, contain a written confirmation that CGIF will pay all unpaid Guaranteed Amounts.

Obligations of CGIF do not constitute an obligation of the Asian Development Bank.

The obligations of CGIF under the CGIF Guarantee do not constitute an obligation of the Asian Development Bank or any other contributors to CGIF. Bondholders' recourse to CGIF under the CGIF Guarantee and any Bond Document (as defined in the CGIF Guarantee) is therefore limited solely to the assets of CGIF, which are all property and assets of CGIF held in trust in accordance with the Articles of Agreement of CGIF and available from time to time to meet the liabilities of CGIF ("**CGIF Assets**") and Bondholders have no recourse to any assets of the Asian Development Bank or any other contributors to CGIF. For the avoidance of doubt, CGIF Assets do not include any assets of the Asian Development Bank or any other contributors to CGIF. Notwithstanding any other provisions under the CGIF Guarantee or any Bond Document (as defined in the Trust Deed), neither the Asian Development Bank nor any other contributors to CGIF or the officers, employees or agents of any contributor to CGIF shall be subject to any personal liability whatsoever to any third party including the Trustee in connection with the operation of CGIF or under the CGIF Guarantee or any Bond Document (as defined in the Trust Deed). Neither Bondholders nor the Trustee may bring any actions against the Asian Development Bank as the trustee of CGIF or as contributor to CGIF or against any other contributors to CGIF or any of their respective officers, employees or agents in connection with the CGIF Guarantee.

TERMS AND CONDITIONS OF THE BONDS

*The following is the text of the Terms and Conditions of the Bonds (the "**Conditions**") which (subject to modification and except for the paragraphs in italics) will be endorsed on the Certificates issued in respect of the Bonds:*

The CNY1,000,000,000 in aggregate principal amount of 3.00 per cent. Guaranteed Green Bonds due 2024 (the "**Bonds**") of Hanwha Solutions Corporation (the "**Issuer**") are constituted by, are subject to, and have the benefit of, a trust deed dated 19 April 2021 (as amended, restated, replaced or supplemented from time to time, the "**Trust Deed**") among the Issuer, Credit Guarantee and Investment Facility, a trust fund of the Asian Development Bank, as guarantor ("**CGIF**" or the "**Guarantor**") and Citicorp International Limited as trustee (the "**Trustee**," which expression includes all persons for the time being trustee or trustees appointed under the Trust Deed) and are the subject of a guarantee agreement dated 19 April 2021 (as amended, restated, replaced or supplemented from time to time, the "**CGIF Guarantee**") between the Guarantor and the Trustee, and an agency agreement dated 19 April 2021 (as amended, restated, replaced or supplemented from time to time, the "**Agency Agreement**") among the Issuer, the Guarantor, Citicorp International Limited as registrar (the "**Registrar**," which expression includes any successor registrar appointed from time to time in connection with the Bonds), Citicorp International Limited as CMU lodging and paying agent (the "**CMU Lodging and Paying Agent**," which expression includes any successor CMU lodging and paying agent appointed from time to time in connection with the Bonds) and as the transfer agent (the "**Transfer Agent**," which expression includes any successor or additional transfer agent(s) appointed from time to time in connection with the Bonds) and the Trustee. References herein to the "**Agents**" (as defined below) are to the Registrar, the Transfer Agent and the CMU Lodging and Paying Agent and any reference to an "**Agent**" is to any one of them.

Certain provisions of these terms and conditions (the "**Conditions**") are summaries of the Trust Deed, the CGIF Guarantee and the Agency Agreement and subject to their detailed provisions. The Bondholders (as defined below) are bound by, and are deemed to have notice of, all the provisions of the Trust Deed, the CGIF Guarantee and the Agency Agreement applicable to them. Copies of the Trust Deed, the CGIF Guarantee and the Agency Agreement are available for inspection by Bondholders during normal business hours upon prior written request and satisfactory proof of holding at the Specified Offices of the CMU Lodging and Paying Agent, the initial Specified Office of which are set out below.

1. FORM, DENOMINATION, STATUS AND GUARANTEE

(a) **Form and denomination**: The Bonds are in registered form in the denominations of CNY1,000,000 and integral multiples of CNY10,000 in excess thereof (each, an "**Authorised Denomination**").

(b) **Status of the Bonds**: The Bonds constitute direct, unconditional, unsubordinated and (subject to Condition 4 (*Negative Pledge*)) unsecured obligations of the Issuer and shall at all times rank *pari passu* and without any preference among themselves. The payment obligations of the Issuer under the Bonds shall, save for such exceptions as may be provided by applicable legislation, at all times rank at least equally with all other unsecured and unsubordinated indebtedness of the Issuer, present and future.

(c) **Guarantee of the Bonds**: The payment obligations of the Issuer under the Bonds and the Trust Deed are unconditionally and irrevocably guaranteed by the Guarantor to the extent of, and in accordance with and subject to the terms of, the CGIF Guarantee. Such obligations of the Guarantor under the CGIF Guarantee are direct, unconditional and general obligations of the Guarantor and rank *pari passu* with the claims of all its other unsecured and unsubordinated creditors, except for obligations mandatorily preferred by law.

The CGIF Guarantee does not cover any relevant amounts of principal or accrued but unpaid interest that become payable by the Issuer on the exercise by it of an early redemption, including as a result of the Issuer's redemption for tax reasons (Condition 7(b) (Redemption and Purchase—Redemption for tax reasons)). In order to mitigate any risk of the Issuer not paying the relevant amount of principal and/or accrued but unpaid interest arising out of or in connection with the Issuer exercising any of its rights of early redemption, the Issuer, in exercising its rights for redemption for tax reasons, is required to, not less than one Business Day prior to the publication of any notice of redemption in relation to redemption for tax reasons under Condition 7(b) (Redemption and Purchase—Redemption for tax reasons), transfer to a Renminbi account maintained by the CMU Lodging and Paying Agent for the benefit of the Bondholders an amount in Renminbi in immediately available cleared funds *sufficient to redeem the Bonds at their principal amount together with any interest accrued but unpaid to the relevant date fixed for redemption.*

(d) **Limitation on the Guarantor's Liabilities**: The recourse of the Bondholders against CGIF in respect of the CGIF Guarantee is limited solely to the CGIF Assets. By its holding of a Bond each Bondholder will be deemed to acknowledge and accept that it, and the Trustee on its behalf, only has recourse to the CGIF Assets and neither the Trustee nor any Bondholder has recourse to any assets of the Asian Development Bank or any other contributors to the Guarantor. Any obligation under the CGIF Guarantee shall not constitute an obligation of the Asian Development Bank or any other contributors to the Guarantor.

By its holding of a Bond, each Bondholder will be deemed to further acknowledge and accept that neither the Asian Development Bank nor any other contributors to the Guarantor or the officers, employees or agents of the Asian Development Bank or any contributor to the Guarantor shall be subject to any personal liability whatsoever to any third party, including each Bondholder, in connection with the operation of the Guarantor or under the CGIF Guarantee and they may not bring any action against the Asian Development Bank, as the trustee of the Guarantor or as contributor to the Guarantor, or against any other contributors to the Guarantor or any of their respective officers, employees or agents.

2. DEFINITIONS

In these Conditions:

"**Acceleration Step**" has the meaning given to it in the Trust Deed;

"**Articles of Agreement of CGIF**" means the articles of agreement of CGIF originally dated 11 May 2010, as amended on 27 November 2013, 31 May 2016, 23 May 2017, 31 May 2018 and 16 May 2019 (as may be further amended or supplemented from time to time);

"**Bondholder**" means the person in whose name such Bond is for the time being registered in the Register (or, in the case of a joint holding, the first named thereof);

"**Business Day**" means any day (other than a Sunday or a Saturday) on which commercial banks are open for general business (including dealings in foreign currencies) in Manila, Seoul and Hong Kong;

"**CGIF Assets**" means all property and assets of CGIF held in trust in accordance with the Articles of Agreement of CGIF and available from time to time to meet the liabilities of CGIF. For the avoidance of doubt, a CGIF Asset does not include any assets of the Asian Development Bank or any other contributors to CGIF;

"**CMU Lodging and Paying Agent(s)**" means the CMU Lodging and Paying Agent and any other paying agent appointed pursuant to the Agency Agreement;

"**Default**" means an event or circumstance which would, with the giving of notice, lapse of time, the issuing of a certificate and/or fulfilment of any other requirement provided for in Condition 11 (*Events of Default*) become an Event of Default;

"**Extraordinary Resolution**" has the meaning given to it in Schedule 3 of the Trust Deed;

"**Guarantee**" means, in relation to any indebtedness of the Issuer, any obligation of another Person to pay such indebtedness including (without limitation):

(a) any obligation to purchase such indebtedness;

(b) any obligation to lend money, to purchase or subscribe shares or other securities or to purchase assets or services in order to provide funds for the payment of such indebtedness;

(c) any indemnity against the consequences of a default in the payment of such indebtedness; and

(d) any other agreement to be responsible for such indebtedness;

"**Guaranteed Amount**" has the meaning given to such term in Clause 2.1(a) of the CGIF Guarantee;

"**Guaranteed Party Acceleration Notice**" means a written notice delivered by the Trustee to CGIF pursuant to, and substantially in the form set out in the Trust Deed;

"**Guarantor Default Interest Amount**" means certain default interest payable by the Guarantor in the amount and at the rate as calculated in accordance with the CGIF Guarantee;

"**Indebtedness**" means any indebtedness (whether being principal, premium, interest or other amounts) for or in respect of any notes, bonds, debentures, debenture stock, loan stock or other securities or any borrowed money or any liability under or in respect of any acceptance or acceptance credit;

"**Interest Period**" means each period beginning on (and including) the Issue Date or any Interest Payment Date and ending on (and excluding) the next Interest Payment Date;

"**International Investment Securities**" means bonds, debentures, notes or investment securities of the Issuer which (1) either are by their terms payable, or confer a right to receive payment, in any currency other than Korean Won or are denominated in Korean Won and more than 50 per cent. (50%) of the aggregate principal amount thereof is initially distributed outside Korea by or with the authorisation of the Issuer; and (2) are, for the time being, quoted, listed, or ordinarily dealt in or traded on any stock exchange or over-the-counter or other securities market outside Korea;

"**Issuer Event of Default**" means the occurrence of any of the events described in Condition 11 (*Events of Default*) of these Conditions;

"**Maturity Date**" means 19 April 2024;

"**Missed Payment Event**" means the non-payment (not taking into account any grace period) of any Guaranteed Amount by the Issuer in accordance with these Conditions and the Trust Deed;

"**Non-Payment Event**" means the occurrence of an Event of Default thirty (30) calendar days after the occurrence of a Missed Payment Event in accordance with Condition 11(a)(i) (*Non-payment*) of these Conditions;

"**Officer's Certificate**" means a certificate signed by two directors or one authorised officer of the Issuer;

"**Person**" means any individual, company, corporation, firm, partnership, joint venture, association, organisation, state or agency of a state or other entity, whether or not having separate legal personality;

"**Relevant Period**" means each period of three months ending on the last day of the Issuer's first quarter, second quarter and third quarter financial year (being 31 March, 30 June and 30 September of that financial year, respectively);

"**Relevant Taxing Jurisdiction**" means the Republic of Korea, as applicable, or, in each such case, any political subdivision or any authority thereof or therein having power to tax;

"**Security Interest**" means any mortgage, charge, pledge, lien or other security interest including, without limitation, anything analogous to any of the foregoing under the laws of any jurisdiction;

"**Specified Office**" means 20th Floor, Citi Tower, One Bay East, 83 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong; and

"**Subsidiary**" means, in relation to any Person (the "**first Person**") at any particular time, any other Person (the "**second Person**") whose financial statements are, in accordance with applicable law and generally accepted accounting principles, consolidated with those of the first Person.

3. REGISTER, TITLE AND TRANSFERS

(a) **Register**: The Registrar will maintain a register outside the United Kingdom (the "**Register**") in respect of the Bonds in accordance with the provisions of the Agency Agreement. A certificate (each, a "**Certificate**") will be issued to each Bondholder in respect of its registered holding. Each Certificate will be numbered serially with an identifying number which will be recorded in the Register.

*Upon issue, the Bonds will be evidenced by a global certificate in the aggregate principal amount of the Bonds (the "**Global Certificate**") substantially in the form scheduled to the Trust Deed and registered in the name of, and lodged with a sub-custodian for, the Hong Kong Monetary Authority as operator (the "**Operator**") of the Central Moneymarkets Unit Service (the "**CMU Service**"). Interests in the Global Certificate shall be exchangeable for individual Certificates only in the circumstances set out therein.*

*The Bonds will be traded on the Singapore Exchange Securities Trading Limited ("**SGX-ST**") in a minimum board lot size of S$200,000 (or its equivalent in foreign currencies).*

(b) **Title**: Each Bondholder shall (except as otherwise required by law) be treated as the absolute owner of such Bond for all purposes (whether or not it is overdue and regardless of any notice of ownership, trust or any other interest therein, any writing on the Certificate relating thereto (other than the endorsed form of transfer) or any notice of any previous loss or theft of such Certificate) and no person shall be liable for so treating such Bondholder. No person shall have any right to enforce any term or condition of the Bonds or the Trust Deed under the Contracts (Rights of Third Parties) Act 1999.

(c) **Transfers**: Subject to paragraphs (f) (*Closed periods*) and (g) (*Regulations concerning transfers and registration*) below, a Bond may be transferred upon surrender of the relevant Certificate, with the endorsed form of transfer duly completed and executed, at the Specified Office of the Registrar or the Transfer Agent, together with such evidence as the Registrar or (as the case may be) the Transfer Agent may require to prove the title of the transferor and the authority of the individuals who have executed the form of transfer; **provided, however, that** a Bond may not be transferred unless the principal amount of Bonds transferred and (where not all of the Bonds held by a Bondholder are being transferred) the principal amount of the balance of Bonds not transferred are Authorised Denominations. Where not all the Bonds represented by the surrendered Certificate are the subject of the transfer, a new Certificate in respect of the balance of the Bonds will be issued to the transferor.

Transfers of interests in the Bonds evidenced by the Global Certificates will be effected in accordance with the rules and procedures of the relevant clearing systems.

(d) **Registration and delivery of Certificates**: Within five (5) Business Days of the surrender of a Certificate in accordance with paragraph (c) (*Transfers*) above, the Registrar will register the transfer in question and deliver a new Certificate of a like principal amount to the Bonds transferred to each relevant Bondholder at its Specified Office or (as the case may be) the Specified Office of the Transfer Agent or (at the request and risk of any such relevant Bondholder) by uninsured first class mail (airmail if overseas) to the address specified for the purpose by such relevant Bondholder. In this paragraph, "**Business Day**" means a day on which commercial banks are open for general business (including dealings in foreign currencies) in the city where the Registrar or (as the case may be) the relevant Transfer Agent has its Specified Office.

Except in the limited circumstances described herein, owners of interests in the Bonds will not be entitled to receive physical delivery of Certificates.

(e) **No charge**: The transfer of a Bond will be effected without charge by or on behalf of the Issuer, the Registrar or the Transfer Agent but (i) against such payment or indemnity as the Registrar or (as the case may be) the Transfer Agent may require in respect of any tax or other duty of whatsoever nature which may be levied or imposed in connection with such transfer, (ii) upon the Registrar or (as the case may be) the Transfer Agent being satisfied in its absolute discretion with the documents of title or identity of the person making the application, and (iii) upon the Issuer and/or the Registrar and/or the Transfer Agent being satisfied that the Regulations (as defined in the Agency Agreement) concerning the transfer of Bonds have been complied with.

(f) **Closed periods**: Bondholders may not require transfers to be registered (i) during the period of fifteen (15) days ending on the due date for any payment of principal or interest in respect of the Bonds or (ii) after any such Bond has been called for redemption.

(g) **Regulations concerning transfers and registration**: All transfers of Bonds and entries on the Register are subject to the detailed regulations concerning the transfer of Bonds scheduled to the Agency Agreement. The regulations may be changed by:

(i) the Issuer with the prior written approval of the Trustee and the Registrar; or

(ii) the Registrar with prior written approval of the Issuer and the Trustee.

A copy of the current regulations will be mailed (free of charge to the Bondholder and at the Issuer's expense) by the Registrar to any Bondholder upon satisfactory proof of holding and who requests in writing a copy of such regulations.

*For so long as any of the Bonds are represented by the Global Certificate, each person who is for the time being shown in the records of the Operator as the holder of a particular principal amount of Bonds (the "**accountholder**") (in which regard any certificate or other document issued by Operator as to the principal amount of such Bond standing to the account of any person shall be conclusive and binding for all purposes save in the case of manifest error) shall be treated by the Issuer, the Trustee, the Registrar, the Agents and the Operator as the absolute holder of such principal amount of Bonds other than with respect to the payment of principal, interest and any other amounts in respect of the Bonds, the right to which shall be vested, as against the Issuer, the Registrar, the Agents and the Operator solely in the holder of the Global Certificate in accordance with and subject to its terms. For so long as any of the Bonds are represented by the Global Certificate and the Global Certificate is held with the CMU Service, any transfer of principal amounts of Bonds shall be effected in accordance with the rules and procedures for the time being of the Operator.*

Notwithstanding the above, if the Global Certificate is held by or on behalf of the CMU Service, any payments that are made in respect of the Global Certificate shall be made to the accountholder and such payments shall discharge the obligation of the Issuer in respect of that payment. For these purposes, a notification from the CMU Service shall be conclusive evidence of the records of the CMU Service (save in the case of manifest error). Bonds which are represented by the Global Certificate will be transferable only in accordance with the rules and procedures for the time being of the Operator.

4. NEGATIVE PLEDGE

So long as any Bond remains outstanding (as defined in the Trust Deed), the Issuer shall not create or permit to subsist any Security Interest upon the whole or any part of its present or future property, assets or revenues (including uncalled share capital) to secure for the benefit of the holders of any International Investment Securities:

(a) payment of any sum due in respect of any such International Investment Securities;

(b) payment under any Guarantee or other like obligation in respect of any such International Investment Securities; or

(c) payment under any indemnity or other like obligation in respect of any such International Investment Securities,

without (a) at the same time or prior thereto securing the Bonds equally and rateably or (b) providing such other security for the Bonds as may be approved by an Extraordinary Resolution (as defined in the Trust Deed) of Bondholders.

5. PROVISION OF FINANCIAL STATEMENTS AND REPORTS

So long as any of the Bonds remain outstanding, the Issuer shall:

(a) provide to the Trustee in the English language as soon as they are available, but in any event within one-hundred and twenty (120) calendar days after the end of the fiscal year of the Issuer, copies of the Issuer's financial statements in respect of such financial year (including a statement of comprehensive income, statement of financial position and cash flow statement) audited by a member firm of an internationally recognised firm of independent accountants (the "**Issuer's Audited Financial Statements**");

(b) as soon as reasonably practicable and in any event within thirty (30) days after the Issuer becomes aware of the occurrence thereof, provide to the Trustee written notice of the occurrence of any event or condition which constitutes an Event of Default (as defined below) or Default (as defined below) and an Officer's Certificate of the Issuer setting forth the details thereof and the action the Issuer is taking or proposes to take with respect thereto; and

(c) keep proper books of account and, so far as permitted by applicable law, allow the Trustee and:

   (i) any time prior the occurrence of an Event of Default, anyone appointed by it, to whom the Issuer has no reasonable objection; and

   (ii) any time after the occurrence of an Event of Default and where such Event of Default is continuing, anyone appointed by it,

   access to its books of account at all reasonable times upon prior appointment during normal business hours.

6. INTEREST

(a) **Accrual of interest**: The Bonds bear interest from (and including) 19 April 2021 (the "**Issue Date**") at the rate of 3.00 per cent. per annum, (the "**Rate of Interest**") payable semi-annually in arrear on 19 April and 19 October, in each year, commencing on 19 October 2021 (each, an "**Interest Payment Date**"), subject as provided in Condition 8 (*Payments*).

(b) **Default interest**: Each Bond will cease to bear interest from the due date for redemption unless, upon due presentation, payment of principal is improperly withheld or refused or unless default is otherwise made in respect of payment, in which case it will continue to bear interest at such rate aforesaid per annum (both before and after an arbitral decision, judgment or other order of a court of competent jurisdiction) until whichever is the earlier of (i) the date on which all sums due in respect of such Bond up to that day are received by or on behalf of the relevant Bondholder and (ii) the day which is seven (7) days after the CMU Lodging and Paying Agent or the Trustee (as the case may be) has notified the Bondholders that it has received all sums due in respect of the Bonds up to such seventh (7^{th}) day (except to the extent that there is any subsequent default in payment).

(c) **Calculation of Interest**: Interest in respect of any Bonds shall be calculated per Calculation Amount. The amount of interest payable per Calculation Amount (the "**Interest Amount**") shall be calculated by multiplying the Rate of Interest, the Calculation Amount and the actual number of days elapsed in such Interest Period and then dividing the product thereof by 365, and rounding the resulting figure to the nearest CNY0.01 (CNY0.005 being rounded upwards), where "**Calculation Amount**" means CNY10,000.

7. REDEMPTION AND PURCHASE

(a) **Scheduled redemption**: Unless previously redeemed, or purchased and cancelled, the Bonds will be redeemed at 100.00 per cent. (100%) of their principal amount on 19 April 2024, subject as provided in Condition 8 (*Payments*).

(b) **Redemption for tax reasons**: The Bonds may be redeemed at the option of the Issuer in whole, but not in part only, at any time, on giving not less than fifteen (15) nor more than thirty (30) days' notice to the Bondholders, the Guarantor, the Trustee and the CMU Lodging and Paying Agent in accordance with Condition 17 (*Notices*) (which notice shall be irrevocable) at their principal amount, together with interest accrued but unpaid to the date fixed for redemption, if:

(i) immediately before giving such notice, the Issuer notifies the Trustee that:

(A) the Issuer has or will become obliged to pay Additional Amounts as provided or referred to in Condition 9 (*Taxation*) as a result of any change in, or amendment to, the laws or regulations of the Relevant Taxing Jurisdiction or any change in the application or official interpretation of such laws or regulations (including a holding by a court of competent jurisdiction), which change or amendment becomes effective on or after 13 April 2021 and such obligation cannot be avoided by the Issuer taking reasonable measures available to it; or

(B) the Guarantor has or will become obliged to pay Additional Amounts as provided or referred to in Condition 9 (*Taxation*) or the CGIF Guarantee, as the case may be, as a result of any change in, or amendment to, the laws or regulations of the Republic of the Philippines (the "**Philippines**") or any political subdivision or any authority thereof or therein having power to tax, or any change in the application or official interpretation of such laws or regulations (including but not limited to a holding by a court of competent jurisdiction), which change or amendment becomes effective on or after 13 April 2021 and such obligation cannot be avoided by the Guarantor taking reasonable measures available to it;

provided, however, that in any event, no such notice of redemption shall be given earlier than one hundred and eighty (180) days prior to the earliest date on which the Issuer or the Guarantor would be obliged to pay such Additional Amounts if a payment in respect of the Bonds were then due; and

(ii) not less than five (5) Business Days prior to the publication of any notice of redemption pursuant to this Condition 7(b), the Issuer shall deliver or procure that there is delivered to the Trustee and the Guarantor:

(A) an Officer's Certificate of the Issuer stating that the circumstances referred to in paragraphs (b)(i)(A) above prevail and setting out the details of such circumstances or (as the case may be) a certificate signed by an authorised officer of the Guarantor stating that the circumstances referred to in paragraphs (b)(i)(B) above prevail and setting out details of such circumstances; and

(B) an opinion in form and substance satisfactory to the Trustee from independent legal or tax advisers of recognised standing to the effect that the Issuer or the Guarantor (as the case may be) has or will become obliged to pay such Additional Amounts as a result of such change or amendment.

The Trustee shall be entitled to accept and rely upon (without further enquiry) any such Officer's Certificate and/or opinion as sufficient evidence of the satisfaction of the circumstances set out above, in which event they shall be conclusive and binding on the Bondholders:

(iii) not less than one (1) Business Day prior to the publication of any notice of redemption pursuant to this Condition 7(b), the Issuer shall irrevocably transfer to a Renminbi account of the Trustee or the CMU Lodging and Paying Agent an amount in Renminbi in immediately available cleared funds sufficient to redeem the Bonds at their principal amount together with any interest accrued but unpaid to the relevant date fixed for redemption.

(iv) If the Issuer fails to comply with any of the requirements of the foregoing provisions of this Condition 7(b) any notice of redemption purported to be delivered pursuant to this Condition 7(b) shall be void and of no effect, but this shall not affect, release or otherwise discharge any of the Issuer's or the Guarantor's other obligations under these Conditions, the Trust Deed or the CGIF Guarantee.

(v) Upon the expiry of any such notice as is referred to in this Condition 7(b)and satisfaction of the other requirements specified in this Condition 7(b), the Issuer shall be bound to redeem the Bonds in accordance with this Condition 7(b) and the CMU Lodging and Paying Agent shall apply all monies delivered to it pursuant to Condition 7(b)(iii)above in redemption of the Bonds in accordance with these Conditions, the Agency Agreement and the Trust Deed.

(c) **Redemption in the event of a CGIF Acceleration:**

(i) At any time following the occurrence of a CGIF Acceleration, the Guarantor may at its discretion, on giving not less than seven (7) nor more than fifteen (15) days' notice to the Issuer, the Trustee and the CMU Lodging and Paying Agent, require the Issuer to redeem the Bonds in whole, but not in part only, at their principal amount, together with interest accrued but unpaid to the date fixed for redemption following which the Issuer shall immediately, or if the Issuer fails to do so the Guarantor may, give notice to the Bondholders, the Trustee and the CMU Lodging and Paying Agent in accordance with Condition 17 (*Notices*) (which notice shall be irrevocable).

(ii) For the purposes of this Condition 7(c), a "**CGIF Acceleration**" occurs if:

(A) an Issuer Event of Default occurs; or

(B) a Missed Payment Event has occurred and is continuing and irrespective of whether or not the Guarantor has already paid any Guaranteed Amounts in respect of such Missed Payment Event; or

(C) any term or provision of the Conditions, the Trust Deed or the Agency Agreement has been amended, modified, varied, novated, supplemented, superseded, waived or terminated without the prior written consent of the Guarantor as required pursuant to the terms of the CGIF Guarantee, Trust Deed or the Agency Agreement, as the case may be,

and the Guarantor has delivered a CGIF Acceleration Notice to the Trustee in accordance with the Trust Deed.

(iii) In this Condition 7(c), a "**CGIF Acceleration Notice**" shall mean a written notice delivered by the Guarantor to the Trustee pursuant to, and substantially in the form set out in, the Trust Deed.

(iv) The Trustee shall be entitled to accept and rely upon (without further enquiry) a CGIF Acceleration Notice as sufficient evidence of the Guarantor's agreement to pay all outstanding Guaranteed Amounts, and such CGIF Acceleration Notice shall be conclusive and binding on the Bondholders.

(v) Upon the relevant date fixed for redemption specified in any CGIF Acceleration Notice and notified to the Bondholders, the Trustee and the CMU Lodging and Paying Agent in accordance with Condition 17 (*Notices*), the Issuer shall be bound to redeem the Bonds in accordance with this Condition 7(c) and the Guarantor shall be bound to pay all Guaranteed Amounts outstanding as set out in the CGIF Acceleration Notice within thirty (30) calendar days from the date of such CGIF Acceleration Notice, *provided that*, (i) CGIF has required the Issuer to redeem the Bonds pursuant to Condition 7(c) and (ii) the Issuer has failed to redeem the Bonds within the prescribed period in accordance with the Conditions.

(d) **Purchase**: The Issuer or any of its Subsidiaries may at any time purchase Bonds in the open market or otherwise and at any price.

(e) **Cancellation**: All Bonds so redeemed or purchased by the Issuer or any of its Subsidiaries shall be cancelled and may not be reissued or resold.

(f) **No other redemption**: The Issuer and the Guarantor shall not be entitled to redeem the Bonds otherwise than as provided in paragraphs (a) to (c) above.

(g) **Calculations**: Neither the Trustee nor any of the Agents shall be responsible for calculating or verifying the calculations of any amount payable under any notice of redemption or have a duty to verify the accuracy, validity and/or genuineness of any documents in relation to or in connection thereto and shall not be liable to the Bondholders or any other person for not doing so.

8. PAYMENTS

(a) **Principal**: Payments of principal shall be made in Renminbi by transfer to a Renminbi account maintained by the payee with, a bank in Hong Kong and (in the case of redemption) upon surrender (or, in the case of part payment only, endorsement) of the relevant Certificates at the Specified Office of the CMU Lodging and Paying Agent.

(b) **Interest**: Payments of interest shall be made in Renminbi by transfer to a Renminbi account maintained by the payee with, a bank in Hong Kong and (in the case of interest payable on redemption) upon surrender (or, in the case of part payment only, endorsement) of the relevant Certificates at the Specified Office of the CMU Lodging and Paying Agent.

(c) **Payments subject to fiscal laws**: Without prejudice to the provisions of Condition 9 (*Taxation*), payments will be subject in all cases to:

(i) any fiscal or other laws and regulations applicable thereto in the place of payment;

(ii) any withholding or deduction required pursuant to an agreement described in Section 1471(b) of the U.S. Internal Revenue Code of 1986 (the "**Code**") or otherwise imposed pursuant to Sections 1471 through 1474 of the Code, any regulations or agreements thereunder, any official interpretations thereof; or

(iii) any law implementing an intergovernmental approach thereto.

No commissions or expenses shall be charged to the Bondholders in respect of such payments made pursuant to this Condition 8(c).

(d) **Payments on Business Days**: Payment instructions (for value the due date, or, if the due date is not a Business Day, for value the next succeeding Business Day) will be initiated:

(i) (in the case of payments of principal and interest payable on redemption) on the later of the due date for payment and the day on which the relevant Certificate is surrendered (or, in the case of part payment only, endorsed) at the Specified Office of a CMU Lodging and Paying Agent; and

(ii) (in the case of payments of interest payable other than on redemption) on the due date for payment **provided that** if such date falls on a day which is not a Business Day it shall be postponed to the next day which is a Business Day.

A Bondholder shall not be entitled to any interest or other payment in respect of any delay in payment resulting from the due date for a payment not being a Business Day.

In this paragraph, "**Business Day**" means any day (other than a Sunday or a Saturday) on which commercial banks are open for general business (including dealings in foreign currencies) and for settlement of Renminbi payment in Manila, Seoul and Hong Kong and, in the case of surrender (or, in the case of part payment only, endorsement) of a Certificate, in the place in which the Certificate is surrendered (or, as the case may be, endorsed).

(e) **Partial payments**: If a CMU Lodging and Paying Agent makes a partial payment in respect of any Bond, the Issuer shall procure that the amount and date of such payment are noted on the Register and, in the case of partial payment upon presentation of a Certificate, that a statement indicating the amount and the date of such payment is endorsed on the relevant Certificate.

(f) **Record date**: Each payment in respect of a Bond will be made to the person shown as the Bondholder in the Register at the opening of business in the place of the Registrar's Specified Office on the fifteenth (15^{th}) day before the due date for such payment (the "**Record Date**").

For so long as any of the Bonds are represented by the Global Certificate, payments of interest or principal will be made to the persons for whose account a relevant interest in the Global Certificate is credited as *being held by the Operator at the relevant time, as notified to the CMU Lodging and Paying Agent by the Operator in a relevant CMU issue position report (as defined in the rules of the CMU Service) or in any other relevant notification by the Operator. Any payments by the CMU participants to indirect participants will be governed by arrangements agreed between the CMU participants and the indirect participants and will continue to depend on the inter-bank clearing system and traditional payment methods. Such payments will be the sole responsibility of such CMU participants.*

9. TAXATION

All payments of principal and interest in respect of the Bonds by or on behalf of the Issuer or the Guarantor shall be made free and clear of, and without withholding or deduction for or on account of, any present or future taxes, duties, assessments or governmental charges of whatever nature imposed, levied, collected, withheld or assessed by or on behalf of the Republic of Korea ("**Korea**") (in the case of the Issuer), the Philippines (in the case of the Guarantor) or any political subdivision thereof or any authority therein or thereof having power to tax, unless the withholding or deduction of such taxes, duties, assessments or governmental charges is required by law. In the event that any such withholding or deduction is so required by law, the Issuer or (in the case of a withholding or deduction required to be made by the Guarantor) the Guarantor shall pay such additional amounts ("**Additional Amounts**") as will result in receipt by the Bondholders after such withholding or deduction of such amounts as would have been received by them had no such withholding or deduction been required, except that no such Additional Amounts shall be payable in respect of any Bond:

(a) held by a Bondholder which is liable to such taxes, duties, assessments or governmental charges in respect of such Bond or, as the case may be, payments made by the Guarantor by reason of its having some connection with the jurisdiction by which such taxes, duties, assessments or charges have been imposed, levied, collected, withheld or assessed other than the mere holding of the Bond; or

(b) held by a Bondholder who would not be liable for, or subject to, such deduction or withholding by making a declaration of non-residence or other similar claim for exemption to the relevant tax authority if such Bondholder fails to do so; or

(c) where (in the case of a payment of principal or interest on redemption) the relevant Certificate is surrendered for payment more than thirty (30) days after the Relevant Date except to the extent that the relevant Bondholder would have been entitled to such Additional Amounts if it had surrendered the relevant Certificate on the last day of such period of thirty (30) days.

In these Conditions, "**Relevant Date**" means whichever is the later of: (1) the date on which the payment in question first becomes due; and (2) if the full amount payable has not been received by the CMU Lodging and Paying Agent or the Trustee on or prior to such due date, the date on which (the full amount having been so received) notice to that effect has been given to the Bondholders.

If any such deduction or withholding shall be required and if the Issuer or (as the case may be) the Guarantor therefore becomes liable to pay any Additional Amounts, then at least five (5) Business Days prior to each payment date, the Issuer or (as the case may be) the Guarantor shall furnish the CMU Lodging and Paying Agents with a certificate that specifies the amount required to be withheld on such payment date to Bondholders and the Additional Amounts due to Bondholders and that the Issuer or (as the case may be) the Guarantor shall pay in a timely manner such amount to be withheld to the appropriate government agency, and the Issuer or (as the case may be) the Guarantor will pay to the CMU Lodging and Paying Agents such Additional Amounts as shall be required to be paid to such Bondholders.

Any reference in these Conditions to principal or interest shall be deemed to include any additional amounts in respect of principal or interest (as the case may be) which may be payable under this Condition 9 (*Taxation*) or any undertaking given in addition to or in substitution of this Condition 9 (*Taxation*) pursuant to the Trust Deed.

If the Issuer or the Guarantor, as the case may be, becomes subject at any time to any taxing jurisdiction other than Korea (in the case of the Issuer) or the Philippines (in the case of the Guarantor), references in these Conditions to Korea or the Philippines shall be construed as references to Korea or the Philippines (as the case may be) and/or such other jurisdiction.

Neither the Trustee nor the Agents shall be responsible for paying any tax, duty, charge, withholding or other payment referred to in this Condition 9 or for determining whether such amounts are payable or the amount thereof, and shall not be responsible or liable for any failure by the Issuer, the Guarantor, the Bondholders or any other person to pay such tax, duty, charge, withholding or other payment.

10. **SUBSTITUTION OF THE ISSUER**

The Issuer may, at any time (without any requirement for the consent or approval of the Bondholders), subject to the provisions of this Condition 10 having been complied with, and the Trustee shall agree to, substitute any corporation with which the Issuer has consolidated, merged with or into, or transferred all or substantially all of its assets to (such substituted corporation being hereinafter called the "New Issuer") to assume liability for the due and punctual payment of all payments and the performance of all the Issuer's other obligations under, or in respect of, the Bonds then outstanding. Upon any such substitution, the New Issuer shall succeed to the rights and obligations of the Issuer (or any previous assuming company) under the Bonds and the Issuer (or any previous substitute) shall be released from its liability on the Bonds. Such substitution shall be permitted only if, in addition to assuming the obligations of the Issuer (or of any previous substitute) under the Bonds:

(a) prior written consent of the Guarantor is obtained;

(b) the New Issuer is a corporation organised and existing under the laws of Korea;

(c) immediately before and immediately after the transaction, with respect to the Issuer or the New Issuer, no Event of Default and no event which, after notice or lapse of time or both, would become an Event of Default, shall have occurred and be continuing;

(d) if the New Issuer assumes by means of a supplemental trust deed and a supplemental agency agreement, all the obligations of the Issuer under the Bonds, the Trust Deed and the Agency Agreement;

(e) the Guarantor confirms by means of a supplemental guarantee agreement that the CGIF Guarantee will apply to the Bonds following the substitution of the Issuer;

(f) the New Issuer shall have obtained confirmation from SGX-ST that the Bonds will continue to be listed on SGX-ST;

(g) all applicable requirements under the laws of Korea for the purpose of such substitution are complied with; and

(h) the New Issuer and the Guarantor shall have obtained legal opinions (which are capable of being relied upon by the Trustee and contain no more than customary assumptions or qualifications) from independent legal advisers of recognised standing in Korea and England and from the General Counsel and Board Secretary of CGIF, that the obligations of such successor corporation and of the Guarantor in respect of the Bonds, the supplemental guarantee agreement, the supplemental trust deed and the supplemental agency agreement (as the case may be), are legal, valid, binding and enforceable and that all consents and approvals as aforesaid have been obtained.

The Issuer shall deliver to the Trustee prior to the proposed transaction an Officers' Certificate, which shall state that such substitution of the Issuer complies with this Condition 10 and that all conditions precedent herein provided for relating to such substitution have been complied with.

11. **EVENTS OF DEFAULT**

(a) If any of the following events occurs and is continuing (each, an "**Event of Default**"), then the Trustee shall comply with the limitations on acceleration as set out in Conditions 11(b) to (d) below to the extent applicable:

(i) **Non-payment**: the Issuer or the Guarantor fails to pay any amount of principal in respect of the Bonds or fails to pay any amount of interest in respect of the Bonds, in each case within thirty (30) calendar days after the due date for payment thereof; or

(ii) **Breach of other obligations**: the Issuer defaults in the performance or observance of any of its other obligations under or in respect of the Bonds or the Trust Deed and such default (A) is incapable of remedy or (B) being a default which is capable of remedy remains unremedied for thirty (30) calendar days after the Trustee has given written notice thereof to the Issuer; or

(iii) **Cross-acceleration of the Issuer**:

(A) if any Indebtedness of the Issuer becomes due and repayable prematurely by reason of acceleration thereof following an event of default (however described);

(B) the Issuer fails to make any payment in respect of any Indebtedness on the due date for payment or (as the case may be) within any applicable grace period; or

(C) if any security given by the Issuer for any Indebtedness becomes enforceable or proceedings are commenced to enforce any security,

provided that no event described in this Condition 11(a)(iii) shall constitute an Event of Default unless the relevant amount of Indebtedness or other relative liability due and unpaid, either individually or when aggregated (without duplication) with other amounts of Indebtedness and/or other liabilities due and unpaid relative to all (if any) other events specified in (A) through (D) above which have occurred and are continuing, amounts to at least U.S.$50,000,000 (or its equivalent in any other currency); or

(iv) **Unsatisfied judgment**: one or more judgment(s) or order(s) for the payment of an individual amount in excess of U.S.$50,000,000 (or its equivalent in any other currency or currencies) is rendered against the Issuer, is not subject to any further ability to object or appeal and continue(s) unsatisfied and unstayed for a period of thirty (30) calendar days after the date(s) thereof or, if later, the date therein specified for payment; or

(v) **Security enforced**: a secured party takes possession, or a receiver, manager or other similar officer is appointed, of the whole or substantially all of the undertaking, assets and revenues of the Issuer; or

(vi) **Insolvency, etc.**: (A) the Issuer becomes insolvent or is unable to pay all or substantially all of its debts as they fall due, stops, suspends or threatens to stop or suspend payment of all or a material part of its debts (as and when such debts fall due); (B) an administrator or liquidator is appointed (or application for any such appointment is made) in respect of the Issuer for the whole or substantially all of the undertaking, assets and revenues of the Issuer; (C) the Issuer takes any proceeding under any law for a readjustment or deferment of all or substantially all of its obligations or makes a general assignment or an arrangement or composition with or for the benefit of its creditors or declares a moratorium in respect of all or substantially all of its indebtedness or any Guarantee of any such indebtedness given by it; or (D) an order is made or an effective resolution is passed for the winding up, liquidation or dissolution of the Issuer which has not been discharged or stayed within thirty (30) calendar days or the Issuer ceases to carry on all or substantially all of its business, except for (i) the purpose of a consolidation, merger, sale or transfer pursuant to Condition 10 *(Substitution of the Issuer)* or (ii) on terms approved by an Extraordinary Resolution of the Bondholders; or

(vii) **Enforcement proceedings**: a distress, attachment, execution or legal process is levied, enforced or sued out on or against all or any material part of the assets of the Issuer and is not removed, dismissed or discharged within 45 days; or

(viii) **Analogous event**: any event occurs which under the laws of any relevant jurisdiction has an analogous effect to any of the events referred to in paragraphs (iii)(A) (*Unsatisfied judgment*) to (vii) (*Enforcement proceedings*) above; or

(ix) **Failure to take action, etc.**: any action, condition or thing (including the obtaining or effecting of any necessary consent, approval, authorisation, exemption, filing, licence, order, recording or registration) at any time required to be taken, fulfilled or done in order (A) to enable the Issuer lawfully to enter into, exercise its rights and perform and comply with its obligations under and in respect of the Bonds, the Trust Deed and the Agency Agreement; and (B) to ensure that those obligations are legal, valid, binding and enforceable is not taken, fulfilled or done; or

(x) **Unlawfulness**: it is or will become unlawful for the Issuer to perform or comply with any of its obligations under or in respect of the Bonds or the Trust Deed; or

(xi) **Guarantee not in force**: the CGIF Guarantee is not (or is claimed by the Guarantor not to be) in full force and effect.

(b) Subject to clause 2.1 (*Guarantee*) of the CGIF Guarantee and clause 3.2 (*Missed Payment Event*) and clause 3.3 (*Acceleration*) of the Trust Deed, if a Missed Payment Event has occurred and is continuing, the Guarantor shall pay the Guaranteed Amount relating to the Missed Payment Event to the Guaranteed Party within thirty (30) calendar days of such Missed Payment Event.

(c) The Trustee shall not take an Acceleration Step unless the Guarantor has failed to make payment of a Guaranteed Amount such that a Non-Payment Event has occurred and is continuing (a "**Guaranteed Party Acceleration**"). Pursuant to the Trust Deed, neither the Trustee nor any Bondholder shall be entitled to take an Acceleration Step against the Issuer or the Guarantor unless a Guaranteed Party

Acceleration has occurred or with the prior written consent of the Guarantor and, in the event that an Acceleration Step is taken in contravention of such provision, the Guarantor shall not be required to pay any amounts in respect of such Acceleration Step.

(d) Upon the occurrence of a Guaranteed Party Acceleration and if the Guaranteed Amounts are not paid by the Issuer in accordance with these Conditions and the Trust Deed following such Guaranteed Party Acceleration, the Trustee may at its sole discretion and, if so requested in writing by holders of at least 25 per cent. of the aggregate principal amount of the outstanding Bonds, or if so directed to do so by an Extraordinary Resolution, shall (subject to the Trustee having been indemnified and/or provided with security and/or pre-funded to its satisfaction in all cases) deliver in accordance with the Trust Deed a Guaranteed Party Acceleration Notice in respect of the aggregate of the unpaid Guaranteed Amounts and the Guarantor Default Interest Amount (if any) to be paid by CGIF in accordance with the CGIF Guarantee.

(e) The Trustee shall not be obliged to take any steps to ascertain whether a Default or an Event of Default has occurred or to monitor the occurrence of any Default or Event of Default, and shall not be liable to the Bondholders or any other person for not doing so.

12. PRESCRIPTION

Claims for principal and interest on redemption shall become void unless the relevant Certificates are surrendered for payment within a period of ten years (in the case of principal) and five years (in the case of interest) after the appropriate Relevant Date.

13. REPLACEMENT OF CERTIFICATES

If any Certificate is lost, stolen, mutilated, defaced or destroyed, it may be replaced at the Specified Office of the Registrar, subject to all applicable laws and stock exchange requirements, upon payment by the claimant of the expenses incurred in connection with such replacement and on such terms as to evidence, security, indemnity and otherwise as the Issuer or the Registrar may reasonably require. Mutilated or defaced Certificates must be surrendered before replacements will be issued.

14. TRUSTEE AND AGENTS

Pursuant to the Trust Deed, the Trustee is entitled to be indemnified and/or provided with security and/or pre-funded to its satisfaction and relieved from responsibility in certain circumstances and to be paid its fees, costs, expenses and indemnity payments in priority to the claims of the Bondholders. In addition, the Trustee, Agents and their respective directors and officers are entitled to enter into business transactions with the Issuer, the Guarantor and any entity relating to the Issuer or the Guarantor without accounting for any profit.

In the exercise of its functions, rights, powers and discretions under these Conditions, the Trust Deed and the CGIF Guarantee, the Trustee will have regard to the interests of the Bondholders as a class and will not be responsible for any consequence for individual Bondholders as a result of any circumstances particular to individual holders of Bonds, including but not limited to such Bondholders being connected in any way with a particular territory or taxing jurisdiction.

The Trustee shall not be responsible for the execution, delivery, legality, effectiveness, adequacy, genuineness, validity, enforceability or admissibility in evidence of these Conditions, the Trust Deed or any other document relating thereto, any licence, consent or other authority for the execution, delivery, legality, effectiveness, adequacy, genuineness, validity, performance, enforceability or admissibility in evidence of these Conditions or the Trust Deed or any other document relating thereto. In addition, the Trustee shall not be responsible for the effect of the exercise of any of its powers, duties and discretions hereunder.

In acting under the Agency Agreement and in connection with the Bonds, the Agents act solely as agents of the Issuer and (to the extent provided therein) the Trustee and do not assume any obligations towards or relationship of agency or trust for or with any of the Bondholders.

The Issuer and the Guarantor reserve the right (with the prior written approval of the Trustee) at any time to vary or terminate the appointment of any Agent and to appoint a successor registrar or paying agent and additional or successor paying agents and transfer agents; **provided, however, that** the Issuer shall at all times maintain (a) a registrar outside of the United Kingdom; (b) a CMU Lodging and Paying Agent having a specified office in Hong Kong; and (c) such other agents as may be required by any stock exchange on which the Bonds may be listed.

Notice of any change in any of the Agents or in their Specified Offices shall promptly be given to the Bondholders in accordance with Condition 17 (*Notices*) by the Issuer.

15. **MEETINGS OF BONDHOLDERS; MODIFICATION AND WAIVER**

(a) **Meetings of Bondholders**: The Trust Deed contains provisions for convening meetings of Bondholders to consider matters relating to the Bonds, including the modification of any provision of these Conditions or the Trust Deed or the Agency Agreement. Any such modification may be made if sanctioned by an Extraordinary Resolution. Such a meeting may be convened by the Issuer, the Guarantor or by the Trustee and shall be convened by the Issuer upon the request in writing of Bondholders holding not less than one-tenth of the aggregate principal amount of the outstanding Bonds and if the Issuer defaults for a period of seven days in its obligation to convene such a meeting the same may be convened by the Trustee and subject to the Trustee being indemnified and/or provided with security and/or pre-funded to its satisfaction against all costs and expenses. The quorum at any meeting convened to vote on an Extraordinary Resolution will be one or more persons holding or representing one more than half of the aggregate principal amount of the outstanding Bonds or, at any adjourned meeting, one or more persons being or representing Bondholders whatever the principal amount of the Bonds held or represented; **provided, however, that** certain proposals (including any proposal (i) to change any date fixed for payment of principal or interest in respect of the Bonds, (ii) to reduce the amount of principal or interest payable on any date in respect of the Bonds, (iii) to alter the method of calculating the amount of any payment in respect of the Bonds or the date for any such payment, (iv) to change the currency of payments under the Bonds, (v) sanctioning, or directing the Trustee to concur in, the amendment of the terms of the CGIF Guarantee (subject to and in accordance with the Trust Deed and the CGIF Guarantee), (vi) to change the quorum requirements relating to meetings or (vii) to change the majority required to pass an Extraordinary Resolution (each, a "**Reserved Matter**")) may only be sanctioned by an Extraordinary Resolution passed at a meeting of Bondholders at which one or more persons holding or representing not less than two-thirds or, at any adjourned meeting, one quarter of the aggregate principal amount of the outstanding Bonds form a quorum. Any Extraordinary Resolution duly passed at any such meeting shall be binding on all the Bondholders, whether present or not.

In addition, a resolution in writing signed by or on behalf of Bondholders who for the time being are entitled to receive notice of a meeting of Bondholders under the Trust Deed and who hold not less than 90 per cent. of the aggregate principal amount of the Bonds outstanding shall for all purposes be as valid and effective as an Extraordinary Resolution passed at a meeting of Bondholders duly convened and held. Such a resolution in writing may be contained in one document or several documents in the same form, each signed by or on behalf of one or more Bondholders.

(b) **Modification and waiver**: The Trustee may, with the consent of the Issuer and the Guarantor but without the consent of the Bondholders, agree, but shall not be obliged to agree:

(i) to any modification of these Conditions, the Trust Deed or the Agency Agreement (other than in respect of a Reserved Matter) if such modification will not be materially prejudicial to the interests of Bondholders; and

(ii) to any modification of the Bonds, these Conditions, the Trust Deed or the Agency Agreement which is of a formal, minor or technical nature or is to correct a manifest error or which is necessary to comply with mandatory provisions of law.

In addition, the Trustee may with the consent of the Issuer and the Guarantor but without the consent of the Bondholders, authorise or waive any proposed breach or breach of the Bonds, these Conditions, the Trust Deed or the Agency Agreement (other than a proposed breach or breach relating to the subject of a Reserved Matter) if the interests of the Bondholders will not be materially prejudiced thereby, **provided that** the Trustee will not do so in contravention of an express direction given by an Extraordinary Resolution or a request made pursuant to Condition 11 (*Events of Default*).

Any such authorisation, waiver or modification shall be binding on the Bondholders and unless the Trustee agrees otherwise, any such authorisation, waiver or modification shall be notified to the Bondholders in accordance with Condition 17 (*Notices*) by the Issuer as soon as reasonably practicable thereafter.

(c) **Directions from Bondholders**: Notwithstanding anything to the contrary in the Bonds, the Trust Deed and/or the Agency Agreement, whenever the Trustee is required or entitled by the terms in the Bonds, the Trust Deed and/or the Agency Agreement to exercise any discretion or power, take any action, make any decision or give any direction or certification, the Trustee is entitled, prior to exercising any such discretion or power, taking any such action, making any such decision, or giving any such direction or certification, to seek directions from the Bondholders by way of an Extraordinary Resolution and seek clarification of any such directions and shall have been indemnified and/or secured and/or pre-funded to its satisfaction against all action, proceedings, claims and demands to which it may be or become liable and all costs, charges, damages, expenses (including legal expenses) and liabilities which may be incurred by it in connection therewith, and the Trustee is not responsible for any loss or liability incurred by any person as a result of any delay in it exercising such discretion or power, taking such action, making such decision, or giving such direction or certification where the Trustee is seeking such directions or clarifications.

(d) **Certificates and Reports**: The Trustee may rely without liability to Bondholders on a report, advice, opinion, confirmation or certificate from any lawyers, valuers, accountants (including auditors and surveyors), financial advisers, financial institution or any other expert, whether or not addressed to it and whether their liability in relation thereto is limited (by its terms or by any engagement letter relating thereto or in any other manner) by reference to a monetary cap, methodology or otherwise. The Trustee may accept and shall be entitled to rely on any such report, confirmation, opinion or certificate or advice and such report, confirmation, opinion or certificate or advice shall be binding on the Issuer and the Bondholders.

16. ENFORCEMENT

Subject to the terms of the Trust Deed and Condition 11(c) (*Events of Default*), the Trustee may at any time, at its discretion and without notice, institute such actions, steps and proceedings as it thinks fit to enforce its rights under the Trust Deed in respect of the Bonds, but it shall not be bound to do so unless:

(a) it has been so requested in writing by the Bondholders of at least one quarter of the aggregate principal amount of the outstanding Bonds or has been so directed by an Extraordinary Resolution; and

(b) it has been indemnified and/or provided with security and/or pre-funded to its satisfaction.

No Bondholder may proceed directly against the Issuer unless the Trustee, having become bound to do so, fails to do so within a reasonable time and such failure is continuing.

17. NOTICES

Notices to Bondholders will be valid if (i) for so long as the Bonds are listed on the SGX-ST and the rules of the SGX-ST so require, published on the website of the SGX-ST at http://www.sgx.com or (ii) despatched by prepaid ordinary post (by airmail if to another country) to Bondholders at their addresses appearing in the Register (in the case of joint holders to the address of the holder whose name stands first in the Register). Any such notice shall be deemed to have been given on the date of publication or despatch to the Bondholders, as the case may be.

Until such time as any definitive Certificates are issued, so long as the Global Certificate is held in its entirety on behalf of the Operator, any notice to the accountholders shall be validly given by the delivery of the relevant notice to the CMU Service and any such notice shall be deemed to have been given to the accountholders on the day on which such notice is delivered to the CMU Service, except that if the Bonds are listed on the SGX-ST and the rules of the SGX-ST so require, notice will in any event be published in accordance with the preceding paragraph.

18. CURRENCY INDEMNITY

If any sum due from the Issuer in respect of any payments to the Trustee under Clause 9 (*Remuneration and Indemnification of the Trustee*) of the Trust Deed and any payments in respect of the Agents under Clause 14 (*Fees and Expenses*) and Clause 15 (*Indemnity*) of the Agency Agreement or any order or judgment given or made in relation thereto has to be converted from the currency (the "**first currency**") in which the same is payable under the Trust Deed and/or the Agency Agreement or such order or judgment into another currency (the "**second currency**") for the purpose of:

(a) making or filing a claim or proof against the Issuer;

(b) obtaining an order or judgment in any court or other tribunal; or

(c) enforcing any order or judgment given or made in relation to the Trust Deed and/or the Agency Agreement, the Issuer shall indemnify the Trustee and each Agent, on the written demand of the Trustee or such Agent, against any loss suffered as a result of any discrepancy between:

(i) the rate of exchange used for such purpose to convert the sum in question from the first currency into the second currency; and

(ii) the rate or rates of exchange at which the Trustee or such Agent may in the ordinary course of business purchase the first currency with the second currency upon receipt of a sum paid to it in satisfaction, in whole or in part, of any such order, judgment, claim or proof.

This indemnity constitutes a separate and independent obligation of the Issuer and shall give rise to a separate and independent cause of action.

19. **GOVERNING LAW AND DISPUTE RESOLUTION**

(a) **Governing law**

The Bonds (including these Conditions), the Trust Deed, the Agency Agreement and the CGIF Guarantee and any non-contractual obligations arising out of or in connection with them are governed by, and shall be construed in accordance with, English law.

(b) **Dispute Resolution**

(i) This Condition 19(b) (Dispute Resolution) and any non-contractual obligations arising out of or in connection with it shall be governed by English law.

(ii) Any dispute, claim, difference or controversy arising out of, relating to, or having any connection with these Conditions (which includes this Condition 19, the Bonds, the Trust Deed, the Agency Agreement, the CGIF Guarantee), including any dispute as to its existence, validity, interpretation, performance, breach or termination, or the consequences of its nullity and any dispute relating to any non-contractual obligations arising out of or in connection with them (for the purpose of this Condition 19, a "**Dispute**"), shall be referred to and be finally resolved by arbitration under the Arbitration Rules of the Singapore International Arbitration Centre ("**SIAC**") in force when the notice of arbitration is received by SIAC (other than as amended by this Condition 19(b)) (for the purpose of this Condition 19(b), the "**Rules**").

(iii) Following the commencement of arbitration, and following the exchange of the Notice of Arbitration and Response to the Notice of Arbitration, they will initially attempt in good faith to resolve the Dispute through mediation at the Singapore International Mediation Centre ("**SIMC**"), in accordance with the SIAC-SIMC Arb-Med-Arb Protocol (the Protocol) for the time being in force which shall last for a period not exceeding eight (8) weeks from the commencement of the mediation proceedings (the "**Mediation Period**"). Where a settlement has been reached between the parties within the Mediation Period, such terms of settlement shall be referred to the arbitral tribunal and the arbitral tribunal may make a consent award on such agreed terms. In the absence of a settlement by the parties within the Mediation Period, the Dispute shall revert back to arbitration pursuant to the Protocol. Unless otherwise agreed by the parties, the arbitration shall resume by arbitrators who were not involved in the mediation process above.

(iv) The Rules and the Protocol are incorporated by reference into this Condition 19 and capitalised terms used in this Condition 19 (which are not otherwise defined in these Conditions) shall have the meaning given to them in the Rules and the Protocol.

(v) The number of arbitrators shall be three. All arbitrators shall be fluent in English. The claimant(s) shall nominate one arbitrator. The respondent(s) shall nominate one arbitrator. The arbitrators nominated by the Parties in accordance with the Rules shall jointly nominate the third arbitrator who, subject to confirmation by the President of the Court of Arbitration of SIAC (the "**President**"), will act as presiding arbitrator of the arbitral tribunal. If the third arbitrator is not chosen by the two arbitrators nominated by the Parties within 30 days of the date of appointment of the later of the two party-appointed arbitrators to be appointed, the third arbitrator shall be appointed by the President.

(vi) The seat of arbitration, shall be Singapore and all hearings shall take place in Singapore unless the arbitral tribunal in its absolute discretion decides that a different location will be more appropriate.

(vii) Except as modified by the provisions of this Condition 19, the Rules and the Protocol, Part II of the International Arbitration Act (Cap. 143A) of Singapore shall apply to any arbitration proceedings commenced under this Condition 19. Neither Party shall be required to give general discovery of documents, but may be required only to produce specific, identified documents which are relevant to the Dispute.

(viii) The language used in the arbitral proceedings shall be English. All documents submitted in connection with the proceedings shall be in the English language, or, if in another language, accompanied by an English translation and in which case, the English translation shall prevail.

(ix) Service of any Notice of Arbitration made pursuant to this Condition 19 shall be made in accordance with the Rules and the Trust Deed.

(x) The arbitration award(s) rendered by the arbitral tribunal shall be final and binding on the Parties. The Parties undertake to reasonably carry out the award(s) without delay. To the fullest extent permitted under any applicable law, the Parties irrevocably exclude and agree not to exercise any right to refer points of law or to appeal to any court or other judicial authority.

(xi) The arbitral tribunal and/or any emergency arbitrator appointed in accordance with the Rules shall not be authorised to order, and each of the Issuer, the Bondholders, the Trustee and each of the Agents agrees for itself and on behalf of each Bondholder that it shall not seek from any arbitral tribunal or judicial authority:

(A) any order of whatsoever nature against the Asian Development Bank and other contributors to CGIF, and any of their respective officers, employees or agents; or

(B) any interim order to sell, attach, freeze or otherwise enforce against CGIF Assets.

(xii) The Rules shall not prohibit: (i) CGIF from disclosing any information relating to any arbitral proceedings and/or arbitral award arising out of this Condition 19 to the Board of Directors of CGIF (the "**CGIF Board**") as part of its approval process and portfolio administration, or to the Asian Development Bank or any other contributors to the Guarantor or any of their respective officers, employees, advisers, agents or representatives, provided that all such information and documents insofar as such disclosure relates to any arbitral proceedings and/or arbitral award shall be clearly marked "CONFIDENTIAL." The members of CGIF Board may seek instructions from their constituents for the purpose of CGIF Board approval and portfolio administration and the CGIF Board documents and other relevant information may be distributed to any representatives of the relevant member countries of the Guarantor for the said purpose only, provided that all such information and documents insofar as such disclosure relates to any arbitral proceedings and/or arbitral award shall be clearly marked "CONFIDENTIAL."

(xiii) Nothing in these Conditions, or any agreement, understanding or communication relating to these Conditions (whether before or after the date of these Conditions), shall constitute or be construed as an express or implied waiver, renunciation, exclusion or limitation of any of the immunities, privileges or exemptions accorded to the Asian Development Bank under the Agreement Establishing the Asian Development Bank, any other international convention or any applicable law, or accorded to CGIF under the Articles of Agreement of the Guarantor.

20. LIMITED RECOURSE

Notwithstanding any other provisions of these Conditions, the recourse of the Bondholders against CGIF under these Conditions is limited solely to CGIF Assets. The Bondholders acknowledge and accept that they only have recourse to CGIF Assets and they have no recourse to any assets of Asian Development Bank or any other contributors to CGIF. Any obligation under these Conditions of CGIF shall not constitute an obligation of Asian Development Bank or any other contributors to CGIF.

21. NO PERSONAL LIABILITY

Notwithstanding any other provisions of these Conditions, neither Asian Development Bank nor any other contributors to CGIF or the officers, employees or agents of the Asian Development Bank or any contributor to CGIF shall be subject to any personal liability whatsoever to any third party including the Bondholders and the Trustee in connection with the operation of CGIF or under these Conditions. No action may be brought against Asian Development Bank as the trustee of CGIF or as contributor to CGIF or against any other contributors to CGIF or any of their respective officers, employees or agents by any third party including the Bondholders and the Trustee in connection with these Conditions.

22. **NO WAIVER**

Nothing in these Conditions, or any agreement, understanding or communication relating to these Conditions, shall constitute or be construed as an express or implied waiver, renunciation, exclusion or limitation of any of the immunities, privileges, or exemptions accorded to the Asian Development Bank under the Agreement Establishing the Asian Development Bank, any other international convention or any applicable law, or accorded to CGIF under the Articles of Agreement of CGIF.

23. **CONTRACTS (RIGHTS OF THIRD PARTIES) ACT 1999**

Unless expressly provided to the contrary in the Bonds, the Trust Deed, the Agency Agreement, and the CGIF Guarantee, a person who is not a party to these Conditions may not enforce any of its terms under the Contracts (Rights of Third Parties) Act 1999 and, notwithstanding any term of any of the Bonds, the Trust Deed, the Agency Agreement, and the CGIF Guarantee, no consent of any third party is required for any amendment (including any release or compromise of any liability) or termination of these Conditions. Notwithstanding the foregoing, the Asian Development Bank and other contributors to CGIF, and any of their respective officers, employees or agents may enforce Conditions 20 (*Limited Recourse*), 21 (*No Personal Liability*), 22 (*No waiver*), and 19(b)(x)(A) (*Dispute Resolution*) and 19(b)(x)(B) (*Dispute Resolution*) of these Conditions.

THE GLOBAL CERTIFICATE

The Global Certificate contains provisions which apply to the Bonds of the relevant series while they are in global form, some of which modify the effect of the Terms and Conditions of the Bonds of the relevant series set out in this Offering Circular. The following is a summary of certain of those provisions.

The Bonds will be represented by a Global Certificate which will be registered in the name of a nominee of, and deposited with, a sub-custodian for CMU.

Under the Global Certificate, the Issuer, for value received, will promise to pay the amount payable upon redemption under the Terms and Conditions of the Bonds represented by the Global Certificate to the Bondholders in such circumstances as the same may become payable in accordance with the Terms and Conditions of the Bonds.

The Global Certificate will become exchangeable in whole, but not in part, for individual certificates if:

(a) if the CMU is closed for business for a continuous period of 14 days (other than by reason of holiday, statutory or otherwise) or announces an intention permanently to cease business or does in fact do so and no alternative clearing system satisfactory to the Trustee is available or the CMU has notified the Issuer that it is unable or unwilling to act as depository for the Bonds and to continue performing its duties as set out in the terms and conditions for the provision of depository services and no alternative clearing system is available; or

(b) upon or following any failure to pay principal in respect of any Bonds when it is due and payable, or an event of default, enforcement event or analogous event entitling a Bondholder or the trustee for the Bondholders to declare the Bonds to be due and payable as provided in the constituent documents has occurred and is continuing; or

(c) with the consent of the Issuer.

In such circumstances, the Issuer at its own expense will cause sufficient individual Certificates to be executed and delivered to the Registrar for completion, authentication and despatch to the relevant holders of the Bonds. A person with an interest in the Bonds in respect of which the Global Certificate is issued must provide the Registrar with a written order containing instructions and such other information as the Issuer and the Registrar may require to complete, execute and deliver such individual Certificates.

In addition, each Global Certificate will contain provisions that modify the Terms and Conditions of the Bonds as they apply to the relevant series of the Bonds evidenced by such Global Certificate. The following is a summary of certain of those provisions:

Purchase and Cancellation: Cancellation of any Bond will be effected by a reduction in the principal amount of the Global Certificate and in the register of Bondholders.

Accountholders: For so long as all of the Bonds are represented by the Global Certificate and such Global Certificate is deposited with a sub-custodian for the CMU, each person who is for the time being shown in the records of the CMU as entitled to a particular principal amount of such Bonds (each an "**Accountholder**") (in which regard any certificate or other document issued by Clearstream and/or Euroclear as to the aggregate principal amount of such Bonds standing to the account of any person shall, in the absence of manifest error, be conclusive and binding for all purposes) shall be treated as the holder of such aggregate principal amount of such Bonds (and the expression "Bondholders" and references to "holding of Bonds" and to "holder of Bonds" shall be construed accordingly) for all purposes (including for the purposes of any quorum requirements of, or the right to demand a poll at, meetings of the holders) other than with respect to the payment of principal and interest on such Bonds, for which purpose the registered holder of the Global Certificate shall be deemed to be the holder of such principal amount of the Bonds in accordance with and subject to the terms of the Global Certificate and the Trust Deed. Each Accountholder must look solely to the CMU for its share of each payment made to the registered holder of the Global Certificate.

Notices: For so long as all of the Bonds are represented by the Global Certificate and the Global Certificate is deposited with a sub-custodian for the CMU, notices to holders may be given by delivery of the relevant notice to the CMU and any such notice shall be deemed to have been given to the Accountholders on the day on which such notice is delivered to the CMU rather than by publication as required by Condition 17 (*Notices*).

Whilst any Bonds held by a holder are represented by the Global Certificate, notices to be given by such holder may be given by such holder to the Registrar through a person shown in the CMU Issue Position Report in such a manner as the Registrar and the CMU may approve for this purpose.

USE OF PROCEEDS

The Issuer estimates that the net proceeds from the Offering, after deducting a combined management and commission but not estimated expenses, will be approximately CNY996,000,000.

The Issuer will allocate the net proceeds from the offering of the Bonds towards the financing or refinancing, in whole or in part, of new or existing projects in "Eligible Green Projects" in accordance with the Framework. See "*Green Financing Framework*" for further information.

GREEN FINANCING FRAMEWORK

In March 2021, as part of its commitment to responsible corporate citizenship, the Issuer established its Green Financing Framework (the "**Framework**") under which the Group may issue green bonds, loans and other debt instruments that contribute to green development (together, the "**Green Financing Instruments**"). The Framework was established in accordance with the four core components shared by the International Capital Markets Association's 2018 Green Bond Principles (the "**2018 ICMA GB Principles**") and the Loan Market Association's 2018 Green Loan Principles (the "**2018 LMA GL Principles**"), which are (i) use of proceeds, (ii) process for project evaluation and selection, (iii) management of proceeds and (iv) reporting. The following is a summary of the four core components under the Framework.

Use of Proceeds

The Group shall allocate an amount equivalent to the net proceeds from the Green Financing Instruments (the "**Proceeds**") toward the financing or refinancing, in whole or in part, of new or existing projects in the eligible green project category ("**Eligible Green Projects**") under the Framework. The following are descriptions of, as well as examples of Eligible Green Projects as set forth in the Framework.

Eligible Green Project Category	Eligibility Criteria	Eligible Projects
Renewable Energy	Expenditures for, and refinancing of, the Company's renewable energy/clean energy business, including: • Solar cells and solar modules under its Q CELLS Division and its subsidiaries and research and development in solar cell and module production. • Investment in solar power generation assets (including building and operation) and downstream distribution of energy based on solar power generation • Investment in green hydrogen businesses and/or projects, including research and development in green hydrogen production, storage and distribution. • Acquisition(1) and investment into assets in relation to green hydrogen businesses including assets for hydrogen storage and distribution.	• Investment in Q CELLS Division and its subsidiaries for production of solar cells and modules and research and development. • Acquisition of solar power generation assets and investments into solar energy retail business. • Research and development of Green Hydrogen Electrolysis Technology by Chemical Division. • Acquisition and investment in assets for hydrogen storage and distribution.

(1) The Group would use a pro-rata allocation of Proceeds based on the percentage book value of eligible green assets within the acquired company's balance sheet.

Project Evaluation and Selection

The Group has set up a Green Financing Working Group ("**GFWG**") to carry out the evaluation and selection process to ensure that the Proceeds are allocated to projects that meet the eligibility criteria set out under the Framework. The GFWG consists of the Group's Accounting Team, Planning Team, Legal Team and Environment & Safety Team, and is coordinated by either the International Finance Team or Finance Team.

The GFWG will:

- ratify eligible business and projects, which are initially proposed by constituent team members;
- undertake regular monitoring of the asset pool to ensure the eligibility of businesses and projects, whilst replacing any ineligible businesses and projects with eligible new green assets;
- facilitate regular reporting on any issuance of Green Financing Instruments in alignment with the Group's reporting commitments;
- manage any future updates to the Framework; and
- ensure that the approval of Eligible Green Projects will follow the Group's existing credit, loan and investment approval processes.

Management of Proceeds

To record the allocation of the Proceeds, the Group has established a dedicated ledger (the "Ledger"). The GFWG will track the Proceeds via a formal internal process to ensure linkage to Eligible Green Projects.

The Ledger will contain the following information:

- Details of the Green Financing Instruments, including key information regarding the pricing date, maturity date, principal amount of proceeds, coupon, ISIN number, etc.
- Details of the allocation of the Proceeds, including: (1) a list of Eligible Green Projects the Group has allocated Proceeds to with details on the Eligible Green Project Category, project description, the Group's ownership percentage, total project cost, amount allocated, settled currency, etc.; and (2) amount of unallocated Proceeds.

Any Proceeds temporarily unallocated will be placed in short-term liquid money instruments such as cash and market securities according to the Group's investment guidelines.

Reporting

Until the Proceeds has been fully allocated, the Group will disclose the allocation of the Proceeds and the expected impact of such allocation based on relevant qualitative and quantitative environmental performance indicators, along with the methodologies and key assumptions thereto, on annual or timely basis in case of material changes. Such information shall be disclosed in the group's dedicated green bond report.

Allocation reporting may include the amount of Proceeds allocated to each Eligible Green Project, a description of the Eligible Green Project and other pertinent information. Impact reporting may include the following:

Eligible Projects	Impact Indicators
Investment in Q CELLS Division and its subsidiaries for production of solar cells and modules	• Number of Q.ANTUM solar cells/modules produced (number per year) • Annual renewable energy production (equivalent in GW) • Annual production capacity (in GW)
Acquisition of solar power generation assets and investments into energy retail business	• Installed capacity of renewable energy (MW) • Annual CO2 emission reduced or avoided (tonnes/ year) • Annual renewable energy production (MWh)
R&D of Green Hydrogen Electrolysis Technology by Chemical Division	• Information on their progress in R&D (such as the outline of projects participated in)
Acquisition and investment in assets for hydrogen storage and distribution	• Total storage capacity of hydrogen tanks (metric tonnes)

External Review

Sustainalytics, an external consultant, issued an opinion in March 2021 ("**Second Party Opinion**") regarding the alignment of the Framework with the 2018 ICMA GB Principles and 2018 LMA GL Principles. The Second Party Opinion is not a recommendation to buy, sell or hold any Green Financing Instruments and is only current as of the date that the Second Party Opinion was initially issued, and may be updated, suspended or withdrawn at any time. See "*Risk Factors—Risks Relating to the Bonds—The Bonds may not be a suitable investment for all investors seeking exposure to green assets*." The description of the Framework and the Second Party Opinion in this section should be read as a summary of the full Framework and the Second Party Opinion publicly available on the Group's website: www.hanwhasolutions.com/en/, which are not incorporated into, and do not form a part of, this Offering Circular.

THE ISSUER

Overview

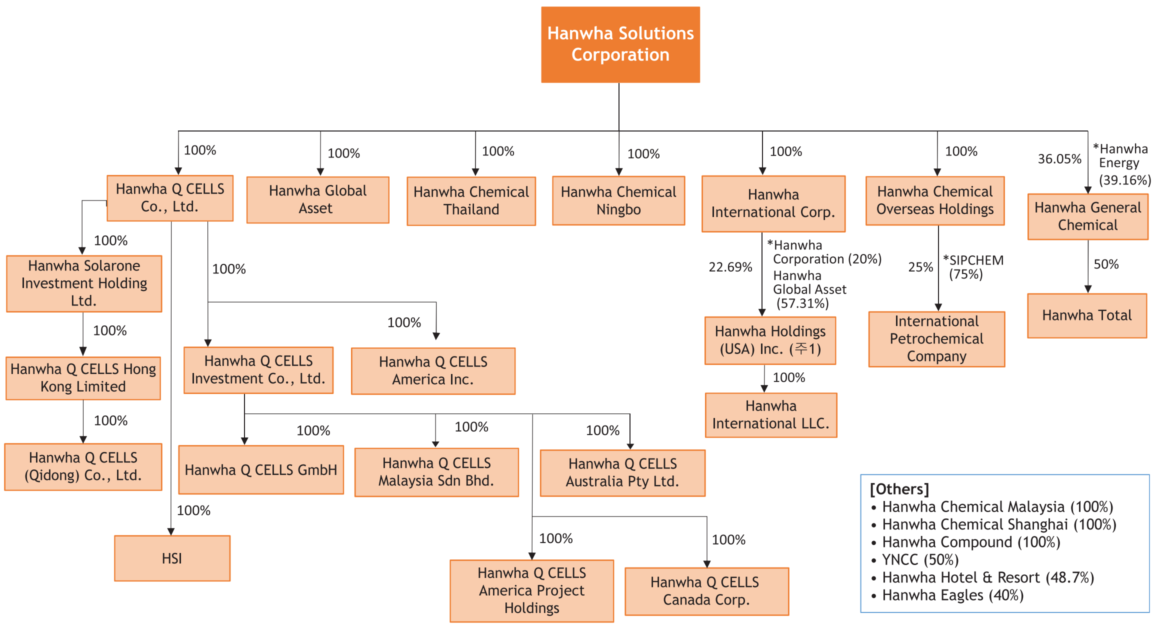
The Group is a leading solar power, chemical and advanced materials company based in Korea with a focus on providing sustainable energy and materials solutions to its customers. The Group's principal businesses are the manufacture of (i) solar energy solutions, including solar modules and energy solutions systems, (ii) petrochemical products, including polyolefin ("**PO**"), polyvinyl chloride ("**PVC**"), chlor-alkali ("**CA**") and toluene diisocyanate ("**TDI**"), and (iii) advanced materials, such as advanced lightweight composite, solar and electronic materials. In addition to these principal businesses, the Group has business interests in retail and real estate development.

The Group is committed to investing in research and development to harness the synergy of its businesses segments to find the next generation of sustainable energy and materials products and solutions. In January 2021, the Group expanded its renewable energy portfolio by establishing a hydrogen technology research centre, its fifth research centre in Korea and eighth globally. This followed the signing of a memorandum of understanding with the provincial government of Gangwon-do, Korea and Korea Gas Technology Corporation, a Government corporation, in December 2020 to develop a water electrolysis facility and hydrogen charging station capable of producing 290 tonnes of hydrogen annually in Gangwon-do, Korea by the end of 2022. In addition, in December 2020, the Group announced its acquisition of Cimarron Composites to expand its advanced materials offerings into high-pressure tanks used to store hydrogen. The acquisition is expected to enable the Group secure advanced technologies required for hydrogen tanks for vehicles, trailers, high-pressure tanks for charging stations and others.

The Issuer began as the chemical division of Korea Hwasung Plant in August 1965. In April 1974, the Issuer was incorporated as Hanyang Chemical Holdings Co., Ltd. and became a listed company on the Korea Exchange in June 1974. In 2018, Hanwha Advanced Materials Corporation merged with Hanwha Q CELLS to form Hanwha Q CELLS & Advanced Materials Corporation. On 1 January 2020, the Issuer (then, Hanwha Chemical Co., Ltd.) merged with its wholly-owned subsidiary Hanwha Q CELLS & Advanced Materials Corporation and emerged as the surviving entity. In connection with the merger, the Issuer was renamed as Hanwha Solutions Corporation.

As of 31 December 2020, the Issuer had over 188 consolidated subsidiaries and operations in over 21 countries and is a member company of the Hanwha Group (as defined below). The registered office of the Issuer is 86, Cheonggyecheon-ro, Jung-gu, Seoul 04541, Korea.

The following chart shows the corporate structure of the Group as of 31 December 2020.



Business

Q CELLS Division

The Group's Q CELLS Division emphasises providing solar energy solutions that are sustainable and affordable. The Group's major products and solutions consist of solar photovoltaic ("**PV**") cells, modules, energy solutions and energy retail, which capture the mid to down-stream value chains from solar energy production to commercialization. The Group's solar PV cells and modules are produced by processing raw materials such as polysilicon, ingots and wafers, which it acquires from external sources. Solar cells and solar modules, which are formed from assembling solar cells together, are central to the conversion of sunlight into energy for residential, commercial and industrial use. In recent years, the Group has expanded its downstream solar PV business which focuses on the commercialization of energy solutions systems.

The Group's solar energy business areas include solar modules, Energy Solution Systems ("**ESS**"), downstream activities and energy retail. Its solar module business area incorporates Q.ANTUM cell technology which supercharges solar modules to maximise their energy yield and generation, offering PV products at affordable prices. The Group's Q.HOME+ ESS provides solar energy storage solutions to residential customers with a need for durability and cost-efficiency. Through its downstream activities, the Group's solar power plants provide reliable energy sources at competitive costs. The Group's energy retail activities utilise Q.ENERGY technology to deliver self-sustaining power generation solutions to a wide range of customers.

Chemical Division

The Group's Chemical Division has consistently been recognised for its industry leading products. Major petrochemical raw materials manufactured and sold by the Group include PO, PVC, CA and TDI. PO is a polymer used in daily consumer packaging materials, such as container lids and plastic bags, as well as high-tech industrial materials. PVC is a general-purpose plastic and one of the most widely used types of plastic commonly found in industrial or household products, such as synthetic leather, packaging, flooring, toys and textiles. CA is an inorganic chemical used in products such as paper, textiles, metals, electricity and electronics, as well as for the treatment of water and various solvents. TDI feedstock is used in flexible polyurethane ("**PU**") foams, which are commonly used in bedding, furniture and other materials.

The Group was the first in Korea to manufacture low-density polyethylene ("**LDPE**") and linear low-density polyethylene ("**LLDPE**"), which are each types of PO, as well as PVC. It maintains the largest production facilities in Korea for LDPE and LLDPE, and the number one market share for LDPE. The Group has one of the largest production capacities in the world for ethylene-vinyl acetate ("**EVA**"), also a type of PO. The Group also has the largest production capacity for CA and the number one market share for TDI in Korea.

The Group's Chemical Division has been dedicated to the development of innovative and eco-friendly technology, processes and materials through its dedicated R&D centres. In particular, the Group's R&D centre located in Daedeok-gu, Daejeon, Korea conducts research on its own eco-friendly plasticizers Eco-DEHCH as well as the formulation of polymerization and other advanced chemical processes. Building on its over 30 years' experience in water electrolysis, the chemical process of decomposing hydrogen and oxygen gas from water, the Group has further ventured into the research and development of green hydrogen production through water electrolysis.

Advanced Materials

The Group's Advanced Materials Division is involved in the business of manufacturing composite materials for use in automotive, solar and electronic products. Its automotive materials are recognised for their light weight and strength, used in end products such as the underbody, bumper or seat panel of a car. The Group's primary solar materials include EVA sheets and backsheets, which are attached to solar cells and modules for their protection. LinkTron is the Group's branded flexible printed circuit board ("**FPCB**") used in electronic devices for its light weight and dense properties. StrongLite, a type of automotive material produced by compressing polypropylene resin and glass fibre mat, holds 70% of the global market share for glass fibre mat reinforced thermoplastics ("**GMT**"), which are polymers characterised by stiffness and strength. LinkTron holds the number one market share for domestic general-purpose FPCB material.

In December 2020, the Group announced its acquisition of Cimarron Composites to expand its advanced materials offerings into high-pressure tanks used to store hydrogen. The acquisition is expected to enable the Group secure advanced technologies required for hydrogen tanks for vehicles, trailers, high-pressure tanks for charging stations and others. Through the Advanced Materials Division's production facilities and R&D centres in Korea, North America, Europe and China, the Group continues to expand research on the production of high-quality advanced materials and sustainable products.

Others

The Group's other business segments comprise of retail and real estate development. The Group's retail operations are led by Hanwha Galleria, a premier fashion and department store business, which merged into the

Issuer on 1 April 2021. Real estate development efforts are led by Hanwha City Development, a wholly-owned subsidiary of the Issuer, and involve acting as a developer or shareholder for large scale land development projects.

Sales and Distribution Channels

The Group utilises domestic and overseas subsidiaries to sell it solar energy solutions, chemical products and advanced materials products. The Group's vast sales network spans across more than 40 countries in Europe, North America, Asia, South America, Africa and the Middle East. The Group's products and services are distributed through various channels, including direct channels and authorised dealerships for domestic sales, and direct and local export channels and affiliates for overseas sales.

Research and Development

The Group has established dedicated domestic and overseas research centres for the development of next generation renewable energy, chemical and advanced materials product manufacturing technology. The Group's Chemical Division has research centres in Daejeon and Seongnam, Korea. The Group's Advanced Materials Division has a research centre in Sejong, Korea. The Group's Q CELLS Division has research centres in Germany, Korea, China and Malaysia.

Intellectual Property

The Group relies on patents, licences and other intellectual property rights covering its chemical and advanced materials divisions. As of 31 December 2020, the Group's Chemical Division held 496 registered patents in Korea and 453 overseas patents. As of the same date, the Group's Advanced Materials Division held 334 registered patents in Korea, 14 overseas patents, 2 registered utility model rights and 12 registered designs.

Insurance

The Group maintains insurance to cover risks associated with the ordinary operation of its business, including industrial accidents, environmental liability insurance, as well as comprehensive property insurance for its headquarters and factory complexes. All of the Group's policies are underwritten with reputable insurance providers. The Group believes that its insurance coverage is similar in scope to those customary in the industries in which it operates.

Properties

The Group's registered office and headquarters are located at 86, Cheonggyecheon-ro, Jung-gu, Seoul 04541, Korea. In addition, the Group owns or leases various land and buildings for its subsidiaries, factory complexes and research and development facilities. The following table sets forth the Group's principal properties as of 31 December 2020:

Business Division	Company	Designation	Function	Location
Solar Energy	Hanwha Solutions Corp.	Seoul Office	Solar module and power plant sales	Seoul, Korea
		Facility	Solar cell/module production	Chungcheongbuk-do, Korea
		Facility	Solar module production	Chungcheongbuk-do, Korea
	Hanwha Global Asset Corp.	Facility	Solar module production	Georgia, USA
	Hanwha Q Cells Co., Ltd.	Headquarter	Solar module and power plant sales	Seoul, Korea
		Corporation	Solar module and power plant sales	14 locations (China, Germany, Australia, France, Chile, Turkey, etc.)
		Research Institute	Solar cell and module technology R&D	Thalheim, Germany
		Facility	Solar cell/module production	2 locations (Malaysia Cyberjaya, China Qidong)

Business Division	Company	Designation	Function	Location
Chemical	Hanwha Solutions Corp.	Headquarter	Petrochemical product sales	Seoul, Korea
		Yeosu Facility	EVA, LDPE, LLDPE, VCM, EDC, ECH, PVC, HDPE, caustic soda, chlorine, etc.	Jeollanam-do, Korea
			LDPE, LLDPE, etc.	Jeollanam-do, Korea
			Octanol, etc.	Jeollanam-do, Korea
			TDI	Jeollanam-do, Korea
		Ulsan Facility	EVA, LDPE, VCM, etc.	Ulsan, Korea
			PVC, PASTE, etc.	Ulsan, Korea
			Plasticizer, MA, PA, etc.	Ulsan, Korea
		Central Research Institute	Product research and development	Daejeon, Korea
		Corporation	Compound manufacturing, petrochemical/solar products sales, etc.	5 locations (Ningbo/ Shanghai China, Thailand, Malaysia, India)
		Branch	Overseas market research & headquarter sales activity support, etc.	3 locations (China, Shanghai, Beijing, and Guangzhou)
		Joint Venture	EVA, LDPE, etc.	3 locations (Saudi Arabia, Jubail, Riyadh, and Hail)
Advanced Materials	Hanwha Solutions Corp.	Seoul Headquarter	Automobile materials, electron material, solar material sales	Seoul, Korea
		Sejong Office	GMT, LWRT, EPP, SMC, LFT, FCCL, built-in automotive materials, PMC manufacturing	Sejong-si, Korea
		Eumseong Office	EVA sheet, Back sheet manufacturing	Chungcheongbuk-do, Korea
		Busan Office	High pressure tank	Busan, Korea
		Research Institute	Product research and development	Sejong-si, Korea
	Hanwha Global Asset Corp.	Sejong Headquarter	Holding company	Sejong-si, Korea
		Jinhae Office	Real estate business	Gyeongsangnam-do, Korea
		Corporation	GMT, LWRT, EPP, LFT manufacturing/sales	8 locations (USA Alabama/Virginia, Mexico, Czech, Germany, China Beijing/Shanghai/ Chongqing)
		Facility	GMT, LWRT, EPP manufacturing	2 locations (USA North Carolina/Michigan)
	Hanwha Compound Co., Ltd.	Yeosu Facility	COMPOUND product manufacturing	Jeollanam-do, Korea
		Daejeon R&D Team	Product research and development	Daejeon, Korea

Business Division	Company	Designation	Function	Location
Others (Retail)	Hanwha Galleria Co., Ltd.	Luxury Goods Store WEST	Department Store	Seoul, Korea
		Luxury Goods Store EAST	Department Store	Seoul, Korea
		Gwanggyo	Department Store	Gyeonggi-do, Korea
		Center City	Department Store	Chungcheongnam-do, Korea
		Jinju	Department Store	Gyeongsangnam-do, Korea
		Gourmet 494 Hannam	General merchandizing store	Seoul, Korea
	Hanwha Galleria Timeworld Co., Ltd.	Main Shop (Timeworld)	Department Store	Daejeon, Korea
		Joint Business Office	Joint Business Office	Chungcheongnam-do, Korea
		Maison Galleria	VIP Lounge	Daejeon, Korea
Others (Real Estate Development)	Hanwha City Development	Asan Techno Valley	Industry complex development	Chungcheongnam-do, Korea
		Seosan Techno Valley	Industry complex development	Chungcheongnam-do, Korea
		H Valley	Industry complex development	Gyeonggi-do, Korea
		Gimhae Techno Valley	Industry complex development	Gyeongsangnam-do, Korea
		Gyunggi Yongin Techno Valley	Industry complex development	Gyeonggi-do, Korea
		Anseong Techno Valley	Industry complex development	Gyeonggi-do, Korea
		Second Yongin Techno Valley	Industry complex development	Gyeonggi-do, Korea
		West Ochang Techno Valley	Industry complex development	Chungcheongbuk-do, Korea

Management and Employees

Management

The Issuer's board of directors has ultimate responsibility for the administration of the Issuer's affairs. The board currently comprises five standing directors and six outside directors. The Issuer has three management committees that serve under the board—the Audit Committee, Outside Director Nomination Committee and Related Party Transaction Committee.

- *Lee Koo Yung* serves as the CEO of the Group's Chemical Division. He previously served as executive manager of Hanwha Q CELLS, and received a bachelor's degree in political science and international relations from Yonsei University. Mr. Lee serves on the Related Party Transaction Committee.
- *Kim Hee Cheul* serves as the CEO of the Group's Q CELLS Division. He previously served as CEO of Hanwha Total Co., Ltd., and received an M.B.A. from Washington University in St. Louis.
- *Ryoo Duhyoung* serves as the CEO of the Group's Advanced Materials Division. He previously served as CEO of Hanwha Energy Corporation, and received a bachelor's degree in business administration from Seoul National University.
- *Kim Dong-Kwan* serves as the CEO of the Group's strategy division. He previously served as Chief Compliance Officer of Hanwha Q CELLS & Advanced Materials, and received a bachelor's degree in political science from Harvard University.
- *Kim Eun-Soo* serves as the CEO of the Group's Hanwha Galleria division. He previously served as operation team leader of Hanwha Group's management planning office, and received bachelor's and master's degrees in economics from the University of Colorado Boulder.

- *Choi Man-Gyu* serves as an outside director of the board. He previously served as head of the Woori Bank (China) Ltd. and received a bachelor's degree in agricultural economics from Konkuk University. Mr. Choi serves on the Audit Committee, Related Party Transaction Committee and Outside Director Nomination Committee.
- *Amanda Bush* serves as an outside director of the board. Ms. Bush is a partner at St. Augustine Capital Partners and received a J.D. from University of Texas School of Law.
- *Shima Satoshi* serves as an outside director of the board. Mr. Shima is a visiting professor at Tama University and previously served as advisor of Softbank Corporation.
- *Suh Jeong-Ho* serves as an outside director of the board. He is an attorney at Wiz Law Group and received a bachelor's in business administration from Seoul National University. Mr. Suh serves on the Related Party Transaction Committee and Outside Director Nomination Committee.
- *Park Ji-Hyung* serves as an outside director of the board. He is an economics professor at Seoul National University and received a Ph.D. in economics from the University of Wisconsin. Mr. Park serves on the Audit Committee, Related Party Transaction Committee and Outside Director Nomination Committee.
- *Lee Han-Joo* serves as an outside director of the board. He is the CEO of Bespin Global and was previously a co-founder and CEO of Hostway. He received a bachelor's degree in biology from the University of Chicago.

Employees

As of 31 December 2020, the Group had 5,462 full-time employees and 124 contract employees in Korea. The table below sets forth a breakdown of the Group's full-time and contract employees by business division in Korea.

Business Division	Full-time employees	Contract employees
Q CELLS	2,325	34
Chemical	2,483	60
Advanced Materials	654	30
Total	5,462	124

Legal and Regulatory Proceedings

At any given time, the Group may be subject to legal claims and regulatory actions against the Group in the ordinary course of its business. As of 31 December 2020, the aggregate amounts of claims brought against the Group totalled Won 68.0 billion relating to 32 cases.

As of the date of this Offering Circular, the Group is not currently involved in, nor is its management aware of any threat of, any litigation, regulatory proceeding or arbitration, the outcome of which would, in the reasonable judgment of its management, have a material adverse effect on its business, financial condition or results of operations.

Parent Company and the Hanwha Group

The Group is a subsidiary of Hanwha Corporation and a member company of the Hanwha Group, a group of companies affiliated with Hanwha Corporation. The Hanwha Group is not a legal entity but a reference to a group of such affiliated companies for the purposes of the Monopoly Regulation and Fair Trade Act of Korea.

Hanwha Corporation was founded in 1952 as Korea Explosives, and the Hanwha Group is the seventh largest business group in Korea in terms of combined assets as of 1 May 2020, according to the Korea Fair Trade Commission. As of 31 December 2020, the Hanwha Group consisted of 80 domestic companies, seven of which were listed on the KRX KOSPI Market or the KRX KOSDAQ Market, and 469 overseas companies. Hanwha Group had combined total sales of Won 50.9 trillion in 2020. The member companies of the Hanwha Group are divided into six major business areas: aerospace and mechatronics, chemicals and materials, solar energy, financial services, construction, and leisure and lifestyle.

The following table shows the major member companies of the Hanwha Group as of 31 December 2020:

Aerospace & Mechatronics	Chemicals & Materials	Solar Energy	Financial Services	Construction	Leisure & Lifestyle
Hanwha Corporation	Hanwha Solutions Corporation	Hanwha Solutions Corporation	Hanwha Life Insurance Co., Ltd.	Hanwha Engineering & Construction Corporation	Hanwha Hotels & Resorts Co. Ltd.
Hanwha Aerospace Co., Ltd.	Hanwha Total Petrochemical Co., Ltd.		Hanwha Asset Management Co., Ltd.		Hanwha Galleria Co., Ltd.
Hanwha Techwin Co., Ltd.	Hanwha General Chemical Co., Ltd.		Hanwha General Insurance Co., Ltd.		Hanwha Galleria Timeworld Co., Ltd.
Hanwha Systems Co., Ltd.	Yeochun NCC Co., Ltd.		Hanwha Investment & Securities Co., Ltd.		
Hanwha Defense Co., Ltd.			Hanwha Savings Bank Co., Ltd.		
Hanwha Power Systems Co., Ltd.					
Hanwha Precision Machinery Co., Ltd.					

INFORMATION ON THE GUARANTOR

1. OVERVIEW OF CGIF

1.1 Establishment

CGIF, a trust fund of the Asian Development Bank ("**ADB**"), was established by the 10 members of the Association of Southeast Asian Nations ("**ASEAN**") together with the PRC, Japan, Republic of Korea (the former all together as, "**ASEAN+3**") and the ADB in 2010. The 10 members of ASEAN consist of Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic ("**Lao PDR**"), Malaysia, Republic of the Union Myanmar, Philippines, Singapore, Thailand and Vietnam.

CGIF was established in November 2010 to promote economic development, stability and resilience of financial markets in the ASEAN+3 region (the "**Region**"). The main function of CGIF is to provide credit guarantees for local currency denominated bonds issued in the Region by corporations in the Region.

1.2 Shareholding Structure

CGIF's guarantees are backed by U.S.$1,105,200,000 of paid-in capital from its sovereign government contributors and ADB. Neither the ADB nor the other contributors are liable for the obligations of CGIF.

CGIF Shareholding Structure as at 31 January 2021

CGIF Contributors	Contribution (U.S. dollars)	Shareholding Percentage (%)
Japan	342,800,000	31.02%
People's Republic of China	342,800,000	31.02%
Asian Development Bank	180,000,000	16.29%
Republic of Korea	147,600,000	13.36%
Singapore	21,600,000	1.95%
Philippines	21,600,000	1.95%
Indonesia	15,600,000	1.41%
Malaysia	12,600,000	1.14%
Thailand	12,600,000	1.14%
Brunei Darussalam	5,600,000	0.51%
Vietnam	1,900,000	0.17%
Cambodia	200,000	0.02%
Lao PDR	200,000	0.02%
Republic of the Union Myanmar	100,000	0.01%
Total	**1,105,200,000**	**100.00%**

1.2.1 *Governance Structure*

CGIF has a governance structure comprising of oversight by the: (i) Meeting of Contributors; (ii) Board of Directors; and (iii) Board Committees (Internal Control and Risk Management, Nomination and Remuneration and Audit).

The Board of Directors is comprised of eight Contributor-appointed members, including the Chief Executive Officer. Each of the PRC and Japan are entitled to nominate two Directors. Korea is entitled to nominate one Director. One nomination each is entitled for the Asian Development Bank, and the ASEAN countries representing Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.

The Board of Directors is accountable and reports to the contributors of CGIF (the "**Contributors**") on the operations and performance of management and of CGIF.

Board of Directors	Members Represented
Mr. Yuchuan Feng	People's Republic of China
Mr. Zhengwei Zhang	People's Republic of China
Mr. Kenichi Aso (Chairman)	Japan
Ms. Mina Kajiyama	Japan
Mr. Taebum Kim	Republic of Korea
Mr. Mark Dennis Y.C. Joven	ASEAN-Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam
Mr. Stefan Hruschka	Asian Development Bank
Ms. Guiying Sun	CGIF Management

CGIF is led by an internationally recruited management team with experience in development banking, risk management, and credit assessment through senior positions in the Export-Import Bank of China, Asian Development Bank, Mitsubishi UFJ Financial Group, Bank of the Philippines Islands, Danajamin Nasional Berhad, Hong Leong Bank Berhad, Standard Chartered Bank, Citibank and Société Générale.

The executive decision-making powers of CGIF, and the day-to-day management of CGIF, are mandated and vested to the Chief Executive Officer. The Chief Executive Officer is recommended by the Board of Directors and approved by the Meeting of Contributors. She is the legal representative of CGIF. The Chief Executive Officer heads the management team currently comprising the Deputy CEO/Chief Risk Officer, Chief Credit-risk Officer, Vice President Operations, Chief Financial Officer, General Counsel and Board Secretary, Corporate Planner and Head of Budget, Planning, Personnel and Management Systems and Internal Auditor.

Name	Position
Ms. Guiying Sun	Chief Executive Officer
Mr. Mitsuhiro Yamawaki	Deputy CEO/Chief Risk Officer
Mr. Aarne Dimanlig	Chief Credit-risk Officer
Mr. Anuj Awasthi	Vice President Operations
Mr. Dong Woo Rhee	Chief Financial Officer
Mr. Gene Soon Park	General Counsel and Board Secretary
Mr. Hou Hock Lim	Corporate Planner and Head of Budget, Planning, Personnel and Management Systems
Ms. Jackie Jeong-Ae Bang	Internal Auditor

1.2.2 *Credit Strength*

CGIF is rated by international and domestic credit rating agencies.

Credit Rating Agency	Scale	Rating	Outlook	Date Reviewed
Standard & Poor's ("S&P")	Global Long Term /Short Term	AA / A-1+	Stable	26 February 2020
RAM Ratings	Global / ASEAN / National	gAAA / seaAAA / AAA	Stable	15 January 2021
MARC (Malaysian Rating Corporation Berhad)	National	AAA	Stable	17 December 2019
TRIS Ratings	National	AAA	Stable	30 October 2020
Fitch Ratings Indonesia	National	AAA	Stable	16 December 2020
Pefindo Credit Rating Agency	National	idAAA	Stable	23 July 2020

1.3 Guarantee Business

CGIF's guarantee portfolio is limited to a leverage ratio of 2.5 times of its paid in capital of U.S.$1,105,200,000[1] plus (a) retained earnings and reserves, less (b) net credit loss reserves and foreign exchange loss reserves, less (c) all illiquid assets. CGIF conducts its guarantee operations by adhering to its risk management framework consisting of: (i) credit and monitoring analysis; (ii) prudential limits to manage key credit, market, sector and currency risks; and (iii) guarantee underwriting policy.

[1] As of 31 January 2021

1.3.1 **Guarantee Portfolio**

As of 15 March 2021, CGIF has outstanding guarantees to the following bonds issuers in the ASEAN region:

Guarantee Issue Date	Bond Issuer	Bond Issuance Venue	Bond Issue Size[1]	% Guaranteed by CGIF	Bond Rating	Tenor
05-Mar-2021	JWD InfoLogistics Public Company Limited	Thailand	Thai Baht 700 million	100%	AAA (Fitch)	5 years
08-Jan-21	PT Ketrosden Triasmitra	Indonesia	IDR168 billion	100%	AAA (Pefindo)	5 years
08-Jan-21	PT Ketrosden Triasmitra	Indonesia	IDR415 billion	100%	AAA (Pefindo)	3 years
24-Dec-20	GLP Pte. Ltd.	Japan	JPY15.4 billion	100%	AA (S&P)	9 years
23-Apr-20	PRASAC Microfinance Institution PLC	Cambodia	KHR 127.2 billion	100%	Unrated	3 years
9-Apr-20	RMA (Cambodia) PLC	Cambodia	KHR 80 billion	100%	Unrated	5 years
10-Jan-20	Energy Absolute Public Company Ltd.	Thailand	THB 3.0 billion	50% (risk participation with ADB)	A (Tris Rating)	7 years
8-Jan-20	Thaifoods Group Public Company Limited	Thailand	THB 2.0 billion	100%	AAA (Tris Rating)	5 years
31-Dec-19	Vietnam Electrical Equipment Joint Stock Corporation	Vietnam	VND 1.15 trillion	100%	Unrated	10 years
24-Dec-19	Hong Phong 1 Energy JSC	Vietnam	VND 2.15 trillion	100%	Unrated	15 years
24-Dec-19	Hong Phong 1 Energy JSC	Vietnam	VND 400 billion	100%	Unrated	5 years
3-Dec-19	Nexus International School (Singapore) Pte Ltd.	Singapore	SGD 150 million	100%	AA (S&P)	12 years
25-Mar-19	CJ Logistics Asia Lte Ltd.	Singapore	SGD 70 million	100%	AA (S&P)	5 years
28-Jan-19	Refrigeration Electrical Engineering Corporation	Vietnam	VND 2.318 trillion	100%	Unrated	10 years
25-Jan-19	Yoma Strategic Holdings Limited	Thailand	THB 2.22 billion	100%	AAA (Tris Rating)	5 years
17-Dec-18	Boonthavorn Ceramic 2000 Co., Ltd.	Thailand	THB 2.0 billion	50%	AA+ (Tris Rating)	5 years
7-Dec-18	Siamgas and Petrochemicals Public Company Limited	Thailand	THB 2.0 billion	70%	A (Tris Rating)	5 years
16-Nov-18	Aeon Credit Service (Philippines) Inc.	Philippines	PHP 900 million	100%	Unrated	3 years
16-Nov-18	Aeon Credit Service (Philippines) Inc.	Philippines	PHP 100 million	100%	Unrated	5 years
5-Oct-18	Hoan My Medical Corporation	Vietnam	VND 930 billion	100%	Unrated	5 years
5-Oct-18	Hoan My Medical Corporation	Vietnam	VND 1.4 trillion	100%	Unrated	7 years
10-Sep-18	The PAN Group Joint Stock Company	Vietnam	VND 1.135 trillion	100%	Unrated	5 years
28-Feb-18	Siamgas and Petrochemicals Public Company Limited	Thailand	THB 2.0 billion	85%	A (Tris Rating)	5 years

Guarantee Issue Date	Bond Issuer	Bond Issuance Venue	Bond Issue Size[1]	% Guaranteed by CGIF	Bond Rating	Tenor
10-Jan-18	ASA Philippines Foundation, Inc.	Philippines	PHP 500 million	75%	Unrated	5 years
17-Nov-17	Mobile World Investment Corporation	Vietnam	VND 1.135 trillion	100%	Unrated	5 years
28-Jun-17	ASA Philippines Foundation, Inc.	Philippines	PHP 500 million	75%	Unrated	5 years
10-Feb-17	ASA Philippines Foundation, Inc.	Philippines	PHP 1.0 billion	75%	Unrated	5 years
18-Nov-16	KNM Group Berhad	Thailand	THB 2.78 billion	100%	AAA (Tris Rating)	5 years
7-Jul-16	Fullerton Healthcare Corporation Limited	Singapore	SGD 50 million	100%	AA (S&P)	7 years
7-Jul-16	Fullerton Healthcare Corporation Limited	Singapore	SGD 50 million	100%	AA (S&P)	5 years
8-Mar-16	AP Renewables, Inc.	Philippines	PHP 10.7 billion	Up to PHP 4.7 billion (risk participation with ADB)	Unrated	10 years
18-Feb-16	Vingroup Joint Stock Company	Vietnam	VND 1.95 trillion	100%	Unrated	5 years
18-Feb-16	Vingroup Joint Stock Company	Vietnam	VND 1.05 trillion	100%	Unrated	10 years
7-Oct-15	IVL Singapore Pte. Ltd., a subsidiary of Indorama Ventures Public Company Limited	Singapore	SGD 195 million	100%	AA (S&P)	10 years
5-Dec-2014	Masan Consumer Holdings Company Limited	Vietnam	VND 2.1 trillion	100%	Unrated	10 years
27-Nov-14	PT Professional Telekomunikasi Indonesia[2]	Singapore	SGD 180 million	100%	AA (S&P)	10 years

Notes:

(1) IDR refers to the Indonesian Rupiah, VND refers to the Vietnam Dong, SGD refers to the Singapore Dollar, THB refers to the Thailand Baht, PHP refers to the Philippine Peso, KHR refers to Cambodian Riel, and JPY refers to Japanese Yen.

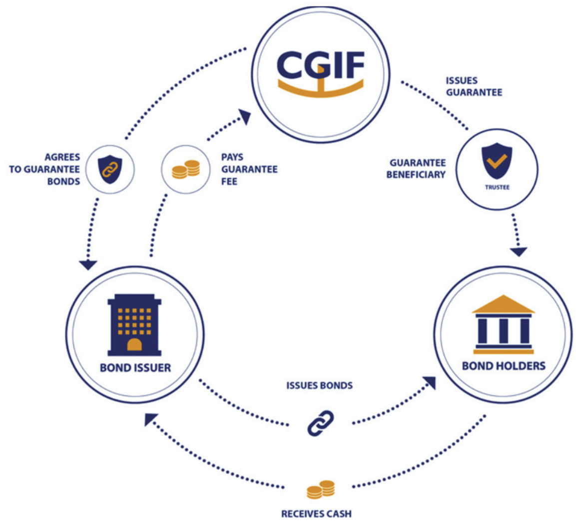
(2) Change of issuer of the bonds from Protelindo Finance B.V. to PT Professional Telekomunikasi Indonesia effective 3 August 2016.

1.3.2 *Guarantee Structure*

CGIF's bond guarantee operation is aimed at supporting ASEAN+3 corporations to access the Region's bond markets to achieve the following benefits:

- expand and diversify their sources of debt capital;
- raise funds in matching currencies and tenors;
- transcend country sovereign ceilings for cross-border transactions; and
- gain familiarity in new bond markets.

The guarantees issued by CGIF are irrevocable and unconditional commitments to pay bondholders upon non-payment by the issuers throughout the tenor of the bonds. This commitment is backed by CGIF's equity capital which has been fully paid-in by all of its contributors. CGIF's general bond guarantee structure is illustrated below.



**To ensure applicability of the guarantee in multiple jurisdictions in the ASEAN+3 countries, some variations to this structure may be incorporated to accommodate the established market norms.*

Bond issuances that can be considered for Guarantees are limited to the following parameters:

- Group exposure/single borrow limit is U.S.$221 million;
- bond tenor of up to 10 years (up to 15 years is possible, subject to credit quality and justifications);
- for foreign currency denominated issuance, the currency of issuance should be adequately hedged with the corporate entity's sales receipts, inward foreign currency remittances, or via financial hedge arrangements.

CGIF started its guarantee operations with a full guarantee for standard corporate bonds issued by corporations in the Region. With the experience gained from offering a full wrap guarantee, CGIF may also explore other alternatives including partial guarantees and other risk sharing mechanisms depending on the market opportunities and acceptability of such an arrangement. CGIF also intends to guarantee project bonds with longer tenors to help develop them in the relevant markets in the Region.

1.4 Capital and Liquidity Guidelines

CGIF has investment strategies and liquidity guidelines for the management of its capital resources, where investments are focused on low-risk and highly liquid assets, such as government-related securities and/or highly rated securities which are internationally rated "A+" or higher for long-term instruments issued by government related entities of CGIF contributor countries, "AA-" or higher for those issued by others, and "A-1" or higher for short-term instruments. In order for CGIF to raise enough funds in a contingent case where a guarantee is called, CGIF also implemented the following:

1. Quarterly Stress test, where CGIF tests funding capability by liquidating its investment portfolio in a stress environment.
2. Quarterly Liquidity Gap reports, where CGIF checks monthly cash surplus from all projected cash in/out flows related to all CGIF operations and activities.

1.5 Selected Financial Information

A summary of the statement of financial position, income statement, and cash flows as of, and for each of the years ended 31 December 2018 and 2019 have been extracted from the Guarantor Audited Financial Statements and presented as follows:

Statement of Financial Position Summary

	As of 31 December	
	2018	2019
	(in thousands of U.S. dollars)	
Statement of Financial Position:		
Assets:		
Cash	7,041	3,740
Investments	904,555	1,176,212
Accrued interest income	5,124	7,192
Guarantee fee receivable, net	39,944	65,647
Other assets, net	1,092	2,276
Total assets	**957,756**	**1,255,067**
Liabilities and Member's equity:		
Guarantee liability	44,358	73,204
Other liabilities	2,406	3,431
Total liabilities	**46,764**	**76,635**
Member's equity:		
Capital stock (Paid-in capital)	859,200	1,077,600
Unrealised loss in fair values of available for sale investments	(10,541)	15,337
Reserves & retained earnings	62,333	85,495
Total member's equity	**910,992**	**1,178,432**
Total liabilities and members' equity	**957,756**	**1,255,067**

Statement of Net Income and Comprehensive Income Summary

	As of 31 December	
	2018	2019
	(in thousands of U.S. dollars)	
Statement of Net Income:		
Guarantee fees	8,735	12,947
Interest income	19,742	26,177
Other income	424	2,760
Total revenue	29,531	41,884
Total expenses	12,061	19,287
Net operating income	17,470	22,597
Loss from foreign exchange	(613)	565
Net income	16,857	23,162
Statement of Comprehensive Income:		
Unrealised loss in fair values of available for sale	(1,161)	25,878
Total comprehensive income	**15,696**	**49,040**

Statement of Cash Flow Summary

	As of 31 December	
	2018	2019
	(in thousands of U.S. dollars)	
Statement of Cash Flow:		
Cash flows from operating activities		
Net cash used in operating activities	576	1,900
Cash flows from investment activities		
Net cash provided by investing activities	(156.329)	(223,432)
Cash flows from financing activities		
Net cash provided by financing activities	156,200	218,245
Effect of exchange rate changes on cash	(5)	(14)
Net (Decrease) Increase in cash	442	(3,301)
Cash at beginning of period	6,599	7,041
Cash at end of period	**7,041**	**3,740**

1.6 Audited Financial Statements for the Years ended 31 December 2018 and 2019

CGIF's financial statements are prepared and presented in accordance with IFRS and audited by Deloitte. The Independent Auditors' Report accompanying the Guarantor Audited Financial Statements are contained elsewhere in this Offering Circular.

All of the information on the Guarantor under this section has been provided by CGIF. Information in respect of the Issuer contained in this Offering Circular has not been verified by the Guarantor. None of the Guarantor, its management nor its employees take any responsibility, expressed or implied, for any information contained in this Offering Circular, other than the information contained in this Section entitled "*Information on the Guarantor*." In addition, none of the foregoing parties has taken any steps to verify the accuracy of any of the information included in this Offering Circular, other than the information contained in this Section entitled "*Information on the Guarantor*," and no representation or warranty, express or implied, is made by any such parties as to the accuracy or completeness of the information contained in this Offering Circular.

DESCRIPTION OF THE CGIF GUARANTEE

The following contains summaries of certain key provisions of the CGIF Guarantee and related provisions of the Trust Deed. Such statements do not purport to be complete and are qualified in their entirety by reference to the CGIF Guarantee and the Trust Deed. Defined terms used in this section shall have the meanings given to them in the CGIF Guarantee and the Trust Deed.

(a) GUARANTEED AMOUNTS

Pursuant to the CGIF Guarantee, CGIF will irrevocably and unconditionally guarantee to the Trustee the full and punctual payment of each Guaranteed Amount.

For the purposes of the CGIF Guarantee, "**Guaranteed Amount**" means:

- any Principal Amount and any Scheduled Interest which is overdue and unpaid (whether in whole or in part) by the Issuer under the Conditions and the Trust Deed;
- any Additional Accrued Interest; and
- any Trustee Expenses

(in each case as defined in the CGIF Guarantee).

The Guaranteed Amount does not include, and the CGIF Guarantee will not cover, any amounts that become payable under the Bonds on an accelerated basis at the instigation of the Issuer, including, without limitation, as a result of the Issuer's voluntary redemption of the Bonds (whether in full or in part) pursuant to Condition 7(b) (*Redemption for Tax Reasons*).

(b) MISSED PAYMENT EVENT

Subject to clause 2.1 (*Guarantee*) of the CGIF Guarantee and clauses 3.2 (*Missed Payment Event*) and 3.3 (*Acceleration*) of the Trust Deed, if a Missed Payment Event (as defined in "*Terms and Conditions of the Bonds*") has occurred and is continuing, CGIF shall pay the Guaranteed Amount relating to (1) the Missed Payment Event to the Guaranteed Party or to its order within thirty (30) calendar days of such Missed Payment Event, or (2) in the case of a CGIF Acceleration, within thirty (30) calendar days from the date of the CGIF Acceleration Notice, *provided that* (i) CGIF has required the Issuer to redeem the Bonds pursuant to Condition 7(c) of the Terms and Conditions of the Bonds and (ii) the Issuer has failed to redeem the Bonds within the prescribed period in accordance with the Conditions.

If CGIF fails to make a payment in accordance with the preceding paragraph, CGIF will pay interest on the overdue Guaranteed Amount (other than any Trustee Expenses) for the period from (and including) the date the relevant Non-Payment Event (as defined in "*Terms and Conditions of the Bonds*") occurred to (but excluding) the Guarantor Payment Date at the Guarantor Default Rate.

CGIF will pay interest on the overdue Trustee Expenses from the period from (and including) the date the relevant Non-Payment Event occurred to (but excluding) the Guarantor Payment Date at the rate of the Trustee's cost of funds, provided that the Trustee furnishes evidence as to its cost of funds to the reasonable satisfaction of CGIF.

Notwithstanding the above, following the receipt by CGIF of a Missed Payment Notice (as defined in the Trust Deed) in accordance the Trust Deed and at any time prior to the date on which a Guaranteed Amount is due for payment:

- if the CMU Lodging and Paying Agent subsequently receives payment in full or in part in respect of a Guaranteed Amount from a source other than CGIF, the CMU Lodging and Paying Agent shall as soon as reasonably practicable notify the Issuer, CGIF and the Trustee of such payment; and
- upon receipt of the notice referred to above, the obligation of CGIF to pay the Guaranteed Amount specified in the relevant Missed Payment Notice shall, in respect of any payment received in part, be reduced by the corresponding amount received by the CMU Lodging and Paying Agent or, in respect of any payment received in full, be terminated in respect of such payment due date.

(c) GUARANTEED PARTY ACCELERATION

The Trustee shall not take an Acceleration Step (as defined in the Trust Deed) unless CGIF has failed to make payment of a Guaranteed Amount such that a Non-Payment Event has occurred and is continuing (a "**Guaranteed Party Acceleration**"). Pursuant to the Trust Deed, neither the Trustee nor any Bondholder shall be entitled to take an Acceleration Step against the Issuer or CGIF unless a Guaranteed Party Acceleration has occurred and, in the event that any such Acceleration Step is taken in contravention of such provision, CGIF shall not be required to pay any amounts in respect of such Acceleration Step.

Upon the occurrence of a Guaranteed Party Acceleration and if the Guaranteed Amounts are not paid by the Issuer in accordance with these Conditions and the Trust Deed following such Guaranteed Party Acceleration, the Trustee may at its sole discretion and, if so requested in writing by holders of at least 25 per cent. of the aggregate principal amount of the outstanding Bonds or if so directed by an Extraordinary Resolution, shall (subject in each case to the Trustee having been indemnified and/or provided with security and/or pre-funded to its satisfaction in all cases) deliver in accordance with the Trust Deed a Guaranteed Party Acceleration Notice (as defined in "*Terms and Conditions of the Bonds*") in respect of the aggregate of the unpaid Guaranteed Amounts and the Guarantor Default Interest Amount (as defined in the CGIF Guarantee) (if any) to be paid by CGIF in accordance with the CGIF Guarantee.

(d) **LIMITED RIGHTS OF ACCELERATION**

The Trustee's and the Bondholders' acceleration rights against the Issuer and CGIF are limited pursuant to the Trust Deed, as described under "*Guaranteed Party Acceleration*" above. In particular, potential investors should note that the Trustee and the Bondholders are not permitted to accelerate upon the occurrence of any of the Events of Default set out in Condition 11 (*Events of Default*).

(e) **CGIF'S OBLIGATIONS UNDER THE CGIF GUARANTEE ARE NOT IMPACTED BY ITS OR THE ISSUER'S INSOLVENCY OR WINDING-UP**

CGIF has agreed under the CGIF Guarantee that its obligations will not be affected by any act, omission or thing of any kind which, but for the relevant provision set out in the CGIF Guarantee, would reduce, release or prejudice any of its obligations under the CGIF Guarantee including, among other things, in the event of any insolvency or similar proceedings affecting the Issuer or CGIF.

Investors should, however, note that the CGIF Guarantee is a secondary obligation only. In the event that the Issuer's obligations under the Bonds, the Trust Deed and/or the Agency Agreement (being the primary obligations which are the subject of the CGIF Guarantee) cease to exist for any reason (for example, because they are held to be void for lack of capacity or illegality) the Trustee and the Bondholders may not be able to make a claim under the CGIF Guarantee for any Guaranteed Amount. See "*Risk Factors—The obligations of the Guarantor under the CGIF Guarantee are secondary obligations only, dependent on the existence of the obligations of the Issuer under the Bonds*").

(f) **CGIF ACCELERATION**

At any time following the occurrence of a CGIF Acceleration, CGIF may at its discretion require the Issuer to redeem the Bonds in whole, but not in part only, at their outstanding principal amount, together with interest accrued but unpaid to the date fixed for redemption on giving not less than seven (7) nor more than fifteen (15) days' notice to the Issuer, the Trustee and the Agents, following which the Issuer shall immediately, or if the Issuer fails to do so CGIF may, give notice to the Bondholders, the Trustee and the CMU Lodging and Paying Agent (which notice shall be irrevocable).

A "**CGIF Acceleration**" occurs if the Issuer or CGIF notifies the Trustee immediately before the giving of such notice that:

(i) an Issuer Event of Default has occurred; or

(ii) a Missed Payment Event has occurred and is continuing and irrespective of whether or not CGIF has already paid any Guaranteed Amounts in respect of such Missed Payment Event; or

(iii) any term or provision of the Conditions, the Trust Deed or the Agency Agreement has been amended, modified, varied, novated, supplemented, superseded, waived or terminated without the prior written consent of the Guarantor as required pursuant to the terms of the CGIF Guarantee, Trust Deed or the Agency Agreement, as the case may be; and

CGIF has delivered a CGIF Acceleration Notice to the Trustee in accordance with the Trust Deed.

The CGIF Acceleration Notice will, among other things, contain a written notice that CGIF will pay all outstanding Guaranteed Amounts in respect of the Bonds on the date fixed for redemption.

(g) **REIMBURSEMENT AND INDEMNITY AGREEMENT**

The Issuer and the Guarantor have entered into a reimbursement and indemnity agreement which, among other things, specifies the payment of guarantee fees and other amounts in respect of the CGIF Guarantee and the basis on which amounts paid by the Guarantor under the CGIF Guarantee are to be reimbursed and indemnified by the Issuer.

TAXATION

The following summary is based on tax laws of Korea as in effect on the date of this Offering Circular, and is subject to changes in Korea laws, including changes that could have retroactive effect. The following summary does not take into account or discuss the tax laws of any countries other than Korea. Prospective purchasers in all jurisdictions are advised to consult their own tax advisers as to Korea or other tax consequence of the acquisition, ownership and disposition of the Bonds.

KOREAN TAXATION

The information provided below does not purport to be a complete summary of Korean tax law and practise currently applicable. Prospective investors who are in any doubt as to their tax position should consult with their own professional advisers.

The taxation of non-resident individuals and non-Korean corporations ("**Non-Residents**") depends on whether they have a "permanent establishment" (as defined under Korean law and applicable tax treaty) in Korea to which the relevant Korean source income is attributable or with which such income is effectively connected. Non-Residents without a permanent establishment in Korea are taxed in the manner described below. Non-Residents with permanent establishments in Korea are taxed in accordance with different rules.

Tax on Interest

Interest on the Bonds paid to Non-Residents (excluding payments to their permanent establishment in Korea) is exempt from income tax and corporation tax (whether payable by withholding or otherwise) pursuant to the Special Tax Treatment Control Law of Korea (the "**STTCL**"), so far as the Bonds fall within "foreign currency denominated bonds" under the STTCL and the issuance of the Bonds is deemed to be an overseas issuance under the STTCL. The term "foreign currency denominated bonds" in this context is not defined under the STTCL. In this regard, the Korean tax authority issued a ruling on 1 September 1990 to the effect that "Notes Issuance Facility, USCP, Euro CP and Banker's Acceptance, etc." are not treated as "foreign currency denominated bonds."

If the tax exemption under the STTCL referred to above were to cease to be in effect, the rate of income tax or corporation tax applicable to interest on the Bonds, for a Non-Resident without a permanent establishment in Korea, would be 14 per cent. of income. In addition, a tax surcharge called a local income tax would be imposed at the rate of 10 per cent. of the income tax or corporation tax (raising the total tax rate to 15.4 per cent.).

The tax is withheld by the payer of the interest.

The tax rates may be reduced by an applicable tax treaty, convention or agreement between Korea and the country of the recipient of the income. The relevant tax treaties are discussed below.

Tax on Capital Gains

Korean tax laws currently exclude from Korean taxation gains made by a Non-Resident without a permanent establishment in Korea from the sale of the Bonds to Non-Residents (other than to their permanent establishments in Korea). In addition, capital gains earned by Non-Residents with or without permanent establishments in Korea from the transfer taking place outside Korea of the Bonds are currently exempt from taxation by virtue of the STTCL, provided that the Bonds are foreign currency denominated bonds and the issuance of the Bonds is deemed to be an overseas issuance under the STTCL.

If the exclusion or exemption from Korean taxation referred to above were to cease to be in effect, in the absence of an applicable treaty reducing or eliminating tax on capital gains, the applicable rate of tax would be the lower of 11 per cent. (including local income tax) of the gross realisation proceeds and (subject to the production of satisfactory evidence of the acquisition cost and certain direct transaction costs of the relevant Bond) 22 per cent. (including local income tax) of the realised gain (i.e., the excess of the gross realisation proceeds over the acquisition cost and certain direct transaction costs) made. If such evidence shows that no gain (or a loss) was made on the sale, no Korean tax is payable. With respect to computing the above-mentioned 22 per cent. withholding tax (including local income tax) on the realised gain, please note that there is no provision under relevant Korean law for offsetting gains and losses or otherwise aggregating transactions for the purpose of computing the net gain attributable to sales of securities issued by Korean companies.

The purchaser or any other designated withholding agent of Bonds is obliged under Korean law to withhold the applicable amount of Korean tax and make payment thereof to the relevant Korean tax authority. Unless the seller can claim the benefit of an exemption from tax under an applicable tax treaty or on the failure of the seller to produce satisfactory evidence of his acquisition cost and certain direct transaction costs in relation to the instruments being sold, the purchaser or such withholding agent must withhold an amount equal to 11 per cent. (including local income tax) of the gross realisation proceeds. Any amounts withheld by the purchaser or withholding agent must be paid to the competent Korean tax office. The purchaser or withholding agent must pay any withholding tax no later than the tenth day of the month following the month in which the payment for the purchase of the relevant instruments occurred. Failure to transmit the withheld tax to the Korean tax authorities in time subjects the purchaser or the withholding agent to penalties under Korean tax laws. The Korean tax authorities may attempt to collect such tax from a Non-Resident who is liable for payment of any Korean tax on gains, as a purchaser or withholding agent who is obliged to withhold such tax, through proceedings against payments due to the Non-Resident from its Korean investments and the assets or revenues of any of the Non-Resident's branch or representative offices in Korea.

Inheritance Tax and Gift Tax

Korean inheritance tax is imposed upon (a) all assets (wherever located) of the deceased if at the time of his death he was domiciled in Korea or resided in Korea for at least 183 days immediately prior to his death and (b) all property located in Korea which passes on death (irrespective of the domicile of the deceased). Gift tax is imposed in similar circumstances to the above. The taxes are imposed if the value of the relevant property is above a certain limit and the rate varies from 10 per cent. to 50 per cent. according to the value of the relevant property and the identity of the persons involved. At present, Korea has not entered into any tax treaties regarding its inheritance or gift taxes.

Under Korean inheritance and gift tax laws, bonds issued by Korean corporations are deemed located in Korea irrespective of where they are physically located or by whom they are owned. Consequently, the Korean inheritance and gift taxes will be imposed on transfers of the Bonds by inheritance or gift. Bondholders should consult their personal tax advisers regarding the consequences of the imposition of the Korean inheritance or gift tax.

Stamp Duty and Securities Transaction Tax

No stamp, issue or registration duties will be payable in Korea by the Bondholders in connection with the issue of the Bonds except for a nominal amount of stamp duty on certain documents executed in Korea. No securities transaction tax will be imposed upon the transfer of the Bonds.

Tax Treaties

At the date of this Offering Circular, Korea has tax treaties with, inter alia, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, China, Czech Republic, Denmark, Egypt, Finland, France, Germany, India, Indonesia, Ireland, Italy, Japan, Luxembourg, Malaysia, Mexico, Mongolia, the Netherlands, New Zealand, Norway, Pakistan, Philippines, Poland, Republic of Fiji, Romania, Singapore, Spain, Sri Lanka, Sweden, Switzerland, Thailand, Tunisia, Turkey, the United Kingdom, the United States of America and Vietnam under which the rate of withholding tax on interest is reduced, generally to between 5 and 16.5 per cent. (including local income tax), and the tax on capital gains is often eliminated.

Each Bondholder should inquire whether he is entitled to the benefit of a tax treaty with respect to any transaction involving the Bonds. It is the responsibility of the party claiming the benefits of a tax treaty in respect of interest payments to file with the payer or the Issuer a certificate as to his country of tax residence. In the absence of sufficient proof, the payer or the Issuer, as the case may be, must withhold taxes in accordance with the above discussion.

In order to claim the benefit of a tax rate reduction or tax exemption available under the applicable tax treaties, a Non-Resident holder must submit to the payer of such Korean-sourced income an application (for reduced withholding tax rate, "application for entitlement to reduced tax rate" and in the case of exemption from withholding tax, "application for exemption" under a tax treaty along with a certificate of the Non-Resident holder's tax residence issued by a competent authority of the Non-Resident holder's residence country, subject to certain exceptions) as the beneficial owner ("**BO Application**"). Such application should be submitted to the withholding agent prior to the payment date of the relevant income. Subject to certain exceptions, where the relevant income is paid to an overseas investment vehicle (which is not the beneficial owner of such income) ("**OIV**"), a beneficial owner claiming the benefit of an applicable tax treaty with respect to such income must submit its BO Application to such OIV, which must submit an OIV report and a schedule of beneficial owners (together with the applicable BO Application and certificate of the non-resident holder's tax residence in case of exemption from withholding tax), to the withholding agent prior to the payment date of such income. Effective from 1 January 2020, an OIV that was not established for the purpose of unjustifiably reducing income tax liabilities in Korea and bears tax liabilities in the country of its residence is deemed to be a beneficial owner of Korean-sourced income for income tax purposes. The benefits under a tax treaty between Korea and the country of such OIV's residence will apply with respect to the relevant income paid to such OIV, subject to certain application requirements as prescribed by the Corporate Income Tax or Individual Income Tax Law. In the case of a tax exemption application, the withholding agent is required to submit such application (together with the applicable OIV report in the case of income paid to an OIV) to the relevant district tax office by the ninth day of the month following the date of the payment of such income.

At present, Korea has not entered into any tax treaties regarding its inheritance or gift taxes.

PRC CURRENCY CONTROLS RELATING TO RENMINBI

Current Account Items

Under PRC foreign exchange control regulations, current account items refer to any transaction for international receipts and payments involving goods, services, earnings and other frequent transfers.

Prior to July 2009, all current account items were required to be settled in foreign currencies with limited exceptions. Following progressive reforms, Renminbi settlement of imports and exports of goods and of services and other current account items became permissible nationwide in 2012.

Since July 2013, the procedures for cross-border Renminbi trade settlement under current account items have been simplified and trades through e-commerce can also be settled under in Renminbi under the current regulatory regime. A cash pooling arrangement for qualified multinational enterprise group companies was introduced in late 2014, under which a multinational enterprise group can process cross-border Renminbi payments and receipts for current account items on a collective basis for eligible member companies in the group. In addition, the eligibility requirements for multinational enterprise groups have been lowered and the cap for net cash inflow has been increased in September 2015.

The PBOC also permits enterprises in the China (Shanghai) Free Trade Pilot Zone ("**Shanghai FTZ**") to establish an additional cash pool in the local scheme in the Shanghai FTZ, but each onshore company within the group may only elect to participate in one cash pooling programme. In November 2016, PBOC Shanghai Headquarters further allowed banks in Shanghai to provide multinational enterprise groups with services of full-function onshore cash pooling, which will enable broader scope for utilising pooled cash.

The regulations referred to above are subject to interpretation and application by the relevant PRC authorities. Local authorities may adopt different practises in applying these regulations and impose conditions for settlement of current account items.

Capital Account Items

Under PRC foreign exchange control regulations, capital account items include cross-border transfers of capital, direct investments, securities investments, derivative products and loans. Capital account payments are generally subject to approval of, and/or registration or filing with, the relevant PRC authorities.

Until recently, settlement of capital account items, for example, the capital contribution of foreign investors to foreign invested enterprises in the PRC, was generally required to be made in foreign currencies. Under progressive reforms, foreign enterprises are now permitted to use Renminbi to settle all capital account items that can be settled in foreign currencies. Cross-border Renminbi payment infrastructure and trading facilities are being improved. Approval, registration and filing requirements specifically for capital account payments in Renminbi are being removed gradually.

PRC entities are also permitted to borrow Renminbi-denominated loans from foreign lenders (which are referred to as "**foreign debt**") and lend Renminbi-denominated loans to foreign borrowers (which are referred to as "**outbound loans**"), as long as such PRC entities have the necessary quota, approval or registration. PRC entities may also denominate security or guarantee arrangements in Renminbi and make Renminbi payments thereunder to parties in the PRC as well as other jurisdictions (which is referred to as "**cross-border security**"). Under current rules promulgated by SAFE and PBOC, foreign debts borrowed, outbound loans extended, and the cross-border security provided by a PRC onshore entity (including a financial institution) in Renminbi shall, in principle, be regulated under the current PRC foreign debt, outbound loan and cross-border security regimes applicable to foreign currencies. After piloting in the free trade zones, the PBOC and SAFE launched a nation-wide system of macro-prudential management on cross-border financing in 2016, which provides for a unified regime for financings denominated in both foreign currencies and Renminbi.

Since September 2015, qualified multinational enterprise groups can extend Renminbi-denominated loans to, or borrow Renminbi-denominated loans from, eligible offshore member entities within the same group by leveraging the cash pooling arrangements. The Renminbi funds will be placed in a special deposit account and may not be used to invest in stocks, financial derivatives, or non-self-use real estate assets, or purchase wealth management products or extend loans to enterprises outside the group. Enterprises within the Shanghai FTZ may establish another cash pool under the Shanghai FTZ rules to extend inter-company loans, although Renminbi funds obtained from financing activities may not be pooled under this arrangement.

The securities markets, specifically the Renminbi Qualified Foreign Institutional Investor ("**RQFII**") regime and the China Interbank Bond Market ("**CIBM**"), have been further liberalised for foreign investors. The PBOC has relaxed the quota control for RQFII, and has also expanded the list of eligible foreign investors in CIBM, removed quota restriction, and granted more flexibility for the settlement agents to provide the relevant institutions with more trading facilities (for example, in relation to derivatives for hedging foreign exchange risk). In May 2020, PBOC and SAFE promulgated the Provisions on the Administration of Domestic Securities and Futures Investment Funds of Foreign Institutional Investors (《境外机构投资者境内证券期货投资资金管理规定》) which came into effect on 6 June 2020, to further lift the restriction in relation to RQFII, including removing the investment quota for RQFII. And on 25 September 2020, CSRC, PBOC and SAFE promulgated Measures for the Administration of Domestic Securities and Futures Investment by Qualified Foreign Institutional Investors and RMB Qualified Foreign Institutional Investors (《合格境外机构投资者和人民币合格境外机构投资者境内证券期货投资管理办法》) which shall come into effect on 1 November 2020, to further relax access conditions, simplify application and expand the scope of investment.

Interbank foreign exchange market is also opening-up. In January 2016, CFETS set forth qualifications, application materials and procedure for foreign participating banks (which needs to have a relatively large scale of Renminbi purchase and sale business and international influence) to access the inter-bank foreign exchange market. In February 2020, CFETS issued Guidelines for Foreign Institutions Entering the Market in the Inter-bank Foreign Exchange Market (《银行间外汇市场境外机构入市指引》).

Recent reforms introduced were aimed at controlling the remittance of Renminbi for payment of transactions categorised as capital account items. There is no assurance that the PRC Government will continue to gradually liberalise the control over Renminbi payments of capital account item transactions in the future. The relevant regulations are relatively new and will be subject to interpretation and application by the relevant PRC authorities. Further, if any new PRC regulations are promulgated in the future which have the effect of permitting or restricting (as the case may be) the remittance of Renminbi for payment of transactions categorised as capital account items, then such remittances will need to be made subject to the specific requirements or restrictions set out in such rules.

SUBSCRIPTION AND SALE

Subject to the terms and conditions contained in a subscription agreement dated 13 April 2021 (the "**Subscription Agreement**") among the Issuer, the Guarantor and the Sole Lead Manager, the Sole Lead Manager, subject to and in accordance with the provisions of the Subscription Agreement, has agreed to subscribe and pay for, or procure subscriptions and payment for, the Bonds.

The Subscription Agreement provides that the Issuer has agreed to pay the Sole Lead Manager certain fees and commissions and to reimburse the Sole Lead Manager for certain of its expenses in connection with the initial sale and distribution of the Bonds, and the Issuer and the Guarantor will indemnify the Sole Lead Manager against certain liabilities in connection with the offer and sale of the Bonds of the relevant series. The Subscription Agreement provides that the obligations of the Sole Lead Manager are subject to certain conditions precedent, and entitles the Sole Lead Manager to terminate it in certain circumstances prior to payment being made to the Issuer.

The Sole Lead Manager and its subsidiaries and affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, principal investment, hedging, financing and brokerage activities. The Sole Lead Manager and certain of its subsidiaries or affiliates may have performed certain investment banking and advisory services for, and entered into certain commercial banking transactions with, the Issuer, the Guarantor or any other member of the Group and/or their respective subsidiaries and affiliates, from time to time, for which they have received customary fees and expenses. The Sole Lead Manager and its subsidiaries or affiliates may, from time to time, engage in transactions with and perform services for the Issuer, the Guarantor or any other member of the Group and/or their respective subsidiaries and affiliates in the ordinary course of their business.

The Sole Lead Manager and its affiliates may purchase any Bonds and be allocated Bonds for asset management and/or proprietary purposes but not with a view to distribution. The Sole Lead Manager and/or its affiliates will initially purchase a significant portion of the Bonds for asset management and/or proprietary purposes but not with a view to distribution and may therefore be able to exercise certain rights and powers on their own which will be binding on all holders. Additionally, this may reduce the liquidity of the Bonds in the secondary trading market. References herein to the Bonds being offered should be read as including any offering of the Bonds to the Sole Lead Manager and/or its affiliates acting in such capacity. In the ordinary course of their various business activities, the Sole Lead Manager and its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve securities and instruments of the Issuer or the Guarantor. Such persons do not intend to disclose the extent of any such investment or transactions otherwise than in accordance with any legal or regulatory obligation to do so.

The distribution of this Offering Circular, or any offering material, and the offering, sale or delivery of the Bonds is restricted by law in certain jurisdictions. Therefore, persons who may come into possession of this Offering Circular, or any offering material, are advised to consult with their own legal advisers as to what restrictions may be applicable to them and to observe such restrictions. This Offering Circular may not be used for the purpose of an offer or invitation in any circumstances in which such offer or invitation is not authorised.

No action has been or will be taken that would, or is intended to, permit a public offering of the Bonds, or the possession or distribution of this Offering Circular or any amendment or supplement thereto or any offering or publicity material relating to the Bonds, in any country or jurisdiction where action for that purpose is required.

The Sole Lead Manager may, from time to time, engage in transactions with and perform services for the Issuer or the Guarantor in the ordinary course of its business.

The Sole Lead Manager has represented, warranted and agreed that it has complied and will comply with all applicable laws and regulations in each country or jurisdiction in which it purchases, offers, sells or delivers Bonds or possesses, distributes this Offering Circular or any other offering material relating to the Bonds. Persons into whose hands this Offering Circular comes are required by the Issuer, the Guarantor and the Sole Lead Manager to comply with all applicable laws and regulations in each country or jurisdiction in which they purchase, offer, sell or deliver Bonds or possess, distribute or publish this Offering Circular or any other offering material relating to the Bonds, in all cases at their own expense.

Accordingly, the Bonds should not be offered or sold, directly or indirectly, and neither this Offering Circular nor any other offering material, circular, prospectus, form of application or advertisement in connection with the Bonds should be distributed or published in or from any jurisdiction, except in circumstances which will result in compliance with any applicable laws and regulations and will not, save as disclosed in this Offering Circular, impose any obligations on the Issuer, the Guarantor or the Sole Lead Manager.

If a jurisdiction requires that the offering be made by a licenced broker or dealer and the Sole Lead Manager or any of its affiliates is a licenced broker or dealer in that jurisdiction, the offering shall be deemed to be made by the Sole Lead Manager or its affiliate on behalf of the Issuer in such jurisdiction.

SELLING RESTRICTIONS

General

None of the Issuer, the Guarantor or the Sole Lead Manager makes any representation that any action will be taken in any jurisdiction by the Sole Lead Manager, the Issuer or the Guarantor that would permit a public offering of the Bonds and the CGIF Guarantee, or possession or distribution of the Offering Circular (in preliminary, proof or final form) or any other offering or publicity material relating to the Bonds and the CGIF Guarantee (including roadshow materials and investor presentations), in any country or jurisdiction where action for that purpose is required. The Sole Lead Manager is not authorised to make any representation or use any information in connection with the issue, subscription and sale of the Bonds and the CGIF Guarantee other than as contained in, or which is consistent with, the Offering Circular or any amendment or supplement to it.

United States

The Bonds and CGIF Guarantee have not been and will not be registered under the U.S. Securities Act of 1933, as amended (the "**Securities Act**") and may not be offered or sold within the United States except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act. The Sole Lead Manager has represented that it has not offered or sold, and has agreed that it will not offer or sell, any Bonds and the CGIF Guarantee constituting part of its allotment within the United States, and any offers and sales will be made in accordance with Rule 903 of Regulation S under the Securities Act. Accordingly, none of the Sole Lead Manager, its affiliates or any persons acting on their behalf have engaged in, or will engage in, any directed selling efforts with respect to the Bonds and the CGIF Guarantee. Terms used in these paragraphs have the meanings given to them by Regulation S.

In addition, until 40 days after the commencement of the offering of the Bonds and the CGIF Guarantee, an offer or sale of the Bonds or the CGIF Guarantee within the United States by any "dealer" (as defined in the Securities Act), whether or not participating in the offering, may violate the registration requirements of the Securities Act.

United Kingdom

The Sole Lead Manager has represented and agreed that:

(a) *Financial promotion:* it has only communicated or caused to be communicated and will only communicate or cause to be communicated any invitation or inducement to engage in investment activity (within the meaning of section 21 of the Financial Services and Markets Act 2000 (the "**FSMA**") received by it in connection with the issue or sale of any Securities in circumstances in which section 21(1) of the FSMA does not apply to the Issuer or the Guarantor; and

(b) *General compliance:* it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Securities in, from or otherwise involving the United Kingdom.

Singapore

The Sole Lead Manager has acknowledged that this Offering Circular has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, the Sole Lead Manager has represented, warranted and agreed that it has not offered or sold any Bonds or caused the Bonds to be made the subject of an invitation for subscription or purchase and will not offer or sell any Bonds or cause the Bonds to be made the subject of an invitation for subscription or purchase, and has not circulated or distributed, nor will it circulate or distribute, this Offering Circular or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the Bonds, whether directly or indirectly, to any person in Singapore other than (i) to an institutional investor (as defined in Section 4A of the SFA) pursuant to Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the Bonds and the CGIF Guarantee are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities or securities-based derivatives contracts (each term as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired such securities or securities-based derivatives contract pursuant to an offer made under Section 275 of the SFA except:

1. to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
2. where no consideration is or will be given for the transfer;
3. where the transfer is by operation of law;
4. as specified in Section 276(7) of the SFA; or
5. as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018 of Singapore.

Hong Kong

The Sole Lead Manager has represented and agreed that:

(a) it has not offered or sold and will not offer or sell in Hong Kong, by means of any document, any Bonds other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong (the "**SFO**") and any rules made under the SFO; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions Ordinance (Cap. 32) of Hong Kong (the "**C(WUMP)O**") or which do not constitute an offer to the public within the meaning of the C(WUMP)O; and

(b) it has not issued or had in its possession for the purposes of issue, and will not issue or have in its possession for the purposes of issue, whether in Hong Kong or elsewhere, any advertisement, invitation or document relating to the Bonds and the CGIF Guarantee, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to Bonds and the CGIF Guarantee which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made under the SFO.

Korea

The Bonds have not been and will not be registered under the Financial Investment Services and Capital Markets act of Korea. Accordingly, the Bonds may not be offered, sold or delivered, directly or indirectly, in Korea or to, or for the account or benefit of, any resident of Korea (as such term is defined under the Foreign Exchange Transactions Act of Korea and its Presidential Decree) or to others for re-offering or resale, directly or indirectly, in Korea or to any resident of Korea, except as otherwise permitted under applicable Korean laws and regulations. In addition, during the first year after the issuance of the Bonds, the Bonds may not be transferred to any resident of Korea other than a Korean Qualified Institutional Buyer (a "**Korean QIB**," as defined in the Regulation on Securities Issuance, Public Disclosure, etc. of Korea) who is registered with the Korea Financial Investment Association as a Korean QIB, provided that the amount of the Bonds acquired by such Korean QIBs in the primary market is limited to no more than 20% of the aggregate issue amount of the Bonds.

RATINGS

The Bonds are expected to be rated AA by S&P. A security rating is not a recommendation to purchase, hold or sell the Bonds inasmuch as such rating does not comment as to market price or suitability for a particular investor. There can be no assurance that the ratings will remain in effect for any given period or that the ratings will not be revised by the rating agencies in the future if, in their judgement, circumstances so warrant. See "*Risk Factors—Risks Relating to the Bonds—Credit ratings may not reflect all risks and the ratings assigned to the Bonds may be lowered or withdrawn in the future*."

GENERAL INFORMATION

1. **Listing**

Approval in-principle has been received from the SGX-ST for the listing and quotation of the Bonds on the Official List of the SGX-ST. The SGX-ST assumes no responsibility for the accuracy of any of the statements made or opinions or reports contained in this Offering Circular. Admission of the Bonds to the Official List of the SGX-ST is not to be taken as an indication of the merits of the Issuer, the Guarantor or the Bonds. The Bonds will be traded on the SGX-ST in a minimum board lot size of S$200,000 (or its equivalent in foreign currencies) for so long as the Bonds are listed on the SGX-ST and the rules of the SGX-ST so require.

The CGIF-Guaranteed Bonds issued by the Issuer are proposed to be issued under the AMBIF.

AMBIF is a policy initiative under the ABMI to create a nexus among domestic professional local currency bond markets in the region to help facilitate intraregional transactions through standardised bond and note issuance and investment processes.

AMBIF facilitates intraregional bond and note issuance and investment by creating common market practises; utilising a common document for submission, the Single Submission Form (the "**SSF**"); and highlighting transparent issuance procedures as documented in the implementation guidelines for each participating market, including Singapore.

AMBIF is expected to expand opportunities for issuers and investors: issuers can raise funds in local currencies in multiple locations in the region more easily, and investors can invest in local currency bonds more easily.

To be recognised as a bond or note issued under AMBIF (AMBIF Bond or Note), certain requirements need to be satisfied. These so-called AMBIF elements are summarised in the table below. Integral to AMBIF is the use of the SSF.

AMBIF Elements	Brief Description
Domestic Settlement	Bonds/notes are settled at a national central securities depository in ASEAN+3
Harmonised Submission Documents (Single Submission Form)	Common approach of submitting information as input for regulatory process(es) where approval or consent is required. Appropriate disclosure information needs to be included.
Registration or profile listing at ASEAN+3 (Place of continuous disclosure)	Information on bonds/notes and issuer needs to be disclosed continuously in ASEAN+3. Registration or listing authority function is required to ensure continuous and quality disclosure.
Currency	Bonds/notes are denominated in currencies normally issued in domestic bond markets of ASEAN+3
Scope of Issuer	Resident of ASEAN+3
Scope of Investors	Professional investors defined in accordance with applicable laws and regulations or market practise in each market in ASEAN+3

At this stage, the SSF, in conjunction with the AMBIF Implementation Guidelines, is accepted in seven jurisdictions in ASEAN+3: Hong Kong, China; Japan; Malaysia; the Philippines; Singapore; Thailand; and Cambodia. The region's other markets are expected to join as soon as they are ready.

The SSF, as the single and comprehensive issuance and disclosure document, has been modelled on the information memorandum used in international bond markets and its contents complies with the information and disclosure requirements of all participating markets, including those of Singapore.

The SSF has been recognised by the SGX and the MAS to serve as issuance documentation for bonds and notes issued to exempted classes of investors. As such, the documents and/or material in connection with the offer or sale, or invitation for subscription or purchase, of such bonds and notes may not be circulated or distributed, nor may such bonds and notes be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than: (i) to an institutional investor (under Section 274 of the SFA); (ii) to a relevant person pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA; or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provisions of the SFA. For such bonds and notes to be listed on the SGX, the application procedures and relevant listing requirements will need to be fulfilled by the relevant issuer of such bonds and notes.

The SSF is a public document and was created and is maintained by the ASEAN+3 Bond Market Forum (ABMF), a public sector-private sector forum under the guidance of the Asian Development Bank, in conjunction with the AMBIF Documentation Recommendation Board (ADRB), a group of bond market participating institutions and professionals in ASEAN+3 that support and represent best market practises. The template for the SSF is available for download from the ADB website.

2. **Authorisation**

The issue of the Bonds were authorised by a resolution of the board of directors of the Issuer passed on 1 April 2021. The Issuer has obtained all necessary consents, approvals and authorisations in connection with the issue and performance of the Bonds.

3. **Legal and Arbitration Proceedings**

Neither the Issuer nor any other member of the Group is or has been involved in any governmental, legal or arbitration proceedings, (including any such proceedings which are pending or threatened, of which the Issuer is aware), which may have, or have had during the 12 months prior to the date of this Offering Circular, a significant adverse effect on the financial position or profitability of the Issuer or the Group.

4. **Significant/Material Change**

There has been no material adverse change in the financial or trading position or prospects of the Issuer and the Group since the 31 December 2020.

5. **Auditor**

The Issuer Audited Financial Statements, which are included elsewhere in this Offering Circular, have been audited by Deloitte Anjin, as stated in its report appearing herein.

The Guarantor Audited Financial Statements, which are included elsewhere in this Offering Circular, have been audited by Deloitte, as stated in its report appearing herein.

6. **Documents available for Inspection**

Copies of the Issuer Audited Financial Statements, the Trust Deed and Agency Agreement will be available for inspection, at the specified offices of the CMU Lodging and Paying Agent during normal business hours upon prior written request for so long as any of the Bonds are outstanding.

APPENDIX A: FORM OF CGIF GUARANTEE

GUARANTEE AGREEMENT

DATED 19 APRIL 2021

CREDIT GUARANTEE AND INVESTMENT FACILITY,
a trust fund of the Asian Development Bank

and

CITICORP INTERNATIONAL LIMITED
as trustee for and on behalf of all Bondholders

relating to

CNY1,000,000,000 3.00 per cent. Guaranteed Green Bonds due 2024
issued by Hanwha Solutions Corporation

CONTENTS

THIS GUARANTEE (this **Agreement**) is dated 19 April 2021 and is made **BETWEEN**:

(1) **CREDIT GUARANTEE AND INVESTMENT FACILITY**, a trust fund of the Asian Development Bank with its office in Manila, the Philippines, as guarantor (**CGIF**); and

(2) **CITICORP INTERNATIONAL LIMITED** in its capacity as the trustee for and on behalf of the Bondholders (as defined below) (in this capacity, the **Guaranteed Party**)

(each a **Party** and collectively the **Parties**).

BACKGROUND:

(A) At the request of the Issuer (as defined below), CGIF has agreed, subject to the terms and conditions of this Agreement, to issue a guarantee in favour of the Guaranteed Party in respect of the Bonds (as defined below).

(B) It is intended that this Agreement takes effect as a deed notwithstanding the fact that a Party may only execute this Agreement under hand.

IT IS AGREED as follows:

1. INTERPRETATION

1.1 Definitions

In this Agreement:

Additional Accrued Interest means the amount of interest in respect of any Bond for the Additional Accrual Period at the Bond Interest Rate.

Additional Accrual Period means**,** where CGIF is required to pay any Guaranteed Amounts in respect of principal due on the Bond Maturity Date, the period from (and including) the Bond Maturity Date to (but excluding) the earlier of (1) the Guarantor Payment Date, and (2) the Non-Payment Event; or otherwise, on an acceleration of the redemption of the Bonds pursuant to Guaranteed Party Acceleration or CGIF Acceleration, the period from (and including) the immediately preceding Bond Interest Payment Date until the date of redemption upon such acceleration.

Agency Agreement has the meaning given to such term under the Bond Conditions.

Articles of Agreement means the articles of agreement of CGIF originally dated 11 May 2010 as amended on 27 November 2013, 31 May 2016, 23 May 2017, 31 May 2018 and 16 May 2019 (as may be further amended or supplemented from time to time).

Bond Certificates has the meaning given to the term **Certificate** under the Bond Conditions.

Bond Conditions has the meaning given to the term **Conditions** in the Trust Deed.

Bond Documents means the Subscription Agreement, the Trust Deed (including the Bond Conditions), the Agency Agreement, the Offering Circular, the Single Submission Form, and the Bond Certificates, in each case related to the issuance of the Bonds.

Bond Interest Payment Date has the meaning given to the term **Interest Payment Date** under the Bond Conditions.

Bond Interest Rate has the meaning given to the term **Rate of Interest** under the Bond Conditions.

Bond Maturity Date has the meaning given to the term **Maturity Date** under the Bond Conditions.

Bondholders has the meaning given to such term under the Bond Conditions.

Bonds means the CNY1,000,000,000 3.00 per cent. guaranteed green bonds due 2024 to be issued by the Issuer.

Business Day means a day (other than a Saturday or Sunday) on which banks are open for general business in Manila, New York, Singapore, Hong Kong and Seoul.

CGIF Assets means all property and assets of CGIF held in trust in accordance with the Articles of Agreement of CGIF and available from time to time to meet the liabilities of CGIF. For the avoidance of doubt, a CGIF Asset does not include any assets of the Asian Development Bank or any other contributors to CGIF.

CGIF Certificate means the certificate to be issued by CGIF to the Guaranteed Party certifying it has received (or waived receipt of) the documents and evidence set out in Schedule 1 (Conditions Precedent) to the Indemnity Agreement in form and substance satisfactory to CGIF, substantially in the form set out in Schedule 1 (Form of CGIF Certificate).

CGIF Guarantee means the guarantee provided by CGIF pursuant to, and subject to, the terms and conditions of this Agreement.

CNY means Renminbi, the lawful currency of the People's Republic of China in general circulation from time to time.

Governmental Agency means any government or any governmental agency, semi-governmental or judicial entity or authority (including, without limitation, any stock exchange or any self-regulatory organisation established under statute).

Guarantee Documents means this Agreement, the Indemnity Agreement, and any other document or agreement entered into between any of CGIF, the Issuer and the Guaranteed Party, as the case may be, in connection with any of those documents, designated as such by CGIF.

Guarantee Term has the meaning given to it in Clause 2.2 (*Term of this Guarantee*).

Guaranteed Amount has the meaning given to it in Clause 2.1 (*Guarantee*).

Guarantor Default Interest Amount means any amount payable by CGIF pursuant to Clause 3.3 (*Guarantor Default Interest*).

Guarantor Default Rate means the Bond Interest Rate plus two per cent. (2%) per annum.

Guarantor Payment Date means the date of actual receipt by the Guaranteed Party in respect of a Guaranteed Amount.

Indemnity Agreement means the reimbursement and indemnity agreement dated on or about the date of this Agreement between CGIF and the Issuer in connection with this Agreement.

Issue Date has the same meaning given to such term in the Bond Conditions.

Issuer means Hanwha Solutions Corporation, a company incorporated in the Republic of Korea under registration number 110111-0360935 and with registered office at 86 Cheonggyecheon-ro, Hanwha Building, Jung-gu, Seoul, Republic of Korea.

Missed Payment Event means the non-payment (not taking into account any grace period) of any Guaranteed Amount by the Issuer in accordance with the Bond Conditions and/or the Trust Deed.

Non-Payment Event means the occurrence of an Event of Default (as defined under the Bond Conditions) 30 calendar days after the occurrence of a Missed Payment Event in accordance with Condition 11(a)(i) (*Non-payment*) of the Bond Conditions.

Paid Guaranteed Amount has the meaning given to it in Clause 4.1 (*Subrogation*).

Principal Amount means the outstanding principal amount in respect of the Bonds at any time.

Scheduled Interest means scheduled interest on the Bonds payable at the Bond Interest Rate on each Bond Interest Payment Date (excluding, for the avoidance of doubt, default interest).

Security means a mortgage, charge, pledge, lien or other security interest securing any obligation of any person or any other agreement or arrangement having a similar effect.

Single Submission Form means the single submission form (being the Common Document for Submission to Regulatory, Listing, and Registration Authorities, and Market Institutions for the Issuance of Notes under the ASEAN+3 Multi-Currency Bond Issuance Framework) prepared by the Issuer in connection with the issue of the Bonds, as the same may have been amended or supplemented from time to time.

Subscription Agreement means the subscription agreement entered into between, among others, the Issuer, CGIF and Standard Chartered Bank on or about the date of this Agreement in relation to the Bonds.

Subsidiary has the meaning given to such term under the Bond Conditions.

Tax means any tax, levy, impost, duty or other charge or withholding of a similar nature (including any related penalty or interest).

Tax Deduction means a deduction or withholding for or on account of Tax from a payment under this Agreement.

Trust Deed means the trust deed entered into between, among others, the Issuer, the Guaranteed Party and CGIF on or about the date of this Agreement in relation to the Bonds.

Trustee Expenses means the remuneration, costs, charges, expenses and interests and claims for reimbursement and indemnification due and payable to the Guaranteed Party in accordance with the Trust Deed and the remuneration, costs, charges, expenses and interests and claims for reimbursement and indemnification due and payable to the agents named in the Agency Agreement relating to the Bonds in accordance with such Agency Agreement.

1.2 Construction

(a) In this Agreement, terms not defined herein have the meaning as set out in the Bond Conditions and unless the contrary intention appears, a reference to:

(i) an **amendment** includes a supplement, novation, extension (whether of maturity or otherwise), restatement, re-enactment or replacement (however fundamental and whether or not more onerous) and **amended** will be construed accordingly;

(ii) **assets** includes present and future properties, revenues and rights of every description;

(iii) a **Clause**, a **Subclause,** a **Paragraph** or a **Schedule** is a reference to a clause, subclause of, or paragraph of, or a schedule to, this Agreement;

(iv) a currency is a reference to the lawful currency for the time being of the relevant country;

(v) a **Bond Document** or other document or Security includes (without prejudice to any prohibition on or consent required for any amendments) any amendment to that Bond Document or other document or Security;

(vi) a provision of law is a reference to that provision as extended, applied, amended or re-enacted and includes any subordinate legislation;

(vii) a **Party** or any other person includes its successors in title, permitted assigns and permitted transferees;

(viii) a **person** includes any individual, company, corporation, unincorporated association or body (including a partnership, trust, fund, joint venture or consortium), government, state, agency, organisation or other entity whether or not having separate legal personality;

(ix) a **regulation** includes any regulation, rule, official directive, request or guideline (whether or not having the force of law but, if not having the force of law, being of a type with which any person to which it applies is accustomed to comply) of any governmental, inter-governmental or supranational body, agency, department or regulatory, self-regulatory or other authority or organisation;

(x) a **successor** shall be construed so as to include an assignee or successor in title of such party and any person who under the laws of its jurisdiction of establishment, incorporation or domicile has assumed the rights and obligations of such party under this Agreement or to which, under such laws, such rights and obligations have been transferred;

(xi) a time of day is a reference to Manila time;

(xii) the **winding-up**, **dissolution** or **administration** of a company or corporation shall be construed so as to include any equivalent or analogous proceedings under the law of the jurisdiction in which such company or corporation is established or incorporated or any jurisdiction in which such company or corporation carries on business including the seeking of liquidation, winding-up, reorganisation, dissolution, administration, arrangement, adjustment, protection or relief of debtors; and

(xiii) **including** means including without limitation, and **includes** and **included** shall be construed accordingly.

(b) Unless the contrary intention appears, a reference to a **month** or **months** is a reference to a period starting on one day in a calendar month and ending on the numerically corresponding day in the next calendar month or the calendar month in which it is to end, except that:

(i) if the numerically corresponding day is not a Business Day, the period will end on the next Business Day in that month (if there is one) or the preceding Business Day (if there is not);

(ii) if there is no numerically corresponding day in that month, that period will end on the last Business Day in that month; and

(iii) notwithstanding subparagraph (i) above, a period which commences on the last Business Day of a month will end on the last Business Day in the next month or the calendar month in which it is to end, as appropriate.

(c) The headings in this Agreement are provided for convenience only and do not affect the construction or interpretation of any provision of this Agreement.

2. GUARANTEE

2.1 Guarantee

(a) Subject to the provisions of this Agreement, CGIF irrevocably and unconditionally guarantees to the Guaranteed Party the full and punctual payment of each Guaranteed Amount. CGIF undertakes with each Guaranteed Party that whenever the Issuer does not pay any Guaranteed Amount when due, CGIF shall immediately pay that amount under the procedures as stipulated under this Agreement, including but not limited to Clause 3 (*Payment under the Guarantee*).

Subject to this Clause 2.1, in this Agreement, **Guaranteed Amount** means:

(i) any Principal Amount and any Scheduled Interest which is overdue and unpaid (whether in whole or in part) by the Issuer under the Bond Conditions and the Trust Deed;

(ii) any Additional Accrued Interest; and

(iii) any Trustee Expenses.

(b) For the avoidance of doubt, a Guaranteed Amount does not include any increased costs, tax related indemnity (but for the avoidance of doubt includes any additional amounts required to be paid to the Bondholders due to a tax deduction and the operation of Condition 9 (*Taxation*) of the Bond Conditions, provided that the Guaranteed Amount will only include the original amount which would have been due from the Issuer if no tax deduction were required), default interest, fees, or any other amounts other than any Principal Amount, any Scheduled Interest, any Additional Accrued Interest and any Trustee Expenses payable by the Issuer to the Guaranteed Party or any Bondholders.

(c) If the Bonds become payable on an accelerated basis:

(i) as a result of the Guaranteed Party declaring the Bonds payable on an accelerated basis, CGIF shall pay any Guaranteed Amounts in accordance with clause 3.3 (*Acceleration*) of the Trust Deed; and/or

(ii) as a result of CGIF exercising its rights pursuant to Condition 7(c) (*Redemption in the event of a CGIF Acceleration*) of the Bond Conditions,

CGIF shall pay any Guaranteed Amount in accordance with Clause 3.2 (*Payment of Guaranteed Amount*).

(d) Notwithstanding any other provision of this Agreement, CGIF shall have no obligation to pay any amounts pursuant to this Agreement where the relevant amount of principal or accrued but unpaid interest became payable under the Bond Conditions on an accelerated basis at the instigation of the Issuer, including, without limitation, as a result of the Issuer's voluntary redemption of the Bonds (whether in full or in part) prior to the Bond Maturity Date.

2.2 Term of the Guarantee

(a) The Guarantee shall be effective as of the first date on which both (i) the Issue Date has taken place and (ii) CGIF has issued the CGIF Certificate.

(b) Subject to Clauses 2.8 (*Reinstatement*) and 10.2 (*Termination*), the CGIF Guarantee will expire on the earlier of:

(i) the date on which all Guaranteed Amounts have been paid, repaid or prepaid in full, or the payment obligations of the Issuer in respect of all Guaranteed Amounts have been otherwise discharged or released pursuant to the Bond Documents or any other arrangement between the Issuer and the Guaranteed Party; and

(ii) the date of full redemption, prescription or cancellation of the Bonds

(such period of effectiveness of the CGIF Guarantee being the **Guarantee Term**).

2.3 Continuing guarantee

This Guarantee is a continuing guarantee and will extend to the ultimate balance of all Guaranteed Amounts payable by the Issuer under the Bond Documents, regardless of any intermediate payment or discharge in whole or in part or where the payment of a Guaranteed Amount has been made but further Guaranteed Amounts are still due and payable or whether the Bonds are outstanding.

2.4 Guaranteed Amounts following amendments to the Bond Documents

If, without the prior written consent of CGIF, the Guaranteed Party concurs in any amendment, modification, variation, novation, waiver or termination of any term of a Bond Document, CGIF will irrevocably and unconditionally guarantee to the Guaranteed Party the Guaranteed Amount as per the terms of the Bond Documents and this Agreement in force as at the date of this Agreement or as amended in accordance with the prior written consent of CGIF from time to time.

2.5 Limited recourse

Notwithstanding any other provisions of this Agreement or any Bond Document, the recourse of the Guaranteed Party against CGIF under this Agreement and any Bond Document is limited solely to the CGIF Assets. The Guaranteed Party acknowledges and accepts that it only has recourse to the CGIF Assets and it has no recourse to any assets of Asian Development Bank or any other contributors to CGIF. Any obligation under this Agreement of CGIF shall not constitute an obligation of Asian Development Bank or any other contributors to CGIF.

2.6 No personal liability of Asian Development Bank or any other contributors to CGIF

Notwithstanding any other provisions of this Agreement or any Bond Document, neither the Asian Development Bank nor any other contributors to CGIF or the officers, employees or agents of the Asian Development Bank or any contributor to CGIF shall be subject to any personal liability whatsoever to any third party including the Guaranteed Party in connection with the operation of CGIF or under this Agreement, any Bond Document or any Guarantee Document. No action may be brought against Asian Development Bank as the trustee of CGIF or as contributor to CGIF or against any other contributors to CGIF or any of their respective officers, employees or agents by any third party including the Guaranteed Party in connection with this Agreement.

2.7 Waiver of defences

The obligations of CGIF under this Agreement will not be affected by and shall remain in force notwithstanding any act, omission, event or thing of any kind which, but for this provision, would reduce, release or prejudice any of its obligations under this Agreement. This includes, without limitation:

(a) any time, waiver or any other concession or consent granted to, or composition with, any person;

(b) the taking, variation, compromise, exchange, renewal or release of, or refusal or neglect to perfect, take up or enforce, any rights against, or Security over assets of, any person;

(c) any failure to realise the full value of any Security;

(d) any incapacity, or lack of power, authority or legal personality of any person;

(e) any termination, amendment, variation, novation, replacement or supplement of or to a Bond Document or any other document or Security relating thereto, but subject to Clauses 2.4 (*Guaranteed Amounts following amendments to the Bond Documents*) and 8.1 (*No amendment to Bond Documents*) hereof;

(f) any unenforceability, illegality or, invalidity of any obligation of any person under any Bond Document or any other document or Security, connected solely to any issues related to foreign currency transferability and convertibility affecting payment obligations of the Issuer under the Bond Documents;

(g) any insolvency or similar proceedings affecting CGIF or the Issuer;

(h) any change in the taxation status of CGIF or the Issuer; or

(i) the replacement of the Guaranteed Party as trustee for and on behalf of the Bondholders.

2.8 Reinstatement

If any discharge, release or arrangement (whether in respect of the obligations of the Issuer and/or CGIF or any Security (if any) for those obligations or otherwise) is made by the Guaranteed Party in whole or in part in respect of a Guaranteed Amount on the basis of any payment, Security (if any) or other disposition which is avoided or must be restored in insolvency, liquidation, administration or otherwise, then the liability of CGIF under Clauses 2 (*Guarantee*) and 3 (*Payment under the Guarantee*) will continue or be reinstated as if the discharge, release or arrangement had not occurred.

2.9 Additional Security

This Agreement is in addition to and is not in any way prejudiced by any other Security in respect of the Issuer's obligations under the Bond Documents now or subsequently held by the Guaranteed Party (or any trustee or agent on its behalf).

2.10 Pari Passu Ranking

Without limiting any other provision contained in this Agreement or any other Bond Documents, CGIF's payment obligations under this Agreement are direct, unconditional and general obligations of CGIF and rank at least *pari passu* with the claims of all its other unsecured and unsubordinated creditors, except for obligations mandatorily preferred by law (if any).

3. PAYMENT UNDER THE GUARANTEE

3.1 General

CGIF agrees that the Guaranteed Party is not required to proceed against, enforce any other rights or security, or claim payment from any person before claiming from CGIF under this Agreement, irrespective of any law or any provision of any Bond Document to the contrary, provided that CGIF shall only be required to make payments to the Guaranteed Party in accordance with the terms of this Agreement and the Bond Conditions.

3.2 Payment of Guaranteed Amount

Subject to Clause 2.1 (*Guarantee*) of this Agreement, and clauses 3.2 (*Missed Payment Event*) and 3.3 (*Acceleration*) of the Trust Deed, if a Missed Payment Event has occurred and is continuing, CGIF shall pay the Guaranteed Amount relating to (1) the Missed Payment Event to the Guaranteed Party or to its order within thirty (30) calendar days of such Missed Payment Event, or (2) in the case of a CGIF Acceleration, within thirty (30) calendar days from the date of the CGIF Acceleration Notice, *provided that*, (i) CGIF has required the Issuer to redeem the Bonds pursuant to Bond Condition 7(c) (*Redemption in the event of a CGIF Acceleration*) and (ii) the Issuer has failed to redeem the Bonds within the prescribed period in accordance with the Bond Conditions.

3.3 Guarantor Default Interest

(a) Subject to paragraph (b) below, if CGIF fails to make a payment in accordance with Clause 3.2 (*Payment of Guaranteed Amount*), CGIF will pay interest on the overdue Guaranteed Amount (other than any Trustee Expenses) for the period from (and including) the date the relevant Non-Payment Event occurred to (but excluding) the Guarantor Payment Date at the Guarantor Default Rate.

(b) CGIF will pay interest on the overdue Trustee Expenses from the period from (and including) the date the relevant Non-Payment Event occurred to (but excluding) the Guarantor Payment Date at the rate of the Trustee's cost of funds, provided that the Trustee furnishes evidence as to its cost of funds to the reasonable satisfaction of CGIF.

4. SUBROGATION AND TRANSFERS

4.1 Subrogation

(a) Immediately upon the receipt by the Guaranteed Party under this Agreement of all or any part of the Guaranteed Amount in accordance with this Agreement (a **Paid Guaranteed Amount**), CGIF shall be subrogated to:

(i) all of the rights, powers and remedies of the Guaranteed Party, on behalf of the Bondholders, and of the Bondholders themselves, in respect of the Bonds and each Bond Document (in each case, to the extent relating and proportionate to that Paid Guaranteed Amount), against any relevant person, including (and to the extent relating and proportionate to that Paid Guaranteed Amount) any rights or claims, whether accrued, contingent or otherwise; and

(ii) all of the Guaranteed Party's privileges, rights and Security against the Issuer or with respect to the Bonds, in each case insofar as they extend to an amount equal to that Paid Guaranteed Amount.

(b) The Guaranteed Party shall use its reasonable endeavours to, at the written request and expense of CGIF, execute such instruments or documents and take such other actions as CGIF may require to give effect to, facilitate or evidence the subrogation referred to in this Clause 4 and to perfect the rights of CGIF to receive such amounts equal to the Paid Guaranteed Amount under the Bond Documents.

(c) For the avoidance of doubt, no Bondholder shall be obliged to transfer or assign any rights or any legal title in the Bonds, except to the extent that it has received payment of any amounts from CGIF in respect thereof.

4.2 Transfer

(a) Upon the receipt by the Guaranteed Party of a Paid Guaranteed Amount, the Guaranteed Party shall, to the extent available to it, at the written request and the expense of CGIF and in consideration of such payment:

(i) transfer and assign, free from any Security, to CGIF all its rights:

(A) under the Bond Documents; and

(B) in respect of any Security securing the Bonds or any other amounts payable under the Bond Documents (including any right, title and interest to any asset which has arisen as a result of enforcement of such Security),

insofar as those rights relate and are proportionate to that Paid Guaranteed Amount; and

(ii) execute such instruments or documents and take such other actions as necessary for CGIF to give effect to, facilitate or evidence the transfer and assignment referred to in this Clause 4 and to perfect the rights of CGIF to receive such amounts equal to the Paid Guaranteed Amount under the Bond Documents.

(b) The Guaranteed Party shall not do anything that could lessen or impair any of the rights referred to in subparagraph (a)(i) above, CGIF's rights of subrogation or any other right of CGIF to recover any Paid Guaranteed Amount, unless the Guaranteed Party is acting in accordance with the terms of the Trust Deed.

5. APPLICATION OF FUNDS AND RECOVERIES

5.1 Application of funds

Following payment by CGIF of any Paid Guaranteed Amount or payment by CGIF under this Agreement of all or any part of the Guarantor Default Interest Amount pursuant to the terms of this Agreement, the

Guaranteed Party must hold such amounts on trust for itself and the Bondholders on the terms set out in the Trust Deed and must (as soon as practicable after receipt) apply them in or towards payment of the Guaranteed Amount(s) relating to such Paid Guaranteed Amount in accordance with the terms of the Trust Deed.

5.2 Recoveries

(a) After the occurrence of a Missed Payment Event, if the Guaranteed Party recovers any money or asset from the Issuer or any other person in respect of any Guaranteed Amount relating to that Missed Payment Event (a **Recovered Amount**), the Guaranteed Party must as soon as reasonably practicable (and in any case within ten calendar days from the date of its receipt of such Recovered Amount) supply details of the recovery to CGIF and pay to CGIF (or any other person at the instruction of CGIF) an amount equal to such Recovered Amount.

(b) Following payment by CGIF of any Paid Guaranteed Amount, if CGIF discovers that the Guaranteed Party had no right to receive a payment of the relevant Guaranteed Amount (or any portion thereof) to which such Paid Guaranteed Amount relates, CGIF shall be entitled, upon notice to the Guaranteed Party, to recover from the Guaranteed Party the relevant payment (or the relevant portion thereof) to the extent that the Guaranteed Party still holds such amounts itself or to its order (and provided only that it has the ability to direct the payment of the relevant amounts).

(c) To the extent any part of a Guaranteed Amount has been recovered from any source (it being recognised that the Guaranteed Party is under no duty whatsoever to seek to recover from any such source), the Guaranteed Party may not seek to recover such amounts from CGIF under this Agreement.

6. TAXES

6.1 CGIF shall make all payments to be made by it under this Agreement without any Tax Deduction, unless a Tax Deduction is required by law. If a Tax Deduction is required by law to be made by CGIF, the amount of the payment due from CGIF under this Agreement shall be increased to an amount which (after making the relevant Tax Deduction) would result in the recipient receiving an amount equal to the payment which would have been due if no Tax Deduction had been required, except that no increased payment shall be payable by CGIF in respect of any Bond:

(a) held by a Bondholder which is liable to such taxes, duties, assessments or governmental charges in respect of payments made by CGIF by reason of its having some connection with the jurisdiction by which such taxes, duties, assessments or charges have been imposed, levied, collected, withheld or assessed other than the mere holding of the Bond; or

(b) where (in the case of a payment of principal or interest on redemption) the relevant Certificate is surrendered for payment more than thirty (30) days after the Relevant Date except to the extent that the relevant Bondholder would have been entitled to such increased payment if it had surrendered the relevant Certificate on the last day of such period of thirty (30) days.

For these purposes **Relevant Date** means whichever is the later of (1) the date on which the payment in question first becomes due and (2) if the full amount payable has not been received by the Principal Paying Agent or the Trustee on or prior to such due date, the date on which (the full amount having been so received) notice to that effect has been given to the Bondholders.

6.2 If CGIF is aware that it must make a Tax Deduction (or that there is a change in the rate or the basis of a Tax Deduction), it must promptly notify the Guaranteed Party.

6.3 If CGIF is required to make a Tax Deduction, it must make the minimum Tax Deduction allowed by law and must make any payment required in connection with that Tax Deduction within the time allowed by law.

6.4 Nothing in this Clause 6 shall be considered to constitute a waiver of the privileges, immunities and exemptions applicable to CGIF pursuant to the Articles of Agreement.

7. PAYMENTS

7.1 Payment by CGIF and other Parties

(a) A payment by CGIF of a Paid Guaranteed Amount or a payment by CGIF under this Agreement of all or any part of the Guarantor Default Interest Amount in accordance with this Agreement will discharge the payment obligations of CGIF under this Agreement to the extent of such payment, whether or not such payment is properly applied by or on behalf of the Guaranteed Party.

(b) All payments to be made by a Party under this Agreement must be made on the due date for payment in immediately available funds to such account as the receiving Party may direct such account to be notified by the receiving Party to the other Party at least five Business Days prior to the relevant due date for payment.

7.2 Currency

All payments to be made by a Party under this Agreement must be made in the currency in which the amounts are incurred in relation to costs, fees, expenses, liabilities and other indemnities.

7.3 Certificates and determinations

Any certification, determination or notification by a Party of a rate or amount made pursuant to the terms of this Agreement will be, in the absence of manifest error, conclusive evidence of the matters to which it relates.

7.4 Business Days

If a payment under this Agreement is due on a day which is not a Business Day, the due date for that payment will instead be the preceding Business Day.

8. AMENDMENTS AND WAIVERS

8.1 No amendment to Bond Documents

The Guaranteed Party shall not, without the prior written consent of CGIF, concur in any amendment, modification, variation, novation, waiver or termination of any term of a Bond Document to which it is a party unless in accordance with clause 12.1 (*Waiver and Modification*) of the Trust Deed and Condition 15(b) (*Modification and waiver*) of the Bond Conditions.

8.2 Amendments

Any term of this Agreement may be amended or waived with the written agreement of the Parties and the Issuer.

8.3 Waivers and remedies cumulative

(a) The rights and remedies of each Party under this Agreement:

  (i) may be exercised as often as necessary;

  (ii) are cumulative and not exclusive of its rights and remedies under the general law; and

  (iii) may be waived only in writing and specifically.

(b) No delay in exercising or non-exercise by a Party of any right or remedy under this Agreement shall operate as a waiver of that right or remedy, nor shall any single or partial exercise of any right or remedy prevent any further or other exercise or the exercise of any other right or remedy other than where any rights (including, without limitation, the right to require payment of any Guaranteed Amount) are to be exercised in accordance with specified requirements under this Agreement.

9. ASSIGNMENT OR TRANSFER

No Party may assign or transfer any of its rights and obligations under this Agreement without the prior consent of the other Party except that:

(a) CGIF may assign or transfer any of its rights and benefits under this Agreement (including its right of subrogation) to any person without the prior written consent of the Guaranteed Party or any other person; and

(b) the Guaranteed Party may assign or transfer any of its rights and obligations under this Guarantee to any replacement trustee duly appointed in accordance with the Trust Deed.

10. TERMINATION

10.1 Except as otherwise provided in Clause 2.5 (*Limited recourse*), Clause 2.6 (*No personal liability of the Asian Development Bank or any other contributors to CGIF*), Clause 4 (*Subrogation and Transfers*), Clause 16 (*Governing Law*), Clause 17 (*Dispute Resolution*) and Clause 18 (*ADB and CGIF Immunities*), all rights and obligations of each Party will cease and expire on the last day of the Guarantee Term.

10.2 Termination or expiry of the Guarantee pursuant to the terms of this Agreement is without prejudice to the rights of any Party which have accrued prior to such termination or expiry, whether arising under this Agreement, at law or otherwise.

11. SET-OFF

No Party may set off any obligation owed to it by the other Party under this Agreement against any obligation owed by it to that other Party.

12. SEVERABILITY

If a term of this Agreement is or becomes illegal, invalid or unenforceable in any respect under any jurisdiction, it shall not affect:

(a) the legality, validity or enforceability in that jurisdiction of any other term of this Agreement; or

(b) the legality, validity or enforceability in other jurisdictions of that or any other term of this Agreement.

13. COUNTERPARTS

This Agreement may be executed in any number of counterparts. This has the same effect as if the signatures on the counterparts were on a single copy of this Agreement.

14. NOTICES

14.1 In writing

(a) Any communication in connection with this Agreement must be in writing, with copy sent to the Issuer, and, unless otherwise stated, may be given:

(i) in person, by post or fax; or

(ii) to the extent agreed by the Parties making and receiving communication, by email or other electronic communication.

(b) For the purpose of this Agreement, an electronic communication will be treated as being in writing.

(c) Unless it is agreed to the contrary, any consent or agreement required under this Agreement must be given in writing.

14.2 Contact details

(a) The contact details of CGIF for all notices in connection with this Agreement are:

Address:	Asian Development Bank Building, 6 ADB Avenue, Mandaluyong City, 1550 Metro Manila, Philippines
Telephone:	+632-8683-1340
Fax number:	+632-8683-1377
Email:	hsc.cnh.myr@cgif-abmi.org
Attention:	CEO and Vice President, Operations

(b) The contact details of the Guaranteed Party for all notices in connection with this Agreement are:

Address:	20th Floor, Citi Tower One Bay East 83 Hoi Bun Road Kwun Tong, Kowloon Hong Kong
Fax number:	+852 2323 0279
Attention:	Agency & Trust

(c) The contact details of the Issuer for all notices in connection with this Agreement are:

Address:	86, Cheonggyecheon-ro Jung-gu Seoul 04541, South Korea
Fax number:	+82 2 729 2021
Email:	woojoon.chung@hanwha.com
Attention:	Woojoon Chung; Manager, International Finance Team

(d) Any Party may change its contact details by giving five (5) Business Days' notice to the other Party.

(e) Where a Party nominates a particular department or officer to receive a communication, a communication will not be effective if it fails to specify that department or officer.

14.3 Effectiveness

(a) Except as provided below, any communication in connection with this Agreement will be deemed to be given as follows:

(i) if delivered in person, at the time of delivery;

(ii) if posted, five Business Days after being deposited in the post, postage prepaid, in a correctly addressed envelope;

(iii) if by fax, when received in legible form; and

(iv) if by e-mail or any other electronic communication, when received in legible form.

(b) A communication given under paragraph (a) above but received on a non-working day or after business hours in the place of receipt will only be deemed to be given on the next working day in that place.

(c) A communication to CGIF will only be effective on actual receipt by it.

14.4 English Language

(a) Any notice given in connection with this Agreement must be in English.

(b) Any other document provided in connection with this Agreement must be:

(i) in English; or

(ii) in the language of the jurisdiction in which the Bonds are issued, accompanied by a certified English translation. In this case, the English translation prevails unless the document is a statutory or other publicly available official document.

15. CONTRACTS (RIGHTS OF THIRD PARTIES) ACT 1999

Unless expressly provided to the contrary in a Guarantee Document, a person who is not a party to a Guarantee Document may not enforce any of its terms under the Contracts (Rights of Third Parties) Act 1999 and, notwithstanding any term of any Guarantee Document, no consent of any third party is required for any amendment (including any release or compromise of any liability) or termination of any Guarantee Document. Notwithstanding the foregoing, the Asian Development Bank and other contributors to CGIF, and any of their respective officers, employees or agents may enforce Clauses 2.5 (*Limited recourse*), 2.6 (*No personal liability of the Asian Development Bank or any other contributors to CGIF*), 17.2(j) (*Arbitration*) and 18 (*ADB and CGIF Immunities*) of this Agreement.

16. GOVERNING LAW

This Agreement and any non-contractual obligations arising out of or in connection with this Agreement shall be governed by English law.

17. DISPUTE RESOLUTION

17.1 Governing Law

This Clause 17 and any non-contractual obligations arising out of or in connection with it shall be governed by English law.

17.2 Arbitration

(a) Any dispute, claim, difference or controversy arising out of, relating to, or having any connection with this Agreement (which includes this Clause 17) and any Guarantee Document other than this Agreement, including any dispute as to their existence, validity, interpretation, performance, breach or termination, or the consequences of their nullity and any dispute relating to any non-contractual obligations arising out of or in connection with them (for the purpose of this Clause 17, a **Dispute**), shall be referred to and be finally resolved by arbitration administered by the Singapore International Arbitration Centre (**SIAC**) under the Arbitration Rules of the SIAC in force when the Notice of Arbitration is submitted (for the purpose of this Clause 17, the **Rules**).

(b) The Parties further agree that following the commencement of arbitration, and following the exchange of the Notice of Arbitration and Response to the Notice of Arbitration, they will initially attempt in good faith to resolve the Dispute through mediation at the Singapore International Mediation Centre (**SIMC**), in accordance with the SIAC-SIMC Arb-Med-Arb Protocol (the **Protocol**) for the time being in force which shall last for a period not exceeding sixty-five (65) Business Days from the commencement of the mediation proceedings (the **Mediation Period**). Where a settlement has been reached between the Parties within the Mediation Period, such terms of settlement shall be referred to the arbitral tribunal and the arbitral tribunal may make a consent award on such agreed terms. In the absence of a settlement by the Parties within the Mediation Period, the Dispute shall revert back to arbitration pursuant to the Protocol. Unless otherwise agreed by the Parties, the arbitration shall resume by arbitrators who were not involved in the mediation process above.

(c) The Rules and the Protocol are incorporated by reference into this Clause 17 and capitalised terms used in this Clause 17 (which are not otherwise defined in this Agreement or any Guarantee Document) shall have the meaning given to them in the Rules and the Protocol.

(d) The number of arbitrators shall be three. The claimant(s) shall nominate one arbitrator. The respondent(s) shall nominate one arbitrator. The arbitrators nominated by the parties in accordance with the Rules shall jointly nominate the third arbitrator who, subject to confirmation by the President of the Court of Arbitration of SIAC (the **President**), will act as president of the arbitral tribunal. If the third arbitrator is not chosen by the two arbitrators nominated by the parties within 30 days of the date of appointment of the later of the two party-appointed arbitrators to be appointed, the third arbitrator shall be appointed by the President.

(e) The seat of arbitration shall be Singapore and all hearings shall take place in Singapore unless the arbitral tribunal in its absolute discretion decides that a different location will be appropriate.

(f) Except as modified by the provisions of this Clause 17 and the Rules, Part II of the International Arbitration Act (Cap. 143A) of Singapore shall apply to any arbitration proceedings commenced under this Clause 17. Neither party shall be required to give general discovery of documents, but may be required only to produce specific, identified documents which are relevant to the Dispute.

(g) The language used in the arbitral proceedings shall be English. All documents submitted in connection with the proceedings shall be in the English language, or, if in another language, accompanied by an English translation and in which case, the English translation shall prevail.

(h) Service of any Notice of Arbitration made pursuant to this Clause 17 shall be made in accordance with the Rules and at the addresses given for the sending of notices under this Agreement at Clause 14 (Notices).

(i) The arbitration award(s) rendered by the arbitral tribunal shall be final and binding on the parties. To the fullest extent permitted under any applicable law, the parties irrevocably exclude and agree not to exercise any right to refer points of law or to appeal to any court or other judicial authority.

(j) The arbitral tribunal and any emergency arbitrator appointed in accordance with the Rules shall not be authorized to order, and the Guaranteed Party agrees for itself and on behalf of each Bondholder that it shall not seek from the arbitral tribunal or any judicial authority:

  (i) any order of whatsoever nature against the Asian Development Bank and other contributors to CGIF, and any of their respective officers, employees or agents; or

  (ii) any interim order to sell, attach, freeze or otherwise enforce against the CGIF Assets.

(k) The Rules shall not prohibit CGIF from disclosing any information relating to any arbitral proceedings and/or arbitral award arising out of this Clause 17 to the board of directors of CGIF (the **CGIF Board**) as part of its approval process and portfolio administration, or to the Asian Development Bank or any other contributors to CGIF or any of their respective officers, employees, advisers, agents or representatives. The members of the CGIF Board may seek instructions from their constituents for the purpose of CGIF Board approval and portfolio administration and the Board documents and other relevant information may be distributed to any representatives of the relevant member countries of CGIF for the said purpose only, provided that such information and documents distributed by the CGIF Board insofar as they relate to any arbitral proceedings and/or arbitral award shall be clearly marked "CONFIDENTIAL".

18. ADB AND CGIF IMMUNITIES

Nothing in this Agreement, or any agreement, understanding or communication relating to this Agreement (whether before or after the date of this Agreement), shall constitute or be construed as an express or implied waiver, renunciation, exclusion or limitation of any of the immunities, privileges or exemptions accorded to the Asian Development Bank under the Agreement Establishing the Asian Development Bank, any other international convention or any applicable law, or accorded to CGIF under the Articles of Agreement.

THIS AGREEMENT has been executed as a deed by the Parties hereto and is intended to be and is hereby delivered on the date first above written.

SCHEDULE 1

FORM OF CGIF CERTIFICATE

To: Citicorp International Limited in its capacity as the trustee for and on behalf of the holders of the Bonds (as defined below) (in this capacity the **Guaranteed Party**).

From: Credit Guarantee and Investment Facility, a trust fund of the Asian Development Bank **(CGIF)**

Copy: Hanwha Solutions Corporation (the **Issuer**)

Date: ____________________

Dear Sirs,

Hanwha Solutions Corporation (the Issuer) – Reimbursement and Indemnity Agreement dated __________ 2021 (the Indemnity Agreement) between the Issuer and CGIF in connection with the up to CNY1,000,000,000 3.00 per cent. Guaranteed Green Bonds due 2024 issued by Hanwha Solutions Corporation (the Bonds)

I refer to the Indemnity Agreement and the guarantee agreement dated __________ 2021 between CGIF and the Guaranteed Party (the **Guarantee Agreement**).

I am a duly authorised officer of CGIF. I am authorised to give this certificate and certify that CGIF has received (or waived receipt of) all of the documents and evidence set out in schedule 1 (*Conditions Precedent*) to the Indemnity Agreement in form and substance satisfactory to CGIF.

This also serves as notification to the Guaranteed Party in accordance with Clause 2.2 (*Term of this Guarantee*) of the Guarantee Agreement that the guarantee pursuant to the Guarantee Agreement is in effect, subject to the issuance of the Bonds, and to the Issuer that CGIF has no objection to the issuance of the Bonds.

Unless we notify you to the contrary in writing, you may assume that this certificate remains true and correct.

This certificate, and any non-contractual obligations arising out of or in connection with it, shall be governed by and construed in accordance with English law.

For

CREDIT GUARANTEE AND INVESTMENT FACILITY,
a trust fund of the Asian Development Bank

____

Name:
Title:

SIGNATORIES

CGIF

EXECUTED as a **DEED** by	)
CREDIT GUARANTEE AND	)
INVESTMENT FACILITY,	)
a trust fund of the Asian Development Bank	)
and **SIGNED** and **DELIVERED** as a **DEED**	)
on its behalf by	)

____

In the presence of:

Witness' signature:

....

Witness' name:

....

Witness' address:

....

....

....

THE GUARANTEED PARTY

CITICORP INTERNATIONAL LIMITED
SEALED with the **COMMON SEAL** of /)
EXECUTED as a **DEED** by the)
GUARANTEED PARTY)
and signed by / in the presence of / acting by)

By: ___________________________________
Name:
Title:

In the presence of:

Witness' signature:

....

Witness' name:

....

Witness' address:

....

....

....

INDEX TO THE FINANCIAL STATEMENTS

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Independent Auditors' Report

English Translation of Independent Auditors' Report Originally Issued in Korean on March 15, 2021

To the Shareholders and the Directors of
Hanwha Solutions Corporation:

Audit Opinion

We have audited the consolidated financial statements of Hanwha Solutions Corporation and its subsidiaries (the "Group") , which comprise the consolidated statements of financial position as of December 31, 2020 and December 31, 2019, respectively, and the consolidated statements of comprehensive income, consolidated statements of changes in shareholders' equity and consolidated statements of cash flows, for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the financial position of the Group as of December 31, 2020 and December 31, 2019, respectively, and its financial performance and its cash flows for the years then ended in accordance with Korean International Financial Reporting Standards ("K-IFRSs").

Basis for Audit Opinion

We conducted our audits in accordance with the Korean Standards on Auditing ("KSAs"). Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Consolidated Financial Statements* section of our report. We are independent of the Group in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in the Republic of Korea, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Key Audit Matter

The key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current year. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Valuation of Impairment to Goodwill.

The principal considerations that led us to determine that the matter is a Key Audit Matter

As disclosed in note 17 to the consolidated financial statements, as of December 31, 2020, Goodwill allocated to cash-generated unit (hereinafter referred to as "CGU") related to Hanwha Q CELLS Co., Ltd. and its subsidiaries (hereinafter referred to as "HQCL") is KRW 234,579 million, which is significant to the consolidated financial statements of the Group. .

Annually, the Group performs an impairment test of the HQCL CGU in accordance with K-IFRS 1036 Impairment of Assets and recognizes impairment losses if the recoverable amount, which is the higher amount of an asset's value in use and fair value less costs to sell, is less than the carrying amount. When estimating the value in use, the Group's managements estimate the sales volume considering the market size and market share, and estimates the unit price in consideration of the past unit price trend and market conditions. The Group estimated the value in use by applying the discount rate and long-term growth rate to the forecasted future cash flows as described above. We have determined this item as a key audit matter, considering that goodwill allocated to HQCL CGU is significant effect on the consolidated financial statements and involves significant management judgement in estimating the value in use when performing the impairment test.

Deloitte.

How the Key Audit Matter was addressed in the Audit

We performed the following audit procedures for key assumptions, estimation of future cash flows and valuation model used by the Group to estimate the value in use of Goodwill of HQCL CGU.

- Understanding the business processes related to measurement of value in use and annual impairment test.
- Assessment of independence, objectivity and qualification of external valuation specialists used by the Group's managements
- Verification of the appropriateness and mathematical accuracy of the valuation model for estimating future cash flows
- Validation of appropriateness of assumptions related to estimating future cash flows used for measuring value in use.
- Retrospective review of actual performance compared to the past business plan.
- Veriification of a consistency of the data used to estimate the future cash flows and the internal and external information.
- Performing sensitivity analysis on key assumptions used to measure value in use, such as future cash flows and discount rates.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation of the accompanying consolidated financial statements in accordance with K-IFRS, and for such internal control as they determine is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management of the Group is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with KSAs will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with KSAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of the management’s use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group’s ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Group to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Group audits. We are solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current year and are therefore the key audit matters. We describe these matters in our auditors' report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partner on the audit resulting in this independent auditors' report is Sung Ho, Ha.

Deloitte Anjin LLC

March 15, 2021

<u>Notice to Readers</u>

This report is effective as of March 15, 2021 the auditors’ report date. Certain subsequent events or circumstances may have occurred between the auditors’ report date and the time the auditors’ report is read. Such events or circumstances could significantly affect the consolidated financial statements and may result in modifications to the auditors’ report.

HANWHA SOLUTIONS CORPORATION AND ITS SUBSIDIARIES
CONSOLIDATED STATEMENTS OF FINANCIAL POSITION
AS OF DECEMBER 31, 2020 AND DECEMBER 31, 2019

In Korean won	Note	December 31, 2020	December 31, 2019
Assets			
Current assets:			
Cash and cash equivalents	4,5,6,8	₩ 1,199,836,790,880	₩ 1,084,516,315,974
FVTPL-financial assets	5,6,13	2,919,929,609	1,060,993,533
FVTOCI-financial assets	5,6,13	-	1,064,182
Other financial assets	4,5,6,10,40	192,784,578,657	492,890,177,292
Trade receivables and other receivables	4,5,6,7,9,40	1,457,525,668,928	1,572,845,944,066
Other current assets	11	327,677,928,124	370,437,703,835
Inventories	12	1,431,588,395,266	1,479,891,972,739
Current income tax assets		10,521,341,035	23,271,407,595
Assets classified as held-for-sale current assets	19	335,510,133,567	297,733,953,055
		4,958,364,766,066	5,322,649,532,271
Non-current assets:			
FVTPL-financial assets	5,6,13	1,858,487,368	2,129,289,279
FVTOCI- financial assets	5,6,13	48,540,950,633	46,597,216,094
Other financial assets	4,5,6,10,40	62,138,708,939	75,725,406,631
Long-term trade receivables and other receivables	4,5,6,9,40	3,837,386,475	4,627,445,087
Investments in associates and joint ventures	14,40	2,685,163,548,446	2,720,816,814,027
Investment property	15	142,186,820,436	158,043,036,401
Property, plant and equipment	16	6,416,485,418,350	6,594,032,988,421
Intangible assets	17	413,850,869,155	421,170,486,775
Right-of-use assets	18	309,714,378,120	246,989,787,735
Other non-current assets	11	16,286,043,155	15,965,006,023
Deferred income tax assets	37	78,892,444,514	72,381,859,597
		10,178,955,055,591	10,358,479,336,070
Total assets		₩15,137,319,821,657	₩15,681,128,868,341

(Continued)

HANWHA SOLUTIONS CORPORATION AND ITS SUBSIDIARIES
CONSOLIDATED STATEMENTS OF FINANCIAL POSITION (CONTINUED)
AS OF DECEMBER 31, 2020 AND DECEMBER 31, 2019

In Korean won	Note	December 31, 2020	December 31, 2019
Liabilities			
Current liabilities:			
Trade payables and other payables	4,5,6,20,40	₩ 1,556,391,779,523	₩ 1,573,035,225,442
Short-term borrowings	4,5,6,7,21	2,971,925,504,640	3,384,513,842,912
Other financial liabilities	4,5,6,22	222,157,508,868	205,562,068,169
Provisions	25	51,059,261,569	60,855,011,983
Other current liabilities	23	302,576,039,534	559,726,759,182
Current income tax liabilities		147,015,493,040	47,319,479,823
		5,251,125,587,174	5,831,012,387,511
Non-current liabilities			
Long-term trade payables and other payables	4,5,6,20,40	14,510,678	4,997,586
Long-term borrowings	4,5,6,21	2,716,648,021,647	2,984,059,385,479
Other financial liabilities	4,5,6,22	379,992,170,696	218,861,372,784
Net defined benefit liabilities	24	446,565,139,356	411,794,507,447
Long-term employee benefits		27,893,225,306	25,681,557,796
Provisions	25	106,857,639,088	90,674,832,438
Other non-current liabilities	23	6,381,504,979	7,544,550,530
Deferred tax liabilities	37	234,126,532,234	305,648,066,841
		3,918,478,743,984	4,044,269,270,901
Total liabilities		9,169,604,331,158	9,875,281,658,412
Equity			
Capital stock	26	821,170,655,000	821,170,655,000
Capital surplus	26	798,470,151,101	804,503,695,100
Capital adjustments	27	(10,328,159,475)	(2,917,998,641)
Accumulated other comprehensive income	28	(110,009,596,397)	(70,522,771,893)
Retained earnings	29	4,429,789,179,026	4,175,935,376,973
Equity attributable to owner of the Group		5,929,092,229,255	5,728,168,956,539
Non-controlling interests	45	38,623,261,244	77,678,253,390
Total equity		5,967,715,490,499	5,805,847,209,929
Total liabilities and equity		₩ 15,137,319,821,657	₩ 15,681,128,868,341

(Concluded)

See accompanying notes to consolidated financial statements.

HANWHA SOLUTIONS CORPORATION AND ITS SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

In Korean won	Note	2020	2019
Revenue	31,40,42,43	₩ 9,195,008,128,360	₩ 9,457,389,997,298
Cost of sales	32,34,40	7,269,115,499,108	7,607,275,767,119
Gross profit		1,925,892,629,252	1,850,114,230,179
Selling and administrative expenses	33,34	1,331,709,511,176	1,390,962,909,675
Operating income		594,183,118,076	459,151,320,504
Other non-operating income	35	542,225,953,318	403,498,532,769
Other non-operating expenses	35	(665,209,460,262)	(711,602,397,234)
Financial income	36	25,466,097,795	27,724,408,797
Financial expenses	36	(205,280,548,228)	(224,511,950,560)
Share of profit of associates and joint ventures	14	160,157,879,981	213,756,165,312
Non-operating income (loss)		(142,640,077,396)	(291,135,240,916)
Income (loss) before income tax expense		451,543,040,680	168,016,079,588
Income tax expenses	37	111,968,780,759	77,818,675,463
Profit from continuing operations		339,574,259,921	90,197,404,125
Loss from discontinued operations		(37,851,885,752)	(339,062,403,312)
Net income (loss)		301,722,374,169	(248,864,999,187)
Other comprehensive income (loss)		(47,599,356,324)	(1,954,585,227)
Items that are or may be reclassified to profit or loss:			
Share of other comprehensive income of associates and joint ventures		4,713,773,726	3,827,516,495
Gain (loss) on valuation of FVTOCI-financial assets (debt instrument)		(2,896,135)	(807,281)
Gain on valuation of cash flow hedges		(222,613,495)	(485,874,035)
Currency translation adjustments		(8,909,574,700)	35,447,692,838
Items that will not be reclassified to profit or loss:			
Share of other comprehensive income of associates and joint ventures		(42,493,755,246)	3,491,322,304
Gain (loss) on valuation of FVTOCI-financial assets (equity instrument)		1,378,790,937	(41,833,307,530)
Remeasurement of net defined benefit liabilities		(875,102,031)	(4,207,586,561)
Share of remeasurements of net defined benefit liabilities of associates and joint ventures		(1,187,979,380)	1,806,458,543
Total comprehensive income (loss)		₩ 254,123,017,845	₩ (250,819,584,414)
Net income (loss) attributable to:			
Owners of the Group		309,076,634,095	(237,622,602,401)
Non-controlling interests		(7,354,259,926)	(11,242,396,786)
Total comprehensive income (loss) attributable to:			
Owners of the Group		267,740,143,243	(230,199,110,668)
Non-controlling interests		(13,617,125,398)	(20,620,473,746)
Earnings per share from continuing operations attributable to the owners of the group	38		
Basic and diluted earnings per common share		₩ 2,154	₩ 622
Basic and diluted earnings per preferred share		2,210	674
Loss per share from discontinued operations attributable to the owners of the group	38		
Basic and diluted loss per common share		₩ (235)	₩ (2,081)
Basic and diluted loss per preferred share		(236)	(2,085)

(Concluded)

See accompanying notes to consolidated financial statements.

HANWHA SOLUTIONS CORPORATION AND ITS SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN SHARE HOLDERS' EQUITY (CONTINUED)
FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

In Korean won	Capital stock	Consolidated capital surplus	Consolidated capital adjustment	Consolidated accumulated other comprehensive income	Consolidated retained earnings	Non-controlling interests	Total
Balance at January 1, 2019	₩ 821,170,655,000	₩ 856,962,112,699	₩ (3,433,353,389)	₩ (81,251,788,132)	₩ 4,496,527,139,705	₩ 137,121,596,168	₩ 6,227,096,362,051
Effect of changes in accounting policies	-	-	-	-	(8,471,765,781)	(669,610,019)	(9,141,375,800)
Revised Balance at January 1, 2019	821,170,655,000	856,962,112,699	(3,433,353,389)	(81,251,788,132)	4,488,055,373,924	136,451,986,149	6,217,954,986,251
Total comprehensive Income (loss):							
Net loss	-	-	-	-	(237,622,602,401)	(11,242,396,786)	(248,864,999,187)
Other comprehensive income (loss)							
Items subsequently reclassified to net income (loss):							
Gain (loss) on valuation of FVTOCI-financial assets (debt instrument)	-	-	-	2,172,354	-	(2,979,635)	(807,281)
Share of other comprehensive income of associates and joint ventures	-	-	-	3,761,221,864	-	66,294,631	3,827,516,495
Gain (loss) on valuation of cash flow hedges	-	-	-	(485,837,092)	-	(36,943)	(485,874,035)
Currency translation adjustments	-	-	-	37,818,746,660	-	(2,371,053,822)	35,447,692,838
Items not subsequently reclassified to net income (loss):							
Loss on valuation of FVTOCI-financial assets (equity instrument)	-	-	-	(35,081,534,452)	-	(6,751,773,078)	(41,833,307,530)
Share of other comprehensive income of associates and joint ventures	-	-	-	3,491,322,304	-	-	3,491,322,304
Substitution from other comprehensive income to retained earnings	-	-	-	1,222,924,601	(1,222,924,601)	-	-
Remeasurement of net defined benefit liabilities	-	-	-	-	(3,899,040,106)	(308,546,455)	(4,207,586,561)
Share of remeasurements of net defined benefit liabilities of associates and joint ventures	-	-	-	-	1,816,440,201	(9,981,658)	1,806,458,543
Transactions with shareholders:							
Dividends paid	-	-	-	-	(32,903,013,050)	(1,159,369,300)	(34,062,382,350)
Acquisition of treasury stock	-	-	(37,157,699,570)	-	-	-	(37,157,699,570)
Retirement of treasury stock	-	-	37,157,699,570	-	(37,157,699,570)	-	-
Changes in scope of consolidation:							
Proceeds from acquisition of subsidiaries	-	(9,004,703,432)	-	-	-	250,000,000	(8,754,703,432)
Changes in ownership interests in subsidiaries that do not result in a loss of control:							
Changes in ownership interests in subsidiaries	-	(45,252,494,490)	-	-	-	(37,002,060,148)	(82,254,554,638)
Others	-	1,798,780,323	515,354,748	-	(1,131,157,424)	(241,829,565)	941,148,082
Balance at December 31, 2019	₩ 821,170,655,000	₩ 804,503,695,100	₩ (2,917,998,641)	₩ (70,522,771,893)	₩ 4,175,935,376,973	₩ 77,678,253,390	₩ 5,805,847,209,929

See accompanying notes to consolidated financial statements.

HANWHA SOLUTIONS CORPORATION AND ITS SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
FOR THE YEARS ENDED DECEBMER 31, 2020 AND 2019

In Korean won

	Capital stock	Consolidated capital surplus	Consolidated capital adjustment	Consolidated accumulated other comprehensive income	Consolidated retained earnings	Non-controlling interests	Total
Balance at January 1, 2020	₩ 821,170,655,000	₩ 804,503,695,100	₩ (2,917,998,641)	₩ (70,522,771,893)	₩ 4,175,935,376,973	₩ 77,678,253,390	₩ 5,805,847,209,929
Total comprehensive Income (loss):							
Net income (loss)	-	-	-	-	309,076,634,094	(7,354,259,926)	301,722,374,168
Other comprehensive income (loss)							
Items subsequently reclassified to net income (loss):							
Gain (loss) on valuation of FVTOCI-financial assets (debt instrument)	-	-	-	(1,426,607)	-	(1,469,528)	(2,896,135)
Share of other comprehensive income of associates and joint ventures	-	-	-	4,715,044,647	-	(1,270,921)	4,713,773,726
Gain (loss) on valuation of cash flow hedges	-	-	-	(222,682,524)	-	69,029	(222,613,495)
Currency translation adjustments	-	-	-	(4,281,772,732)	-	(4,627,801,968)	(8,909,574,700)
Items not subsequently reclassified to net income (loss):							
Loss on valuation of FVTOCI-financial assets (equity instrument)	-	-	-	2,797,767,958	-	(1,418,977,021)	1,378,790,937
Share of other comprehensive income of associates and joint ventures	-	-	-	(42,493,755,246)	-	-	(42,493,755,246)
Remeasurement of net defined benefit liabilities	-	-	-	-	(661,686,952)	(213,415,079)	(875,102,031)
Share of remeasurements of net defined benefit liabilities of associates and joint ventures	-	-	-	-	(1,187,979,396)	16	(1,187,979,380)
Transactions with shareholders:							
Dividends paid	-	-	-	-	(32,576,792,250)	(3,500,000,000)	(36,076,792,250)
Acquisition of treasury stock	-	-	(28,997,745,820)	-	-	-	(28,997,745,820)
Disposal of treasury stock	-	12,763,080	8,158,920	-	-	-	20,922,000
Retirement of treasury stock	-	-	21,580,364,530	-	(21,580,364,530)	-	-
Changes in scope of consolidation:							
Proceeds from acquisition of subsidiaries	-	3,120,203,316	-	-	-	1,783,471,949	4,903,675,265
Changes in ownership interests in subsidiaries that do not result in a loss of control:							
Changes in ownership interests in subsidiaries	-	(19,423,623,772)	-	-	-	(23,713,286,424)	(43,136,910,196)
Share-based payment	-	7,713,950,247	-	-	-	-	7,713,950,247
Others	-	2,543,163,130	(938,464)	-	783,991,087	(8,052,273)	3,318,163,480
Balance at December 31, 2020	₩ 821,170,655,000	₩ 798,470,151,101	₩ (10,328,159,475)	₩ (110,009,596,397)	₩ 4,429,789,179,026	₩ 38,623,261,244	₩ 5,967,715,490,499

See accompanying notes to consolidated financial statements.

HANWHA SOLUTIONS CORPORATION AND ITS SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)
FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

In Korean won	Note	2020	2019
Cash flows from operating activities:			
Cash generated from operating activities	41	₩ 1,141,661,090,979	₩1,415,699,225,492
Income taxes paid		(72,119,403,884)	(209,581,545,423)
Net cash provided by operating activities		1,069,541,687,095	1,206,117,680,069
Cash flows from investing activities:			
Interest received		35,600,394,355	35,861,906,234
Dividends received		176,077,517,666	89,546,657,307
Proceeds from disposal of FVTOCI-financial assets		980,000	70,360,000
Proceeds from disposal of other financial assets		976,303,390,817	541,604,943,541
Proceeds from disposal of investment in in associates and joint ventures		23,390,558,270	-
Proceeds from disposal of investment in subsidiaries		2,493,116,874	3,203,731,619
Proceeds from government grants		128,093,170	159,635,694
Proceeds from disposal of investment property		16,006,916,960	38,786,383,530
Proceeds from disposal of plant, property and Equipment		18,729,394,543	27,385,447,893
Proceeds from disposal of intangible assets		16,118,356,750	8,544,728,999
Proceeds from disposal of right-of-use assets		-	2,558,502,469
Proceeds from disposal of assets classified as held for-sale current assets		398,834,536,000	18,244,879,723
Acquisition of other financial assets		(711,043,294,095)	(630,935,085,288)
Acquisition of investment in associates and joint ventures		(54,155,760,535)	(26,965,943,072)
Acquisition of investment property		(3,530,862)	(5,398,860)
Acquisition of property, plant and equipment		(883,786,181,487)	(1,165,343,863,539)
Acquisition of intangible assets		(8,247,915,888)	(9,177,286,751)
Acquisition of right-of-use assets		-	(535,094,206)
Acquisition of investment in subsidiaries		(45,910,717,450)	(22,594,290,086)
Changes in scope of consolidation		(3,272,410,317)	(5,142,168,555)
Acquistion of business segment		-	(18,207,835,573)
Proceeds from other receivables (investing activities)		-	15,733,761,781
Payment of other payables (investing activities)		-	(13,449,129,623)
Net cash used in investing activities		(42,736,555,229)	(1,110,655,156,763)

(Continued)

HANWHA SOLUTIONS CORPORATION AND ITS SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

In Korean won	Note	2020	2019
Cash flows from financing activities:			
Increase in borrowings		₩ 3,506,554,272,128	₩ 3,264,106,017,361
Increase in other financial liabilities		4,054,009,725	2,030,000,000
Changes in non-controlling interests		(19,701,208,376)	(85,085,916,058)
Repayment of borrowings		(4,077,517,293,961)	(2,883,316,793,694)
Decrease in other financial liabilities		(2,011,400,000)	(4,431,750,000)
Payment of interest		(176,264,881,804)	(228,797,046,672)
Payment of dividends		(32,576,792,250)	(32,903,013,050)
Payment of lease		(60,376,968,987)	(37,061,211,051)
Acquisition of treasury stocks		(28,997,745,820)	(37,157,699,570)
Net cash provided by (used in) financing activities		(886,838,009,345)	(42,617,412,734)
Net increase in cash and cash equivalents		139,967,122,521	52,845,110,572
Cash and cash equivalents at January 1		1,084,516,315,974	1,024,121,436,014
Effects of exchange rate changes on the balance of cash held in foreign currencies		(24,646,647,615)	7,549,769,388
Cash and cash equivalents at December 31		₩ 1,199,836,790,880	₩ 1,084,516,315,974

(Concluded)

See accompanying notes to consolidated financial statements.

1. GENERAL:

Hanwha Solutions Corporation and its subsidiaries (the "Group") was incorporated on April 27, 1974, under the laws of the Republic of Korea. The Group is mainly engaged in the manufacturing and commercialization of synthetic resins, such as caustic soda, PVC, and LLDPE, other petrochemical products other and photovoltaic module, photovoltaic power plant.. The Group's headquarters is located at Janggyo-dong, Jung-gu, Seoul and its manufacturing facilities are located in Ulsan and the petrochemical complex in Yeo-su, Jeolla Namdo, Eum-seong, Choongchung Bukdo and Sejong Republicof Korea. The consolidated financial statements for the years ended December 31, 2020, represent ownership interests of the Group and its subsidiaries (the "Group") in associates and joint ventures.

The Group listed its stocks on the Korea Stock Exchange on June 19, 1974. The Group changed its name from Hanwha Petrochemical Co., Ltd. to Hanwha Chemical Corporation on March 19, 2010.

The Group changed its name to Hanwha Solutions Corporation after completing the merger with its subsidiary Hanwha Q CELLS & Advanced Materials Co., Ltd. on January 1, 2020 under Article 527-3 of the Commercial Law in Republic of Korea.

(1) Details of subsidiaries

1) As of December 31, 2020 and December 31, 2019, the Group 's consolidated subsidiaries are as follows.

Company	Locations	Closing month	Main business	Percentage of ownership December 31, 2020	Percentage of ownership December 31, 2019
Hanwha Solutions Corporation					
Hanwha Chemical (Shanghai) Co.,Ltd.	China	December	Trade	100.00%	100.00%
Hanwha Chemical Overseas Holdings, Co., Ltd.	Republic of Korea	December	Holding Company	100.00%	100.00%
Hanwha Compound Corporation	Republic of Korea	December	Manufacture and sale of packaging materials	100.00%	100.00%
Hanwha Global Asset Corporation	Republic of Korea	December	Holding Company	100.00%	100.00%
Haeorum PV Plant Corporation(*1)	Republic of Korea	December	Solar photovoltaic power plant industry	100.00%	100.00%
Hanwha City Development Co., Ltd.	Republic of Korea	December	Real estate industry	100.00%	100.00%
Hanwha Galleria Co., Ltd.	Republic of Korea	December	Department store, wholesale and retail	100.00%	100.00%
HAMC Holdings Corp.	USA	December	Holding company	100.00%	-
Hanwha Q CELLS Co., Ltd.	England	December	Holding company	100.00%	100.00%
Hanwha International Corp.	USA	December	Holding company	100.00%	100.00%
Hanwha Chemical Malaysia Sdn. Bhd.	Malaysia	December	Trade	100.00%	100.00%
HANWHA CHEMICAL INDIA PRIVATE LIMITED	India	March	Trade	99.99%	99.99%
Hanwha Chemical (Thailand) Co., Ltd.	Thailand	December	Manufacture of compound	99.99%	99.99%
Hanwha Chemical (Ningbo) Co., Ltd.	China	December	Manufacture of compound	100.00%	100.00%
Q CELLS ASSET MANAGEMENT LIMITED	UK	December	Investment advisory	100.00%	-
Hanwha Galleria Co., Ltd.					
Hanwha Galleria Timeworld Co., Ltd.(*2)	Republic of Korea	December	Department store	99.99%	86.92%
Hanwha B&B Co Ltd.	Republic of Korea	December	Restaurant business	100.00%	100.00%
Hanwha City Development Co., Ltd.					
Gyeonggi Yongin Techno Valley Co., Ltd.	Republic of Korea	December	Real estate industry	75.00%	75.00%
Gimhae Techno Valley Co., Ltd.	Republic of Korea	December	Real estate industry	80.00%	80.00%
Seosan Techno Valley	Republic of Korea	December	Real estate development and sales	65.00%	65.00%

Company	Locations	Closing month	Main business	Percentage of ownership December 31, 2020	December 31, 2019
West Ochang Techno Valley Co., ltd.	Republic of Korea	December	Real estate industry	73.00%	-
Asan Techno Valley	Republic of Korea	December	Real estate industry	100.00%	100.00%
Anseong Techno Valley	Republic of Korea	December	Industrial park development	75.00%	75.00%
H-Valley Co., Ltd.	Republic of Korea	December	Real estate sales	51.00%	51.00%
The Second Yong In Techno Valley Co, Ltd	Republic of Korea	December	Real estate industry	70.00%	-
Hanwha International Corp.					
Eagle Petroleum Monterey, LLC(*3)	USA	December	Oil and gas exploration	-	100.00%
Eagle Petroleum, LLC(*3)	USA	December	Oil and gas exploration	-	100.00%
Garnet Solar Power Generation Station 1, LLC(*3)	USA	December	Solar photovoltaic power business	100.00%	100.00%
Hanwha Advanced Materials America LLC(*3)	USA	December	Manufacture of automobile parts	100.00%	100.00%
Hanwha Advanced Materials Holdings USA LLC(*3)	USA	December	Holding company	100.00%	100.00%
Hanwha Advanced Materials Mexico S. De R.L. De C.V.(*3)	Mexico	December	Manufacture of automobile parts	100.00%	100.00%
Hanwha America Development LLC(*3)	USA	December	Real estate development	-	100.00%
Hanwha AZDEL, Inc.(*3)	USA	December	Manufacture of automobile parts	100.00%	100.00%
Hanwha Holdings(USA), Inc.(*3)	USA	December	Holding company	80.00%	80.00%
Hanwha International LLC(*3)	USA	December	Trade	100.00%	100.00%
Hanwha Machinery Americas, Inc.(*3)	USA	December	Sales of machine tools	100.00%	100.00%
Hanwha Parcel O LLC(*3)	USA	December	Real estate development	100.00%	100.00%
Hanwha Property USA LLC(*3)	USA	December	Real estate development	100.00%	100.00%
Hanwha PVPLUS LLC(*3)	USA	December	Asset securitization	100.00%	100.00%
Hanwha Resources (USA) Corporation(*3)	USA	December	Oil and gas exploration	80.00%	80.00%
HANWHA TECHM USA LLC(*3)	USA	December	Manufacture of automobile parts	100.00%	100.00%
Hanwha Village Market, LLC(*3)	USA	December	Real estate development	100.00%	100.00%
Hanwha West Properties LLC(*3)	USA	December	Real estate development	100.00%	100.00%
HQC Rock River Solar Holdings LLC(*3)	USA	December	Solar photovoltaic power business	100.00%	100.00%
HQC Rock River Solar Power Generation Station LLC(*3)	USA	December	Solar photovoltaic power business	100.00%	100.00%
Universal Bearings LLC(*3)	USA	December	Manufacture of bearings	100.00%	100.00%
Hanwha Q CELLS Co., Ltd.					
Agenor Hive SL	Spain	December	EPC construction	100.00%	100.00%
ALDGATE EAST INVESTMENTS, SL	Spain	December	EPC construction	70.00%	-
ALFAZ DIRECTORSHIP, SL	Spain	December	EPC construction	70.00%	-
ALQUIZAR INVESTMENTS, SL	Spain	December	EPC construction	70.00%	-
ANNAPURNA SERVICIOS EMPRESARIALES, SL	Spain	December	EPC construction	70.00%	-
Avenir el Divisadero SpA	Chile	December	EPC construction	100.00%	100.00%
ARBECA SOLAR SLU	Spain	December	EPC construction	100.00%	100.00%
BENIF INVESTMENTS, SL	Spain	December	EPC construction	70.00%	-
BOLERO ENERGY, S.L.	Spain	December	EPC construction	100.00%	-
BURETE DIRECTORSHIP, SL	Spain	December	EPC construction	70.00%	-
CABUYA CORPORATE SERVICES, SL	Spain	December	EPC construction	70.00%	-
CAMPANA ENERGY, S.L.	Spain	December	EPC construction	100.00%	-
CANARY WHARF INVESTMENTS, SL	Spain	December	EPC construction	70.00%	-
CANNING TOWN INVESTMENTS, SL	Spain	December	EPC construction	70.00%	-
CAPRICORNIO ENERGY, S.L.	Spain	December	EPC construction	100.00%	-
CASTELLDANS SOLAR SLU	Spain	December	EPC construction	100.00%	100.00%
CASTELLNOU SOLAR SLU	Spain	December	EPC construction	100.00%	100.00%
CLAVE DE SOL ENERGY, S.L.U	Spain	December	EPC construction	100.00%	-

Company	Locations	Closing month	Main business	Percentage of ownership December 31, 2020	Percentage of ownership December 31, 2019
COMBA DIRECTORSHIP, SL	Spain	December	EPC construction	70.00%	-
CONVENT GARDEN INVESTMENTS, SL	Spain	December	EPC construction	70.00%	-
DICKSON SERVICIOS EMPRESARIALES, SL	Spain	December	EPC construction	70.00%	-
DIONISIO SUN, S.L.	Spain	December	EPC construction	100.00%	-
Don Rodrigo Hive SL	Spain	December	EPC construction	100.00%	100.00%
Elektrownia Fotowoltaiczna Kreznica Okragla Sp. z o.o	Poland	December	Solar photovoltaic power business	-	100.00%
Elektrownia OZE 3 Sp. z o.o.	Poland	December	Solar photovoltaic power business	100.00%	100.00%
EMPER INVESTMENTS, SL	Spain	December	EPC construction	70.00%	-
ENDINO SERVICIOS EMPRESARIALES, SL	Spain	December	EPC construction	70.00%	-
GALAXY ENERGY, S.L.	Spain	December	EPC construction	100.00%	-
GALGO POWER, S.L.	Spain	December	EPC construction	100.00%	-
GARDAYA INVESTMENTS, SL	Spain	December	EPC construction	70.00%	-
GAVILAN POWER, S.L.U	Spain	December	EPC construction	100.00%	-
GERIFALTE POWER, S.L.U	Spain	December	EPC construction	100.00%	-
GREEN RIC ENERGY, S.L.	Spain	December	EPC construction	100.00%	-
Growing Energy Labs, Inc.	USA	December	Energy management system	100.00%	-
Guadajoz Hive SL	Spain	December	EPC construction	100.00%	100.00%
Hanwha Q CELLS (Nantong) Co., Ltd.	China	December	Manufacture and sales of solar products	100.00%	100.00%
Hanwha Q CELLS (Qidong) Co., Ltd.	China	December	Manufacture of silicon ingot	100.00%	100.00%
Hanwha Q CELLS America Inc.	USA	December	Sales of solar products	100.00%	100.00%
Hanwha Q CELLS America Project Holdings LLC	USA	December	Investment in solar power projects	100.00%	100.00%
Hanwha Q CELLS Australia Pty Ltd.	Australia	December	Sales of solar products	100.00%	100.00%
Hanwha Q CELLS Canada, Corp.	Canada	December	Sales of solar products	100.00%	100.00%
Hanwha Q CELLS Chile SpA	Chile	December	Manufacture and sales of solar power facilities	100.00%	100.00%
Hanwha Q CELLS France SAS	France	December	Solar photovoltaic power business	100.00%	100.00%
Hanwha Q CELLS Gmbh	Germany	December	Sales of solar products	100.00%	100.00%
Hanwha Q CELLS Hong Kong Limited	Hong Kong	December	Investment and international procurement	100.00%	100.00%
Hanwha Q CELLS Investment Co., Ltd.	England	December	Holding company	100.00%	100.00%
Hanwha Q CELLS Malaysia Sdn. Bhd.	Malaysia	December	Manufacture of solar products	100.00%	100.00%
Hanwha Q CELLS Peru S.A.C	Peru	December	Solar photovoltaic power business	99.99%	99.99%
HANWHA Q CELLS SOLAR POWER SDN. BHD.	Malaysia	December	Sales of solar products	100.00%	100.00%
Hanwha Q CELLS Technology (Shanghai) Co., Ltd.	China	December	Sales of solar products	100.00%	100.00%
Hanwha Q CELLS Technology Co., Ltd.	China	December	Manufacture of silicon ingot	-	100.00%
Hanwha Q CELLS Til Til Uno SPA	Chile	December	Manufacture and sales of solar power system	100.00%	100.00%
Hanwha Q CELLS Turkey	Turkey	December	Construction and sales of solar power generation facilities	100.00%	100.00%
Hanwha Solar Electric Power Engineering Co., Ltd.	China	December	Construction of solar power generation facilities	100.00%	100.00%
Hanwha Solar Engineering R&D center Co., Ltd.	China	December	Research and Development	-	100.00%
Hanwha Solarone(beipiao) Co., Ltd	China	December	Solar photovoltaic power business	100.00%	100.00%
Hanwha SolarOne (Laiyang) Co., Ltd.	China	December	Solar photovoltaic power business	100.00%	100.00%
Hanwha SolarOne (Rugao) Co., Ltd.	China	December	Solar photovoltaic power business	100.00%	100.00%
Hanwha SolarOne GmbH	Germany	December	Sales of solar products	100.00%	100.00%

Company	Locations	Closing month	Main business	Percentage of ownership December 31, 2020	December 31, 2019
Hanwha SolarOne Investment Holding Ltd.	England	December	Holding company	100.00%	100.00%
Hanwha SolarOne Power Generation (Wuxi) Co., Ltd.	China	December	Solar photovoltaic power business	100.00%	100.00%
HARRIER POWER, S.L.U	Spain	December	EPC construction	100.00%	-
HESTIA SUN, S.L.	Spain	December	EPC construction	100.00%	-
HQC PORTUGAL HOLDINGS, LDA (formerly, QSUN PORTUGAL 1, UNIPESSOAL LDA)	Portugal	December	EPC construction	100.00%	-
Huoqiu Hanrui New Energy Power Generation Co., Ltd.	China	December	Solar photovoltaic power business	100.00%	100.00%
INCOGNITWORLD, LDA.	Portugal	December	Solar photovoltaic power business	100.00%	100.00%
INCOGNITWORLD 2, UNIPESSOAL LDA	Portugal	December	EPC construction	100.00%	-
INCOGNITWORLD 3, UNIPESSOAL LDA	Portugal	December	EPC construction	100.00%	-
INCOGNITWORLD 4, UNIPESSOAL LDA	Portugal	December	EPC construction	100.00%	-
INCOGNITWORLD 5, UNIPESSOAL LDA	Portugal	December	EPC construction	100.00%	-
IRON POWER ENERGY, S.L.U	Spain	December	EPC construction	100.00%	-
KADOK CORPORATE SERVICES, SL	Spain	December	EPC construction	70.00%	-
KAMPALA CORPORATE SERVICES, SL	Spain	December	EPC construction	70.00%	-
KMPT Solarpark Verwaltung GmbH	Germany	December	Solar photovoltaic power business	100.00%	100.00%
Las Coronadas Hive SL	Spain	December	EPC construction	100.00%	100.00%
LASTRAFI POWER, S.L.	Spain	December	EPC construction	100.00%	-
LEBREL POWER, S.L.	Spain	December	EPC construction	100.00%	-
LINE ENERGY, S.L.U	Spain	December	EPC construction	100.00%	-
Lodz Solar Sp. z o.o.	Poland	December	EPC construction	-	100.00%
Malhada Green S.A	Portugal	December	Solar photovoltaic power business	100.00%	100.00%
MALHADA GREEN 2, UNIPESSOAL LDA	Portugal	December	EPC construction	100.00%	-
Mazovia Solar 1 Sp. Z o.o.	Poland	December	EPC construction	-	100.00%
Mazovia Solar 2 Sp. Z o.o.	Poland	December	EPC construction	-	100.00%
Mazovia Solar 3 Sp. Z o.o.	Poland	December	EPC construction	-	100.00%
MONTALBAN DIRECTORSHIP, SL	Spain	December	EPC construction	70.00%	-
Nantong Hanwha Import & Export Co., Ltd.	China	December	Sales of solar products	100.00%	100.00%
NEPAL SERVICIOS EMPRESARIALES, SL	Spain	December	EPC construction	70.00%	-
OTERO DIRECTORSHIP, SL	Spain	December	EPC construction	70.00%	-
PALOMA POWER, S.L.	Spain	December	EPC construction	100.00%	-
PODENCO POWER, S.L.	Spain	December	EPC construction	100.00%	-
PV Jagodne Sp. z.o.o.	Poland	December	Solar photovoltaic power business	100.00%	100.00%
PV Vallenar Uno SpA	Chile	December	Holding company	100.00%	100.00%
Q CELLS DO BRASIL CONSULTORIA EMPRESARIAL LTDA	Brazil	December	Solar photovoltaic power business	100.00%	100.00%
QSUN 1	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 10	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 11	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 12	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 13	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 14	Poland	December	Solar photovoltaic power business	-	100.00%

Company	Locations	Closing month	Main business	Percentage of ownership December 31, 2020	December 31, 2019
QSUN 15	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 16	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 17	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 18	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 19	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 2	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 20 Sp. z o.o.	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 23 Sp. z o.o.	Poland	December	Solar photovoltaic power business	100.00%	100.00%
QSUN 26 Sp. z o.o.	Poland	December	Solar photovoltaic power business	100.00%	100.00%
QSUN 3	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 4	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 5	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 6	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 7	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 8	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN 9	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN Poland Sp. z o.o.	Poland	December	Solar photovoltaic power business	-	100.00%
QSUN PORTUGAL 2, UNIPESSOAL LDA	Portugal	December	EPC construction	100.00%	-
QSUN PORTUGAL 3, UNIPESSOAL LDA	Portugal	December	EPC construction	100.00%	-
QSUN PORTUGAL 4, UNIPESSOAL LDA	Portugal	December	EPC construction	100.00%	-
QSUN PORTUGAL 5, UNIPESSOAL LDA	Portugal	December	EPC construction	100.00%	-
QSUN PORTUGAL 6, UNIPESSOAL LDA	Portugal	December	EPC construction	100.00%	-
QSUN PORTUGAL 7, UNIPESSOAL LDA	Portugal	December	EPC construction	100.00%	-
REAL ENERGY POWER, S.L.	Spain	December	EPC construction	100.00%	-
REUS SOLAR SLU	Spain	December	EPC construction	100.00%	100.00%
RIMA ENERGY, S.L.U	Spain	December	EPC construction	100.00%	-
SACRAMETO DIRECTORSHIP, S.L.	Spain	December	EPC construction	100.00%	-
SFH Solarpark GmbH	Germany	December	Solar photovoltaic power business	100.00%	100.00%
Silesian Sun Energy Sp. z o.o.	Poland	December	Solar photovoltaic power business	100.00%	100.00%
SILVER RIC ENERGY, S.L.	Spain	December	EPC construction	100.00%	-
Sociedade Poente Deslumbrante Lda.	Portugal	December	EPC Construction	-	100.00%
SPRING POWER, S.L.	Spain	December	EPC construction	100.00%	-
SPP Wytwarzanie 18 sp. z o.o.	Poland	December	Solar photovoltaic power business	100.00%	100.00%
SPP Wytwarzanie 31 sp. z o.o.	Poland	December	Solar photovoltaic power business	100.00%	100.00%
SPP Wytwarzanie 33 sp. z o.o.	Poland	December	Solar photovoltaic power business	100.00%	100.00%
Sunwolt Sp. z o.o.	Poland	December	Solar photovoltaic power business	100.00%	100.00%
VALS ENERGY POWER, S.L.	Spain	December	EPC construction	100.00%	-

Company	Locations	Closing month	Main business	Percentage of ownership December 31, 2020	December 31, 2019
VECIANA SOLAR SLU	Spain	December	EPC Construction	100.00%	100.00%
WSE Bradley Road Ltd	England	December	Solar photovoltaic power business	100.00%	100.00%
HSI Corporation	Republic of Korea	December	Solar photovoltaic power business	100.00%	100.00%
HANWHA Global Asset Corporation					
BT Coniglio Solar, LLC	USA	December	Solar photovoltaic power business	100.00%	-
BT Cooke Solar, LLC	USA	December	Solar photovoltaic power business	-	-
BT Kellam Solar, LLC	USA	December	Solar photovoltaic power business	-	-
Coniglio Solar Holdings, LLC	USA	December	Solar photovoltaic power business	100.00%	-
Eagle Petroleum Monterey, LLC(*3)	USA	December	Oil and gas exploration	-	100.00%
Eagle Petroleum, LLC(*3)	USA	December	Oil and gas exploration	-	100.00%
Garnet Solar Power Generation Station 1, LLC(*3)	USA	December	Solar photovoltaic power business	100.00%	100.00%
HQC Solar Holdings 1, LLC (formerly, H-Flats Solar Holdings, LLC)	USA	December	Solar photovoltaic power business	100.00%	-
Hanwha Advanced Materials America LLC(*3)	USA	December	Manufacture of automobile parts	100.00%	100.00%
Hanwha Advanced Materials Beijing Co., Ltd.	China	December	Manufacture of automobile parts	100.00%	100.00%
Hanwha Advanced Materials Chongqing Co., Ltd.	China	December	Manufacture of automobile parts	100.00%	100.00%
Hanwha Advanced Materials Europe, s.r.o.	Czech	December	Manufacture of automobile parts	100.00%	100.00%
Hanwha Advanced Materials Germany GmbH	Germany	December	Manufacture of automobile parts	100.00%	100.00%
Hanwha Advanced Materials Holdings USA Inc.	USA	December	Holding company	100.00%	100.00%
Hanwha Advanced Materials Holdings USA LLC(*3)	USA	December	Holding company	100.00%	100.00%
Hanwha Advanced Materials Mexico S. De R.L. De C.V.(*3)	Mexico	December	Manufacture of automobile parts	100.00%	100.00%
Hanwha Advanced Materials Shanghai Co., Ltd.	China	December	Manufacture of automobile parts	100.00%	100.00%
Hanwha America Development Inc.	USA	December	Holding company	100.00%	100.00%
Hanwha America Development LLC(*3)	USA	December	Real estate development	-	100.00%
Hanwha AZDEL, Inc.(*3)	USA	December	Manufacture of automobile parts	100.00%	100.00%
Hanwha Holdings(USA), Inc.(*3)	USA	December	Holding company	80.00%	80.00%
Hanwha International LLC(*3)	USA	December	Trade	100.00%	100.00%
Hanwha Machinery Americas, Inc.(*3)	USA	December	Sales of machine tools	100.00%	100.00%
Hanwha Parcel O LLC(*3)	USA	December	Real estate development	100.00%	100.00%
Hanwha Property USA LLC(*3)	USA	December	Real estate development	100.00%	100.00%
Hanwha PVPLUS LLC(*3)	USA	December	Asset securitization	100.00%	100.00%
Hanwha Q CELLS Americas Holdings. Corp.	USA	December	Solar photovoltaic power business	100.00%	100.00%
Hanwha Q CELLS Australia Holdings Pty Ltd.	Australia	December	Solar photovoltaic power business	100.00%	100.00%
Hanwha Q CELLS Canada, Inc	Canada	December	Solar photovoltaic power business	100.00%	100.00%
Hanwha Q CELLS EPC USA, LLC	USA	December	Solar photovoltaic power business	100.00%	100.00%
Hanwha Q CELLS Servicios Comerciales, S DE RL DE CV	Mexico	December	Solar photovoltaic power business	100.00%	100.00%
Hanwha Q CELLS Solar Technology Australia Pty Ltd.	Australia	December	Solar photovoltaic power business	100.00%	100.00%
Hanwha Q CELLS USA Corp.	USA	December	Solar photovoltaic power business	100.00%	100.00%
Hanwha Q CELLS USA, INC.	USA	December	Solar photovoltaic power business	100.00%	100.00%

Company	Locations	Closing month	Main business	Percentage of ownership December 31, 2020	December 31, 2019
Hanwha Resources (USA) Corporation(*3)	USA	December	Oil and gas exploration	80.00%	80.00%
HANWHA TECHM USA LLC(*3)	USA	December	Manufacture of automobile parts	100.00%	100.00%
Hanwha Village Market, LLC(*3)	USA	December	Real estate development	100.00%	100.00%
Hanwha West Properties LLC(*3)	USA	December	Real estate development	100.00%	100.00%
HQ MEX, LLC	Mexico	December	Solar photovoltaic power business	100.00%	100.00%
HQ MEXICO HOLDINGS S DE RL DE CV	Mexico	December	Solar photovoltaic power business	100.00%	100.00%
HQ MEXICO Solar I S DE RL DE CV	Mexico	December	Solar photovoltaic power business	100.00%	100.00%
HQ MEXICO Solar II S DE RL DE CV	Mexico	December	Solar photovoltaic power business	100.00%	100.00%
HQC Maywood, LLC	USA	December	Solar photovoltaic power business	100.00%	100.00%
HQC Rock River Solar Holdings LLC(*3)	USA	December	Solar photovoltaic power business	100.00%	100.00%
HQC Rock River Solar Power Generation Station LLC(*3)	USA	December	Solar photovoltaic power business	100.00%	100.00%
HSEA HVES, LLC	USA	December	Solar photovoltaic power business	100.00%	100.00%
HSESM American Union LLC	USA	December	Solar photovoltaic power business	100.00%	100.00%
HSESM LeGrandUHS LLC	USA	December	Solar photovoltaic power business	100.00%	100.00%
HSESM PlanadaES LLC	USA	December	Solar photovoltaic power business	100.00%	100.00%
Kalaeloa Renewable Energy Park, LLC	USA	December	Solar photovoltaic power business	100.00%	100.00%
Kellam Solar Class B, LLC	USA	December	Solar photovoltaic power business	100.00%	-
Kellam Solar Holdings, LLC	USA	December	Solar photovoltaic power business	100.00%	-
Rippey Solar Holdings, LLC	USA	December	Solar photovoltaic power business	100.00%	-
Solar Monkey 1, LLC	USA	December	Solar photovoltaic power business	100.00%	100.00%
Solar Monkey 2, LLC	USA	December	Solar photovoltaic power business	100.00%	100.00%
Universal Bearings LLC(*3)	USA	December	Manufacture of bearings	100.00%	100.00%
Yungam Techno Solar Power Corp.	Republic of Korea	December	Solar photovoltaic power business	100.00%	100.00%
Yungam Hae-oreum Solar Power Corp.	Republic of Korea	December	Solar photovoltaic power business	100.00%	100.00%
Hi-pass Solar Power Corp.	Republic of Korea	December	Solar photovoltaic power business	100.00%	100.00%
Sunrise Solar Corp.	Republic of Korea	December	Solar photovoltaic power business	100.00%	100.00%
Haesarang Solar Power Corp.	Republic of Korea	December	Solar photovoltaic power business	100.00%	100.00%
Hanwha Q CELLS Turkey					
Aslan Gunes Enerjisi A.S.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Hiprom Enerji Yatirlmlari A.S.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Sema Enerji Uretim Ltd. Sti.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Alkin Enerji Uretim Ltd. Sti.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Kartal Enerji Uretim Ltd. Sti.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Mutlak Enerji Uretim Ltd. Sti.(*4)	Turkey	December	Solar photovoltaic power business	-	-

Company	Locations	Closing month	Main business	Percentage of ownership December 31, 2020	Percentage of ownership December 31, 2019
Elcin Enerji Uretim Ltd. Sti.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Fnt Gida Turizm Ic Ve Dis Ticaret Sanayi Ltd. Sti.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Meva Muhendislik Bilisim Enerji Insaat Iletisim Turizm San.Ve Dis Tic. Ltd. Sti.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Serimer Optik Medikal Kirtasiye Temizlik Insaat Ithalat Ihra cat Sanayi Tic. Ltd. Sti.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Marel Bilisim Muhendislik Enerji Insaat Iletisim Turizm Gida San. Ve Dis Tic. Ltd. Sti.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Fior Gunes Enerjisi Anonim Sirketi(*4)	Turkey	December	Solar photovoltaic power business	-	-
Toprakkale Altyapi ve Malzeme Hizmetleri A.S.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Ulu Gunes Enerjisi Anonim Sirketi(*4)	Turkey	December	Solar photovoltaic power business	-	-
Moravia Enerji Sanayi ve Ticaret Ltd. Sti.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Uno Enerji A.S.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Aceka 2 Gunes Enerjisi A.S.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Aceka 3 Gunes Enerjisi A.S.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Bilgidar 2 Gunes Enerjisi Limited Sirketi(*4)	Turkey	December	Solar photovoltaic power business	-	-
Buselik 2 Gunes Enerjisi Limited Sirketi(*4)	Turkey	December	Solar photovoltaic power business	-	-
Buselik 3 Gunes Enerjisi Limited Sirketi(*4)	Turkey	December	Solar photovoltaic power business	-	-
Dimetoka 2 Gunes Enerjisi Limited Sirketi(*4)	Turkey	December	Solar photovoltaic power business	-	-
Dimetoka 3 Gunes Enerjisi Limited Sirketi(*4)	Turkey	December	Solar photovoltaic power business	-	-
Isfahan 3 Gunes Enerjisi Limited Sirketi(*4)	Turkey	December	Solar photovoltaic power business	-	-
Onan 2 Gunes Enerji Uretim A.S.(*4)	Turkey	December	Solar photovoltaic power business	-	-
Onan 3 Gunes Enerji Uretim A.S.(*4)	Turkey	December	Solar photovoltaic power business	-	-

(*1) It has changed from the subsidiary of Hanwha Q CELLS & Advanced Materials Corporation to the direct subsidiary of Hanwha Solutions Corporation as the Company merged Hanwha Q CELLS & Advanced Materials Corporation during the current period.

(*2) Hanwha Galleria Timeworld Co., Ltd. has been incorporated as a wholly owned subsidiary of Hanwha Galleria Co., Ltd. in the course of tender offer for the shares in this fiscal year. After that, the percentage of ownership of Hanwha Galleria Co., Ltd. has decreased due to the exercise of a third party's stock warrants.

(*3) Two or more intermediate parent companies hold stakes, and the listed share is the effective share of the control combined.

(*4) The Group does not own any shares. The Group was judged to be controlling by considering the power over the investee , its exposure to variable returns, and its ability to use power to affect its returns.

2) Changes in the Group's interests in subsidiaries that do not result in a loss of control are as follows:

In thousands of Korean won	Hanwha Galleria Timeworld Co., Ltd.	
Percentage of ownership before trading	86.92%	
Percentage of ownership after trading	99.99%	
Consideration amount (A)		(17,903,887)
Changes in non-controlling interests (B)		(16,693,622)
Changes in other invested capital (A-B)		(1,210,265)

(2) Changes of scope of consolidation.

1) Subsidiaries newly included in the consolidation for the year ended December 31, 2020, are as follows:

Company Name		Reason
Hanwha Solutions Corporation		
	HAMC Holdings Corp. Q CELLS ASSET MANAGEMENT LIMITED	Newly established
Hanwha City Development Co., Ltd.		
	West Ochang Techno Valley Co., ltd. The Second Yong In Techno Valley Co, Ltd	Newly established
Hanwha Q CELLS Co., Ltd.		
	ALDGATE EAST INVESTMENTS, SL ALFAZ DIRECTORSHIP, SL ALQUIZAR INVESTMENTS, SL ANNAPURNA SERVICIOS EMPRESARIALES, SL BENIF INVESTMENTS, SL BURETE DIRECTORSHIP, SL CABUYA CORPORATE SERVICES, SL CANARY WHARF INVESTMENTS, SL CANNING TOWN INVESTMENTS, SL COMBA DIRECTORSHIP, SL CONVENT GARDEN INVESTMENTS, SL DICKSON SERVICIOS EMPRESARIALES, SL EMPER INVESTMENTS, SL ENDINO SERVICIOS EMPRESARIALES, SL GARDAYA INVESTMENTS, SL HQC PORTUGAL HOLDINGS, LDA (Formerly, QSUN PORTUGAL 1, UNIPESSOAL LDA) INCOGNITWORLD 2, UNIPESSOAL LDA INCOGNITWORLD 3, UNIPESSOAL LDA INCOGNITWORLD 4, UNIPESSOAL LDA INCOGNITWORLD 5, UNIPESSOAL LDA KADOK CORPORATE SERVICES, SL KAMPALA CORPORATE SERVICES, SL MALHADA GREEN 2, UNIPESSOAL LDA MONTALBAN DIRECTORSHIP, SL NEPAL SERVICIOS EMPRESARIALES, SL OTERO DIRECTORSHIP, SL QSUN PORTUGAL 2, UNIPESSOAL LDA QSUN PORTUGAL 3, UNIPESSOAL LDA QSUN PORTUGAL 4, UNIPESSOAL LDA QSUN PORTUGAL 5, UNIPESSOAL LDA QSUN PORTUGAL 6, UNIPESSOAL LDA QSUN PORTUGAL 7, UNIPESSOAL LDA	Newly established
	BOLERO ENERGY, S.L. CAMPANA ENERGY, S.L. CAPRICORNIO ENERGY, S.L. CLAVE DE SOL ENERGY, S.L.U DIONISIO SUN, S.L. GALAXY ENERGY, S.L. GALGO POWER, S.L. GAVILAN POWER, S.L.U GERIFALTE POWER, S.L.U Growing Energy Labs, Inc. GREEN RIC ENERGY, S.L. HARRIER POWER, S.L.U	Newly acquired

Company Name		Reason
	HESTIA SUN, S.L. IRON POWER ENERGY, S.L.U LASTRAFI POWER, S.L. LINE ENERGY, S.L.U LEBREL POWER, S.L. PALOMA POWER, S.L. PODENCO POWER, S.L. REAL ENERGY POWER, S.L. RIMA ENERGY, S.L.U SACRAMETO DIRECTORSHIP, S.L. SILVER RIC ENERGY, S.L. SPRING POWER, S.L. VALS ENERGY POWER, S.L.	
HANWHA Global Asset Corporation		
	Coniglio Solar Holdings, LLC HQC Solar Holdings 1, LLC (formerly, H-Flats Solar Holdings, LLC) Kellam Solar Class B, LLC Kellam Solar Holdings, LLC Rippey Solar Holdings, LLC	Newly established
	BT Coniglio Solar, LLC BT Cooke Solar, LLC BT Kellam Solar, LLC	Newly acquired

2) Subsidiaries newly excluded from the consolidation for the year ended December 31, 2020, are as follows:

Company Name	Company Name	Reason
Hanwha Solutions Corporation		
	Hanwha Q CELLS & Advanced Materials Corporation	Merger Elimination
Hanwha International Corp.		
	Eagle Petroleum Monterey, LLC Eagle Petroleum, LLC	Share sales
	Hanwha America Development LLC	Liquidation
Hanwha Q CELLS Co., Ltd.		
	Hanwha Q CELLS Technology Co., Ltd. Hanwha Solar Engineering R&D center Co., Ltd.	Liquidation
	Elektrownia Fotowoltaiczna Kreznica Okragla Sp. z o.o Lodz Solar Sp. z o.o. Mazovia Solar 1 Sp. Z o.o. Mazovia Solar 2 Sp. Z o.o. Mazovia Solar 3 Sp. Z o.o. QSUN 1 QSUN 10 QSUN 11 QSUN 12 QSUN 13 QSUN 14 QSUN 15 QSUN 16 QSUN 17 QSUN 18 QSUN 19 QSUN 2 QSUN 3 QSUN 4 QSUN 5 QSUN 6 QSUN 7 QSUN 8 QSUN 9 QSUN Poland Sp. z o.o. QSUN 20 Sp. z o.o. Sociedade Poente Deslumbrante Lda.	Share sales
HANWHA Global Asset Corporation		
	BT Cooke Solar, LLC BT Kellam Solar, LLC	Share sales to associates

(3) Financial information of major subsidiaries

The summary financial information of the major subsidiaries as of December 31, 2020 and for the year ended December 31, 2020 are as follows:

In thousands of Korean won

	Assets	Liabilities	Equity	Revenue	Net Income(Loss)
Gyeonggi Yongin Techno Valley Co., Ltd.	₩ 20,437,941	₩ 12,238,168	₩ 8,199,773	₩ 178,545,484	₩ 25,804,834
Gimhae Techno Valley Co., Ltd.	13,396,042	353,347	13,042,695	-	(470,979)
Seosan Techno Valley	12,564,946	579,457	11,985,489	-	(731,275)
West Ochang Techno Valley Co., ltd.	2,308,920	1,740,655	568,265	-	(431,735)
Asan Techno Valley	1,665,776	-	1,665,776	-	60,668
Anseong Techno Valley	4,573,980	5,713,194	(1,139,214)	-	(1,641,599)
H-Valley Co., Ltd.	2,707,991	15,064,833	(12,356,842)	-	(14,236,776)
The Second Yong In Techno Valley Co, Ltd	4,930,050	5,662	4,924,388	-	(40,403)
Hanwha Galleria Co., Ltd.	1,893,531,965	1,314,344,026	579,187,939	344,204,172	8,128,721
Hanwha Galleria Timeworld Co., Ltd.	342,476,087	208,197,081	134,279,006	133,730,390	7,035,573
Hanwha City Development Co., Ltd.	203,155,282	9,709,488	193,445,794	8,623,000	10,614,329
Hanwha B&B Co Ltd.	9,191,872	3,587,420	5,604,452	8,165,145	(3,212,683)
Yungam Techno Solar Power Corp.	9,351,015	930,548	8,420,467	944,498	42,586
Yungam Hae-oreum Solar Power Corp.	6,538,657	626,056	5,912,601	620,577	(51,977)
Hi-pass Solar Power Corp.	9,858,738	6,426,754	3,431,984	1,545,131	197,393
HANWHA Global Asset Corporation	669,928,658	26,168,533	643,760,125	543,413	(3,025,672)
Hanwha Compound Corporation	76,544,966	26,171,333	50,373,633	153,509,814	(1,187,721)
Hanwha Chemical Overseas Holdings, Co., Ltd.	78,474,260	1,596,416	76,877,844	-	(1,946,187)
Sunrise Solar Corp.	1,121,132	856,711	264,421	209,672	(690)
Haesarang Solar Power Corp.	9,999,824	6,729,468	3,270,356	1,264,490	27,308
Haeorum PV Plant Corporation	7,285,450	5,260,543	2,024,907	220,216	(227,329)
Hanwha Chemical (Shanghai) Co.,Ltd.	35,217,941	27,400,379	7,817,562	128,715,224	4,300,319
Hanwha Advanced Materials Beijing Co., Ltd.	23,859,114	22,834,703	1,024,411	21,176,432	(4,549,882)
Hanwha Advanced Materials Chongqing Co.,Ltd.	9,132,741	12,608,067	(3,475,326)	7,114,520	(1,773,938)
Hanwha Advanced Materials Europe, s.r.o.	88,001,596	81,987,054	6,014,542	82,140,139	(7,662,124)
Hanwha Advanced Materials Germany GmbH	22,859,031	66,241,156	(43,382,125)	58,684,210	(14,356,786)
Hanwha Advanced Materials Holdings USA Inc.	43,080,184	3,464,515	39,615,669	-	-
Hanwha Advanced Materials Mexico S.De R.L. De C.V.	37,401,803	34,311,322	3,090,481	31,896,556	(3,252,446)
Hanwha Advanced Materials Shanghai Co., Ltd.	44,533,894	32,644,296	11,889,598	25,526,695	(7,093,247)
Hanwha America Development Inc.	108,567,659	2,875,405	105,692,254	-	3,540,303
Hanwha Chemical (Ningbo) Co., Ltd.	413,426,609	109,072,848	304,353,761	386,078,506	57,833,491
Hanwha Chemical (Thailand) Co., Ltd.	37,786,523	4,652,189	33,134,334	44,051,878	2,428,753
Hanwha Chemical Malaysia Sdn. Bhd.	35,897,960	29,609,591	6,288,369	148,748,829	3,893,621
Hanwha Holdings(USA), Inc.(*1)	645,489,418	391,286,298	254,203,120	522,737,827	(13,596,908)
Hanwha International Corp.	54,698,234	485,334	54,212,900	-	(34,788)
Hanwha Q CELLS Americas Holdings. Corp.(*2)	723,652,013	553,854,076	169,797,937	854,691,757	(3,958,897)
Hanwha Q CELLS Australia Pty Ltd.	57,111,446	49,517,152	7,594,294	99,490,287	405,484
Hanwha Q CELLS Chile SpA	37,213,490	18,742,906	18,470,584	5,716,633	2,301,278
Hanwha Q CELLS Co., Ltd. (*3)	2,550,286,608	1,328,348,343	1,221,938,265	2,060,208,332	(40,824,058)
Hanwha Q CELLS GmbH	588,210,357	293,113,975	295,096,382	836,147,671	(18,520,937)
Hanwha Q CELLS Investment Co., Ltd.	557,534,308	93,444,987	464,089,321	-	(10,382,976)
Hanwha Q CELLS Malaysia Sdn. Bhd.	614,364,964	485,784,232	128,580,732	508,958,803	(9,524,287)
Hanwha Q CELLS Turkey (*4)	28,359,019	15,411,695	12,947,324	60,438,085	(1,761,611)

(*1) Financial information of intermediate parent company Hanwha Holdings (USA), Inc. and its 13 subsidiaries.
(*2) Financial information of intermediate parent company Hanwha Q CELLS Americas Holdings. Corp. and its 23 subsidiaries.
(*3) Financial information of intermediate parent company Hanwha Q CELLS Co., Ltd. and its 18 subsidiaries.
(*4) Financial information of intermediate parent company Hanwha Q CELLS Turkey and its 26 subsidiaries.

2. BASIS PREPARATION OF CONSOLIDATED FINANCIAL STATEMENTS PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES:

(1) Basis of consolidation

The consolidation entity and its subsidiaries (the "Group") have prepared the consolidated financial statements in accordance with the Korean International Financial Reporting Standards ("K-IFRSs").

The principal accounting policies are set out below. Except for the effect of the amendments to K-IFRSs and new interpretations set out below, the principal accounting policies used to prepare the consolidated financial statements as of and for the year ended December 31, 2020 are consistent with the accounting policies used to prepare the consolidated financial statements as of and for the year ended December 31, 2019.

The accompanying consolidated financial statements have been prepared on the historical cost basis except for certain properties, non-current assets and financial instruments that are measured at fair values, as explained in the accounting policies below. Historical cost is based on the fair values of the consideration given.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Group takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at the measurement date. Fair value for measurement and disclosure purposes in these consolidated financial statements is determined on such a basis, except for share-based payment transactions that are within the scope of K-IFRS 1102 Share-Based Payment; leasing transactions that are within the scope of K-IFRS 1116 Leases; and measurements that have some similarities to fair value but are not fair valued, such as net realizable value in K-IFRS 1002 Inventories or value in use in K-IFRS 1036 Impairment of Assets.

The managements have, at the time of approving the consolidated financial statements, a reasonable expectation that the Group has adequate resources to continue in operational existence for the foreseeable future. Thus, they continue to adopt the going concern basis of accounting in preparing the consolidated financial statements.

1) New and amended K-IFRSs and interpretations that are effective for the current year are as follows:

- K-IFRS 1103 Definition of a business (Amendment)

The amendments clarify that while businesses usually have outputs, the outputs are not required for an integrated set of activities and assets to qualify as a business. To be considered a business an acquired set of activities and assets must include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs.

The amendments remove the assessment of whether market participants are capable of replacing any missing inputs or processes and continuing to produce outputs. The amendments also introduce additional guidance that helps to determine whether a substantive process has been acquired.

The amendments introduce an optional concentration test that permits a simplified assessment of whether an acquired set of activities and assets is not a business. Under the optional concentration test, the acquired set of activities and assets is not a business if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or group of similar assets.

The amendments are applied prospectively to all business combinations and asset acquisitions for which the acquisition date is on or after 1 January 2020.

- References to the Conceptual Framework in K-IFRSs (Amendments)

The amendments include consequential amendments to affected standards so that they refer to the revised Conceptual Framework (2018). Not all amendments, however, update those pronouncements with regard to references to and quotes from the framework so that they refer to the revised Conceptual Framework. Some pronouncements are only updated to indicate which version of the framework they are referencing to (the Framework (2007), the IASB Framework of 2010, or the new revised Framework of 2018) or to indicate that definitions in the standard have not been updated with the new definitions developed in the revised Conceptual Framework. The standards which are amended are K-IFRS 1102, 1103, 1106, 1114, 1001, 1008, 1034, 1037, 1038, 2112, 2119, 2120, 2122, and 2032.

- K-IFRS 1116 Leases – Impact of the Initial Application of COVID-19-Related Rent Concessions(Amendment)

The amendments provide practical relief to lessees in accounting for rent concessions occurring as a direct consequence of COVID-19, by introducing a practical expedient to K-IFRS 1116. The practical expedient permits a lessee to elect not to assess whether a COVID-19-related rent concession is a lease modification. A lessee that makes this election shall account for any change in lease payments resulting from the COVID-19-related rent concession the same way it would account for the change applying K-IFRS 1116 if the change was not a lease modification.

The practical expedient applies only to rent concessions occurring as a direct consequence of COVID-19 and only if all of the following conditions are met:

- The change in lease payments results in revised consideration for the lease that is substantially the same as, or less than, the consideration for the lease immediately preceding the change;
- Any reduction in lease payments affects only payments originally due on or before May 30, 2021 (a rent concession meets this condition if it results in reduced lease payments on or before May 30, 2021 and increased lease payments that extend beyond May 30, 2021);
- There is no substantive change to other terms and conditions of the lease.

- K-IFRS 1109 and K-IFRS 1107 – Impact of the Initial Application of Interest Rate Benchmark Reform (Amendments)

These amendments modify specific hedge accounting requirements to allow hedge accounting to continue for affected hedges during the period of uncertainty before the hedged items or hedging instruments affected by the current interest rate benchmarks are amended as a result of the on-going interest rate benchmark reforms.

The amendments are relevant to the Group given that it applies hedge accounting to its benchmark interest rate exposures.

The amendments also introduce new disclosure requirements to K-IFRS 1107 for hedging relationships that are subject to the exceptions introduced by the amendments to K-IFRS 1109.

- K-IFRS 1116 Leases – Impact of the Initial Application of IFRS IC's interpretation for 'Enforceable Period'

The IFRS Interpretations Committee(IFRS IC) observed that, in determining the enforceable period of lease in accordance with K-IFRS 1116, an entity considers the broader economics of the contract, and not only contractual termination payments. The IFRS IC further observed that, if only one of the lessee or the lessor has the right to terminate the lease without permission from the other party with no more than an insignificant penalty, the contract is enforceable beyond the date on which the contract can be terminated by that party.

However, based on the permission of the Due Process Oversight Committee's relevant agenda decision, the Group would reflect the agenda decision as changes in accounting policy after a full review of the impact of the IFRS IC's agenda decision in the consolidated financial statements and related disclosure. Thus, the IFRS IC's agenda decision was not yet reflected in this consolidated financial statements.

Applying the above IFRS IC's agenda decision may change the judgment of the enforceable period for some lease agreements made by the Group, and there are no material lease agreements that are likely to change the judgment of the enforceable period as of December 31, 2020.

- K-IFRS 1001 and K-IFRS 1008 Definition of Material (Amendment)

The amendments make the definition of material in K-IFRS 1001 easier to understand and are not intended to alter the underlying concept of materiality in K-IFRSs. The concept of 'obscuring' material information with immaterial information has been included as part of the new definition. The threshold for materiality influencing users has been changed from 'could influence' to 'could reasonably be expected to influence'. The definition of material in K-IFRS 1008 has been replaced by a reference to the definition of material in K-IFRS 1001. In addition, the IASB amended other Standards and the Conceptual Framework that contain a definition of 'material' or refer to the term 'material' to ensure consistency.

New and amended K-IFRSs and interpretations described above have no significant impact on the consolidated financial statements at the end of the current year.

2) The Group has not applied earlier the following new standards and amendments that were enacted and released as of the date of approval for the issue of consolidated financial statements that have not yet arrived at the effective date.

- K-IFRS 1001 Classification of Liabilities as Current or Non-current (Amendment)

The amendments to K-IFRS 1001 affect only the presentation of liabilities as current or non-current in the statement of financial position and not the amount or timing of recognition of any asset, liability, income or expenses, or the information disclosed about those items.

The amendments clarify that the classification of liabilities as current or non-current is based on rights that are in existence at the end of the reporting period, specify that classification is unaffected by expectations about whether an entity will exercise its right to defer settlement of a liability, explain that rights are in existence if covenants are complied with at the end of the reporting period, and introduce a definition of 'settlement' to make clear that settlement refers to the transfer to the counterparty of cash, equity instruments, other assets or services.

The amendments are applied retrospectively for annual periods beginning on or after January 1, 2023, with early application permitted.

- K-IFRS 1103 Reference to the Conceptual Framework

The amendments update K-IFRS 1103 so that it refers to the Conceptual Framework (2018) instead of the Framework (2007). They also add to K-IFRS 1103 a requirement that, for obligations within the scope of K-IFRS 1037, an acquirer applies K-IFRS 1037 to determine whether at the acquisition date a present obligation exists as a result of past events. For a levy that would be within the scope of K-IFRS 2121 Levies, the acquirer applies K-IFRS 2121 to determine whether the obligating event that gives rise to a liability to pay the levy has occurred by the acquisition date.

Finally, the amendments add an explicit statement that an acquirer does not recognise contingent assets acquired in a business combination.

The amendments are effective for business combinations for which the date of acquisition is on or after the beginning of the first annual period beginning on or after January 1, 2022. Early application is permitted if an entity also applies all other updated references (published together with the updated Conceptual Framework) at the same time or earlier.

- K-IFRS 1016 Property, Plant and Equipment (Amendment)

The amendments prohibit deducting from the cost of an item of property, plant and equipment any proceeds from selling items produced before that asset is available for use, i.e., proceeds while bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Consequently, an entity recognises such sales proceeds and related costs in profit or loss. The entity measures the cost of those items in accordance with K-IFRS 1002 Inventories.

The amendments also clarify the meaning of ‘testing whether an asset is functioning properly’. K-IFRS 1016 now specifies this as assessing whether the technical and physical performance of the asset is such that it is capable of being used in the production or supply of goods or services, for rental to others, or for administrative purposes.

If not presented separately in the statement of comprehensive income, the financial statements shall disclose the amounts of proceeds and cost included in profit or loss that relate to items produced that are not an output of the entity’s ordinary activities, and which line item(s) in the statement of comprehensive income include(s) such proceeds and cost.

The amendments are applied retrospectively, but only to items of property, plant and equipment that are brought to the location and condition necessary for them to be capable of operating in the manner intended by management on or after the beginning of the earliest period presented in the financial statements in which the entity first applies the amendments.

The entity shall recognise the cumulative effect of initially applying the amendments as an adjustment to the opening balance of retained earnings (or other component of equity, as appropriate) at the beginning of that earliest period presented.The amendments are effective for annual periods beginning on or after January 1, 2022, with early application permitted.

- K-IFRS 1037 Onerous Contracts—Cost of Fulfilling a Contract (Amendment)

The amendments specify that the ‘cost of fulfilling’ a contract comprises the ‘costs that relate directly to the contract’. Costs that relate directly to a contract consist of both the incremental costs of fulfilling that contract (examples would be direct labour or materials) and an allocation of other costs that relate directly to fulfilling contracts (an example would be the allocation of the depreciation charge for an item of property, plant and equipment used in fulfilling the contract).
The amendments apply to contracts for which the entity has not yet fulfilled all its obligations at the beginning of the annual reporting period in which the entity first applies the amendments. Comparatives are not restated. Instead, the entity shall recognise the cumulative effect of initially applying the amendments as an adjustment to the opening balance of retained earnings or other component of equity, as appropriate, at the date of initial application.

The amendments are effective for annual periods beginning on or after 1 January 2022, with early application permitted.

- Annual Improvements to K-IFRSs 2018–2020

The annual improvements include amendments to four standards such as K-IFRS 1101 First-time Adoption of K-IFRS, K-IFRS 1109 Financial Instruments, K-IFRS 1116 Leases, and K-IFRS 1041 Agriculture.

① K-IFRS 1101 First-time Adoption of K-IFRS (Amendment)
The amendment provides additional relief to a subsidiary which becomes a first-time adopter later than its parent in respect of accounting for cumulative translation differences. As a result of the amendment, a subsidiary that uses the exemption in K-IFRS 1101 paragraph D16(1) can now also elect to measure cumulative translation differences for all foreign operations at the carrying amount that would be included in the parent’s consolidated financial statements, based on the parent’s date of transition to IFRS Standards, if no adjustments were made for consolidation procedures and for the effects of the business combination in which the parent acquired the subsidiary. A similar election is available to an associate or a joint venture that uses the exemption in K-IFRS 1101 paragraph D16(1).

The amendment is effective for annual periods beginning on or after January 1, 2022, with early application permitted.

② K-IFRS 1109 Financial Instruments (Amendment)
The amendment clarifies that in applying the ‘10 %’ test to assess whether to derecognise a financial liability, an entity includes only fees paid or received between the entity (the borrower) and the lender, including fees paid or received by either the entity or the lender on the other’s behalf.

The amendment is applied prospectively to modifications and exchanges that occur on or after the date the entity first applies the amendment.

The amendment is effective for annual periods beginning on or after January 1, 2022, with early application permitted.

③ K-IFRS 1116 Leases (Amendment)
The amendment removes the illustration of the reimbursement of leasehold improvements.

As the amendment to K-IFRS 1116 only regards an illustrative example, no effective date is stated.

④ K-IFRS 1041 Agriculture (Amendment)
The amendment removes the requirement in K-IFRS 1041 for entities to exclude cash flows for taxation when measuring fair value. This aligns the fair value measurement in K-IFRS 1041 with the requirements of K-IFRS 1113 Fair Value Measurement to use internally consistent cash flows and discount rates and enables preparers to determine whether to use pretax or post-tax cash flows and discount rates for the most appropriate fair value measurement.

The amendment is applied prospectively, i.e. for fair value measurements on or after the date an entity initially applies the amendment.

The amendment is effective for annual periods beginning on or after January 1, 2022, with early application permitted.

The Group is reviewing the effects of the listed enactments and amendments on its consolidated financial statements.

(2) Basis of Consolidation

The consolidated financial statements incorporate the financial statements of the Group and entities controlled by the Group (and its subsidiaries) made up to December 31 each year. Control is achieved when the Group 1) has the power over the investee, 2) is exposed, or has rights, to variable returns from its involvement with the investee, and 3) has the ability to use its power to affect its returns. Besides, the Group reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control listed above.

When the Group has less than a majority of the voting rights of an investee, it considers that it has power over the investee when the voting rights are sufficient to give it the practical ability to direct the activities of the investee unilaterally. The Group considers all relevant facts and circumstances in assessing whether or not the Group 's voting rights in an investee are sufficient to give it power, including:

- The size of the Group 's holding of voting rights relative to the size and dispersion of holdings of the other vote holders;
- Potential voting rights held by the Group, other vote holders or other parties;
- Rights arising from other contractual arrangements;
- Any additional facts and circumstances that indicate that the Group has, or does not have, the current ability to direct the relevant activities at the time that decisions need to be made, including voting patterns at previous shareholders' meetings.

Consolidation of a subsidiary begins when the Group obtains control over the subsidiary and ceases when the Group loses control of the subsidiary. Specifically, the results of subsidiaries acquired or disposed of during the year are included in profit or loss from the date the Group gains control until the date when the Group ceases to control the subsidiary. Profit or loss and each component of other comprehensive income are attributed to the owners of the Group and to the non-controlling interests. Total comprehensive income of the subsidiaries is attributed to the owners of the Group and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.
If an entity that constitutes a group uses accounting policies that are different from those adopted in consolidated financial statements for the same transactions or events that occur in similar circumstances, it prepares consolidated financial statements by amending those financial statements accordingly.

All inter-group assets and liabilities, equity, income, expenses and cash flows relating to transactions between the members of the Group are eliminated on consolidation financial statements.

Non-controlling interests in subsidiaries are identified separately from the Group’s equity therein. Those interests of non-controlling shareholders that present ownership interests entitling their holders to a proportionate share of net assets upon liquidation may initially be measured at 1) fair value or 2) at the non-controlling interests’ proportionate share of the fair value of the acquiree’s identifiable net assets.

The choice of measurement is made on an acquisition-by-acquisition basis. Other non-controlling interests are initially measured at fair value. Subsequent to acquisition, the carrying amount of non-controlling interests is the amount of those interests at initial recognition plus the non-controlling interests’ share of subsequent changes in equity. Total comprehensive income is attributed to non-controlling interests even if this results in the non-controlling interests having a deficit balance.

Changes in the Group’s interests in subsidiaries that do not result in a loss of control are accounted for as equity transactions. The carrying amounts of the Group’s interests and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiaries. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognized directly in equity and attributed to owners of the Group.

When the Group loses control of a subsidiary, a gain or loss on disposal is calculated as the difference between (i) the aggregate of the fair value of the consideration received and the fair value of any retained interest and (ii) the previous carrying amount of the assets (including goodwill), less liabilities of the subsidiary and any non-controlling interests. All amounts previously recognized in other comprehensive income in relation to that subsidiary are accounted for as if the Group had directly disposed of the related assets or liabilities of the subsidiary (i.e., reclassified to profit or loss or transferred to another category of equity as required/permitted by applicable K-IFRSs). The fair value of any investment retained in the former subsidiary at the date when control is lost is recognized as the fair value on initial recognition for subsequent accounting under K-IFRS 1109 Financial Instruments when applicable, or the cost on initial recognition of an investment in an associate or a joint venture.

(3) Business Combination

Acquisitions of businesses are accounted for using the acquisition method. The consideration transferred in a business combination is measured at fair value, which is calculated as the sum of the acquisition-date fair values of the assets transferred by the Group, liabilities incurred by the Group to the former owners of the acquiree and the equity interest issued by the Group in exchange for control of the acquiree. Acquisition-related costs are recognized in profit or loss as incurred.

- Deferred tax assets or liabilities and liabilities or assets related to employee benefit arrangements are recognized and measured in accordance with K-IFRS 1012 Income Taxes and K-IFRS 1019 Employee Benefits respectively
- Liabilities or equity instruments related to share-based payment arrangements of the acquiree or share-based payment arrangements of the Group entered into to replace share-based payment arrangements of the acquiree are measured in accordance with K-IFRS 1102 Share-based Payment at the acquisition date
- Assets (or disposal groups) that are classified as held for sale in accordance with K-IFRS 1105 Non-current Assets Held for Sale and Discontinued Operations are measured in accordance with K-IFRS 1105

Goodwill is measured as the excess of the sum of: a) the consideration transferred, b) the amount of any non-controlling interests in the acquiree, and c) the fair value of the acquirer's previously held equity interest in the acquiree (if any) over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed. If, after reassessment, the net of the acquisition-date amounts of the identifiable assets acquired and liabilities assumed exceeds the sum of: a) the consideration transferred, b) the amount of any non-controlling interests in the acquiree, and c) the fair value of the acquirer's previously held interest in the acquiree (if any); the excess is recognized immediately in profit or loss as a bargain purchase gain.

If the non-controlling interest in the acquiree at the acquisition date is the current interest and the holder is entitled to a proportionate share of the net assets of the entity upon current, the non-controlling interest may be measured at the acquisition date in one of the current proportionate shares of the equity instruments recognized for the acquiree's identifiable net assets or fair values. The selection of this measurement is made for each acquisition transaction. All other non-controlling interest components are measured at their acquisition-date fair values unless the measurement basis is otherwise required by K-IFRS.

When the consideration transferred by the Group in a business combination includes assets and liabilities arising from contingent consideration arrangements, the contingent consideration is measured at its acquisition-date fair value and included as part of the consideration transferred in a business combination. Changes in fair value of the contingent consideration that qualify as measurement period adjustments are adjusted retrospectively, with corresponding adjustments against goodwill. Adjustments of measurement period are adjustments that arise from additional information obtained during the ‘measurement period’ (which cannot exceed one year from the acquisition date) about facts and circumstances that existed at the acquisition date.

The subsequent accounting for changes in the fair value of the contingent consideration that do not qualify as measurement period adjustments depend on how the contingent consideration is classified. Contingent consideration that is classified as equity is not remeasured at subsequent reporting dates and its subsequent settlement is accounted for within equity. Other contingent consideration is remeasured to fair value at subsequent reporting dates with changes in fair value recognized in profit or loss.

When a business combination is achieved in stages, the Group’s previously held interests in the acquired entity are remeasured at its acquisition-date fair value and the resulting gain or loss, if any, is recognized in profit or loss. Previously held interests in the acquiree prior to the acquisition date that have previously been recognized in other comprehensive income are reclassified where such a same treatment as would be appropriate if that interest were disposed of.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period (see above), or additional assets or liabilities are recognized, to reflect new information obtained about facts and circumstances that existed as of the acquisition date that, if known, would have affected the amounts recognized as of that date.

(4) Investments in associates and joint ventures

An associate is an entity over which the Group has significant influence and that is neither a subsidiary nor an interest in a joint venture. Significant influence is the power to participate in the financial and operating policy decisions of the investee but is not control or joint control over those policies.

A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the joint arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

The results and assets and liabilities of associates or joint ventures are incorporated in these consolidated financial statements using the equity method of accounting, except when the investment is classified as held for sale, in which case it is accounted for in accordance with K-IFRS 1105. Under the equity method, an investment in an associate or a joint venture is recognized initially in the consolidated statement of financial position at cost and adjusted thereafter to recognize the Group’s share of the profit or loss and other comprehensive income of the associate or joint venture. When the Group’s share of losses of an associate or a joint venture exceeds the Group’s interest in that associate or joint venture (which includes any long-term interests that, in substance, form part of the Group’s net investment in the associate or joint venture), the Group discontinues recognizing its share of further losses. Additional losses are recognized only to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associate or joint venture.

An investment in an associate or a joint venture is accounted for using the equity method from the date on which the investee becomes an associate or a joint venture. On acquisition of the investment in an associate or a joint venture, any excess of the cost of the investment over the Group’s share of the net fair value of the identifiable assets and liabilities of the investee is recognized as goodwill, which is included within the carrying amount of the investment. Any excess of the Group’s share of the net fair value of the identifiable assets and liabilities over the cost of the investment, after reassessment, is recognized immediately in profit or loss in the period in which the investment is acquired.

In addition, if the ownership interest in an associate or a joint venture decreases, but the equity method continues to apply, the proportion of the gain or loss previously recognized in other comprehensive income is reclassified to profit or loss as a result of the disposal of the related asset or liability. Besides, if part of an investment in an associate or a joint venture meets the criteria for classification as held for sale, K-IFRS 1105 applies.

The requirements of K-IFRS 1028 are applied to determine whether it is necessary to recognize any impairment loss with respect to the Group’s investment in an associate or a joint venture. When there are any signs that may be impaired, the entire carrying amount of the investment (including goodwill) is tested for impairment in accordance with K-IFRS 1036 as a single asset by comparing its recoverable amount (higher of value in use or fair value less costs of disposal) with its carrying amount. Any impairment loss recognized is not allocated to any asset, including goodwill that forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized in accordance with K-IFRS 1036 to the extent that the recoverable amount of the investment subsequently increases.

The Group discontinues the use of the equity method from the date when the investment ceases to be an associate or a joint venture. When the Group retains an interest in the former associate or a joint venture and the retained interest, the Group measures the retained interest at fair value at that date and the fair value is regarded as its fair value on initial recognition in accordance with K-IFRS 1109. The difference between the carrying amount of the associate or a joint venture at the date the equity method was discontinued, and the fair value of any retained interest and any proceeds from disposing of a part interest in the associate or a joint venture is included in the determination of the gain or loss on disposal of the associate or joint venture. In addition, the Group accounts for all amounts previously recognized in other comprehensive income in relation to that associate on the same basis as would be required if that associate had directly disposed of the related assets or liabilities. Therefore, if a gain or loss previously recognized in other comprehensive income by that associate or joint venture would be reclassified to profit or loss on the disposal of the related assets or liabilities, the Group reclassifies the gain or loss from equity to profit or loss (as a reclassification adjustment) when the associate or joint venture is disposed of.

When the Group reduces its ownership interest in an associate or a joint venture, but the Group continues to use the equity method, the Group reclassifies to profit or loss the proportion of the gain or loss that had previously been recognized in other comprehensive income relating to that reduction in ownership interest if that gain or loss would be reclassified to profit or loss on the disposal of the related assets or liabilities.

When the equity method becomes a joint venture investment or vice versa, the group continues to apply the equity method and does not remeasure the remaining equity interests.

When the Group transacts with an associate or a joint venture of the Group, profits and losses resulting from the transactions with the associate or joint venture are recognized in the Group’s consolidated financial statements only to the extent of interests in the associate or joint venture that are not related to the Group.

The Group applies K-IFRS 1109, including the impairment requirements, to long-term interests in an associate or joint venture to which the equity method is not applied and which form part of the net investment in the investee. Furthermore, in applying K-IFRS 1109 to long-term interests, the Group does not take into account adjustments to their carrying amount required by K-IFRS 1028 (i.e. adjustments to the carrying amount of long-term interests arising from the allocation of losses of the investee or assessment of impairment in accordance with K-IFRS 1028).

(5) Interests in joint operations

A joint operation is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

When the Group undertakes its activities under joint operations, the Group as a joint operator recognizes in relation to its interest in a joint operation:

- its assets, including its share of any assets held jointly;
- its liabilities, including its share of any liabilities incurred jointly;
- its revenue from the sale of its share of the output arising from the joint operation;
- its share of the revenue from the sale of the output by the joint operation;
- its expenses, including its share of any expenses incurred jointly.

The Group accounts for the assets, liabilities, revenues and expenses relating to its interest in a joint operation in accordance with the K-IFRS applicable to the particular assets, liabilities, revenues and expenses.

When the Group transacts with a joint operation in which the Group is a joint operator (such as a sale or contribution of assets), the Group is considered to be conducting the transaction with the other parties to the joint operation, and gains and losses resulting from the transactions are recognized in the Group's consolidated financial statements only to the extent of other parties' interests in the joint operation.

When the Group transacts with a joint operation in which the Group is a joint operator (such as a purchase of assets), the Group does not recognize its share of the gains and losses until it resells those assets to a third party.

(6) Goodwill

Goodwill resulting from an acquisition of a business is carried at cost as established at the date of acquisition of the business less accumulated impairment losses, if any.

For the purpose of impairment testing, goodwill is allocated to each of the Group's cash-generating units ("CGU") (or groups of CGU) that is expected to benefit from the synergies of the combination.

A CGU to which goodwill has been allocated is tested for impairment annually, or more frequently when there is indication that the unit may be impaired. If the recoverable amount of the CGU is less than its carrying amount, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the unit and then to the other assets of the unit on a pro-rata basis based on the carrying amount of each asset in the unit. Any impairment loss for goodwill is recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods.

On disposal of the relevant CGU, the attributable amount of goodwill is included in the determination of the profit or loss on disposal.

(7) Non-current assets held for sale

Non-current assets (and disposal groups) classified as held for sale are measured at the lower of carrying amount and fair value less costs to sell.

Non-current assets and disposal groups are classified as held for sale if their carrying amount will be recovered through a sale transaction rather than through continuing use. This condition is regarded as met only when the sale is highly probable and the asset (or disposal group) is available for immediate sale in its present condition. Management must be committed to the sale which should be expected to qualify for recognition as a completed sale within one year from the date of classification.

When the Group is committed to a sale plan involving loss of control of a subsidiary, all of the assets and liabilities of that subsidiary are classified as held for sale when the criteria described above are met, regardless of whether the Group will retain a non-controlling interest in its former subsidiary after the sale.

When the Group is committed to a sale plan involving disposal of an investment in an associate or, a portion of an investment in an associate, the investment, or the portion of the investment in the associate that will be disposed of is classified as held for sale when the criteria described above are met, and the Group ceases to apply the equity method in relation to the portion that is classified a held for sale. Any retained portion of an investment in an associate that has not been classified as held for sale continues to be accounted for using the equity method.

(8) Revenue recognition

The Group has applied Revenue from Contracts with Customers with K-IFRS 1115 since January 1, 2018. In accordance with K-IFRS 1115, the Group has chosen to apply the cumulative effect of initial application of the K-IFRS retrospectively to recognize it on January 1, 2018 at the date of initial application. In addition, this was applied retrospectively only to contracts that were not completed at the date of initial application, and a practical expedient was used not to restate contracts retrospectively for all contract changes made before the date of initial application.

According to K-IFRS 1115, all types of contracts are recognized by applying a five-step revenue recognition model (① Contract Identification → ② Identify Performance Obligations → ③ Transaction Price Calculation → ④ Transaction Price Allocations to performance obligations → ⑤ Revenue Recognition When Satisfied with Performance Obligations).

1) Identify performance obligations

a. Point-in-time
The Group recognizes revenue when the goods or services are transferred to the customer. In addition, the Group exports variety of finished goods or merchandises by Incoterms Group C condition. (CIF and others) Since the seller provides logistics service after passing the control to the customer, the Group identifies the relative logistics service(including insurance) as separate performance obligation.

b. Over-time
According to K-IFRS 1115, if performance obligations satisfy one or more of the three conditions of paragraph 35, performance obligations would be identified as over-time, otherwise as point-in-time. The time of revenue recognition can be changed if the Group's performance obligations satifiy over one of the three conditions of paragraph 35.

2) Allocate transaction price
The Group allocates the transaction price to the separate performance obligations in one contract based on the relative standalone selling price of each separate performance obligation. For estimating standalone selling price of each performance obligation, the Group uses the method of 'Market price adjustment approach' and others.

3) Variable transaction price
The price the customer promises due to the return right granted by the Group in accordance with the contract of sale of the goods with the customer may change. In accordance with K-IFRS 1115, the variable cost is estimated using a method that expects to be able to better anticipate the consideration to be entitled to the right to receive the expected or probable price of the right to receive the right. It recognizes revenue by including the variable price in the transaction price only to the extent that it is highly unlikely that it will carry out a significant portion of the cumulative revenue amount that has already been recognized. Amounts that the Group does not expect to have the right to receive or receive are recognized as a refund liability and the related inventories are recognized as refundable assets.

(9) Lease

1) The Group as lessee

The Group assesses whether a contract is or contains a lease, at inception of the contract. The Group recognizes a right-of-use asset and a corresponding lease liability with respect to all lease arrangements in which it is the lessee, except for short-term leases (defined as leases with a lease term of 12 months or less) and leases of low value assets (such as tablets and personal computers, small items of office furniture and telephones). For these leases, the Group recognizes the lease payments as an operating expense on a straight-line basis over the term of the lease unless another systematic basis is more representative of the time pattern in which economic benefits from the leased assets are consumed.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted by using the rate implicit in the lease. If this rate cannot be readily determined, the Group uses its incremental borrowing rate.

Lease payments included in the measurement of the lease liability comprise:

- Fixed lease payments (including in-substance fixed payments), less any lease incentives receivable;
- Variable lease payments that depend on an index or rate, initially measured using the index or rate at the commencement date;
- The amount expected to be payable by the lessee under residual value guarantees;
- The exercise price of purchase options, if the lessee is reasonably certain to exercise the options;
- Payments of penalties for terminating the lease, if the lease term reflects the exercise of an option to terminate the lease.

The lease liability is presented as a separate line in the consolidated statements of financial position.

The lease liability is subsequently measured by increasing the carrying amount to reflect interest on the lease liability (using the effective interest method) and by reducing the carrying amount to reflect the lease payments made.

The Group remeasures the lease liability (and makes a corresponding adjustment to the related right-of-use asset) whenever:

- The lease term has changed or there is a significant event or change in circumstances resulting in a change in the assessment of exercise of a purchase option, in which case the lease liability is remeasured by discounting the revised lease payments using a revised discount rate.
- The lease payments change due to changes in an index or rate or a change in expected payment under a guaranteed residual value, in which cases the lease liability is remeasured by discounting the revised lease payments using an unchanged discount rate (unless the lease payments change is due to a change in a floating interest rate, in which case a revised discount rate is used).
- A lease contract is modified and the lease modification is not accounted for as a separate lease, in which case the lease liability is remeasured based on the lease term of the modified lease by discounting the revised lease payments using a revised discount rate at the effective date of the modification.

The right-of-use assets comprise the initial measurement of the corresponding lease liability, and lease payments made at or before the commencement day excluding any lease incentives received and any initial direct costs. They are subsequently measured at cost less accumulated depreciation and impairment losses.

Whenever the Group incurs an obligation for costs to dismantle and remove a leased asset, restore the site on which it is located or restore the underlying asset to the condition required by the terms and conditions of the lease, a provision is recognized and measured under K-IFRS 1037. To the extent that the costs relate to a right-of-use asset, the costs are included in the related right-of-use asset, unless those costs are incurred to produce inventories.

Right-of-use assets are depreciated over the shorter period of lease term and useful life of the underlying asset. If a lease transfers ownership of the underlying asset or the cost of the right-of-use asset reflects that the Group expects to exercise a purchase option, the related right-of-use asset is depreciated over the useful life of the underlying asset. The depreciation starts at the commencement date of the lease. In other cases, the lessee depreciates the license asset from the commencement of the lease until the earliest date between the end of the useful life of the license asset and the end of the lease term.

The right-of-use assets are presented as a separate line in the consolidated statement of financial position.

The Group applies K-IFRS 1036 to determine whether a right-of-use asset is impaired and accounts for any identified impairment loss as described in the 'Property, Plant and Equipment' policy.

Variable rents that do not depend on an index or rate are not included in the measurement of the lease liability and the right-of-use asset. The related payments are recognized as an expense in the period in which the event or condition that triggers those payments occurs and are included in profit or loss.

As a practical expedient, K-IFRS 1116 permits a lessee not to separate non-lease components, and instead account for any lease and associated non-lease components as a single arrangement. The Group has not used this practical expedient. For a contracts that contain a lease component and one or more additional lease or non-lease components, the Group allocates the consideration in the contract to each lease component on the basis of the relative stand-alone price of the lease component and the aggregate stand-alone price of the non-lease components.

2) The Group as lessor

The Group classifies each lease as an operating lease or a finance lease. Leases that transfer most of the risks and rewards of ownership of the underlying asset are classified as finance leases, and leases that do not transfer most of the risks and rewards of ownership of the underlying asset are classified as operating leases.

In the case that the Group is an intermediate lease provider, the Group accounts for the head lease and the sublease as two separate contracts. The Group classifies the sublease as a finance lease or an operating lease according to the right-of-use assets that arises from a head lease rather than an underlying asset.

The Group recognizes the lease payments for operating leases as revenue on a straight-line basis or on a systematic basis. If other systematic criteria better represent a pattern in which the benefits of using the underlying asset are reduced, the Group applies those criteria.

The Group recognizes the lease opening direct costs incurred in the process of entering into an operating lease as expenses over the lease term on the basis of the carrying amount of the underlying asset and on the same basis as the revenue from the lease payments.

Amounts due from lessees under finance leases are recognized as receivables at the amount of the Group's net investment in the leases. Finance lease income is allocated to accounting periods so as to reflect a constant periodic rate of return on the Group's net investment outstanding in respect of the leases .

Subsequent to initial recognition, the Group regularly reviews the estimated unguaranteed residual value and applies the impairment requirements of K-IFRS 1109, recognizing an allowance for expected credit losses ("ECLs") on the lease receivables.

Finance lease income is calculated with reference to the gross carrying amount of the lease receivables, except for credit-impaired financial assets for which interest income is calculated with reference to their amortized cost (i.e., after a deduction of the loss allowance).

If a contract includes a lease element and a non-lease component, the Group applies K-IFRS 1115 to allocate the consideration of the contract to each component.

(10) Foreign Currencies

The individual financial statements of each group entity are presented in the currency of the primary economic environment in which the entity operates (its functional currency). For the purpose of the consolidated financial statements, the results and financial position of each group entity are expressed in Korean won, which is the functional currency of the entity and the presentation currency for the consolidated financial statements.

In preparing the financial statements of the individual entities, transactions in currencies other than the entity's functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Non-monetary items carried at fair value that are denominated in foreign currencies are retranslated at the rates prevailing at the date when the fair value was determined. Non-monetary items that are measured in terms of historical cost in a foreign currency are not retranslated.

Exchange differences are recognized in profit or loss in the period in which they arise except for:

- Exchange differences on foreign currency borrowings relating to assets under construction for future productive use, which are included in the cost of those assets when they are regarded as an adjustment to interest costs on those foreign currency borrowings;
- Exchange differences on transactions entered into in order to hedge certain foreign currency risks (see Note 2 (25) below for hedging accounting policies); and
- Exchange differences on monetary items receivable from or payable to a foreign operation for which settlement is neither planned nor likely to occur (therefore forming part of the net investment in the foreign operation), which are recognized initially in other comprehensive income and reclassified from equity to profit or loss on disposal or partial disposal of the net investment.

For the purpose of presenting consolidated financial statements, the assets and liabilities of the Group's foreign operations are expressed in Korean won using exchange rates prevailing at the end of the reporting period. Income and expense items are translated at the average exchange rates for the period, unless exchange rates fluctuated significantly during that period, in which case the exchange rates at the dates of the transactions are used. Exchange differences arising, if any, are recognized in other comprehensive income and accumulated in a foreign exchange translation reserve (attributed to non-controlling interests as appropriate).

On the disposal of a foreign operation (i.e., a disposal of the Group's entire interest in a foreign operation, or a disposal involving loss of control over a subsidiary that includes a foreign operation, or partial disposal of an interest in a joint arrangement or an associate that includes a foreign operation whose retained interest becomes a financial asset), all of the accumulated exchange differences in respect of that operation attributable to the owners of the Group are reclassified to profit or loss. Any exchange differences that had previously been attributed to non-controlling interests are derecognized, but they are not reclassified to profit or loss.

In the case of a partial disposal (i.e., no loss of control) of a subsidiary that includes a foreign operation, the proportionate share of accumulated exchange differences is re-attributed to non-controlling interests in equity and is not recognized in profit or loss. For all other partial disposals (i.e., partial disposals of associates or joint arrangements that do not result in the Group losing significant influence or joint control), the proportionate share of the accumulated exchange differences is reclassified to profit or loss.

Goodwill and fair value adjustments arising on the acquisition of a foreign operation are treated as assets and liabilities of the foreign operation and translated at the closing rate. Exchange differences arising are recognized in other comprehensive income.

(11) Borrowing Costs

Borrowing costs directly attributable to the acquisition, construction or production of qualifying assets, which are assets that necessarily take a substantial period of time to get ready for their intended use or sale, are added to the cost of those assets, until such time as the assets are substantially ready for their intended use or sale.

To the extent that variable rate borrowings are used to finance a qualifying asset and are hedged in an effective cash flow hedge of interest rate risk, the effective portion of the derivative is recognized in other comprehensive income and reclassified to profit or loss when the qualifying asset impacts profit or loss. To the extent that fixed rate borrowings are used to finance a qualifying asset and are hedged in an effective fair value hedge of interest rate risk, the capitalized borrowing costs reflect the hedged interest rate.

Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalization.

All other borrowing costs are recognized in profit or loss in the period in which they are incurred.

(12) Government grants

Government grants are not recognized until there is a reasonable assurance that the Group will comply with the conditions attaching to them and that the grants will be received.

The benefit of a government loan at a below-market rate of interest is treated as a government grant, measured as the difference between proceeds received and the fair value of the loan based on prevailing market interest rates.

Government grants related to assets are presented in the consolidated statements of financial position by deducting the grant from the carrying amount of the asset(including property, plant and equipment). The related grant is recognized in profit or loss over the life of a depreciable asset as a reduced depreciation expense.

Government grants related to income are recognized in profit or loss on a systematic basis over the periods in which the Group recognizes as expenses the related costs for which the grants are intended to compensate.

Government grants towards staff re-training costs are recognized as income over the periods necessary to match them with the related costs and are deducted in reporting the related expense.

(13) Retirement benefit costs and termination benefits

Contributions to defined contribution retirement benefit plans are recognized as an expense when employees have rendered service entitling them to the contributions.

For defined benefit retirement benefit plans, the cost of providing benefits is determined using the Projected Unit Credit Method, with actuarial valuations being carried out at the end of each annual reporting period. Remeasurements comprising the actuarial gains and losses, the effect of the asset ceiling (if applicable) and the return on plan assets (excluding interest) are recognized immediately in the consolidated statements of financial position with a charge or credit to the consolidated statements of comprehensive income in the period in which they occur. Remeasurements recognized in the consolidated statement of comprehensive income are not reclassified to profit or loss.

Past service cost is recognized in profit or loss when the plan amendment or curtailment occurs, or when the Group recognizes related restructuring costs or termination benefits, if earlier. Gains or losses on settlement of a defined benefit plan are recognized when the settlement occurs.

Net interest is calculated by applying a discount rate to the net defined benefit liability or asset. Defined benefit costs are split into three categories:

- Service costs, which include current service cost, past service cost and gains and losses on curtailments and settlements;
- Net interest expense or income;
- Remeasurements.

Service cost is recognized within cost of sales and selling and administration cost, net interest expense or income is recognized within finance costs, and the remeasurement component in other comprehensive income. Curtailment gains and losses are accounted for as past service costs.

The retirement benefit obligation recognized in the consolidated statement of financial position represents the actual deficit or surplus in the Group's defined benefit plans. Any surplus resulting from this calculation is limited to the present value of any economic benefits available in the form of refunds from the plans or reductions in future contributions to the plans.

A liability for a termination benefit is recognized at the earlier of when the entity can no longer withdraw the offer of the termination benefit or when the entity recognizes any related restructuring costs.

Discretionary contributions made by employees or third parties reduce service cost upon payment of these contributions to the plan. When the formal terms of the plans specify that there will be contributions from employees or third parties, the accounting depends on whether the contributions are linked to service, as follows:

- If the contributions are not linked to services (e.g. contributions are required to reduce a deficit arising from losses on plan assets or from actuarial losses), they are reflected in the remeasurement of the net defined benefit liability (asset).

- If contributions are linked to services, they reduce service costs. For the amount of contribution that is dependent on the number of years of service, the entity reduces service cost by attributing the contributions to periods of service using the attribution method required by K-IFRS 1019 paragraph 70 for the gross benefits. For the amount of contribution that is independent of the number of years of service, the entity reduces service cost in the period in which the related service is rendered / reduces service cost by attributing contributions to the employees' periods of service in accordance with K-IFRS 1019 paragraph 70.

(14) Share-based payments

Equity-settled share-based payments to employees and others providing similar services are measured at the fair value of the equity instruments at the grant date. The fair value excludes the effect of non-market-based vesting conditions.

The fair value determined at the grant date of the equity-settled share-based payments is expensed on a straight-line basis over the vesting period, based on the Group's estimate of the number of equity instruments that will eventually vest. At each reporting date, the Group revises its estimate of the number of equity instruments expected to vest as a result of the effect of non-market-based vesting conditions. The impact of the revision of the original estimates, if any, is recognized in profit or loss such that the cumulative expense reflects the revised estimate, with a corresponding adjustment to reserves.

For cash-settled share-based payments, a liability is recognized for the goods or services acquired, measured initially at the fair value of the liability. At each reporting date until the liability is settled, and at the date of settlement, the fair value of the liability is remeasured, with any changes in fair value recognized in profit or loss for the year.

(15) Taxation

Income tax expense represents the sum of the tax currently payable and deferred tax.

1) Current tax

The tax currently payable is based on taxable profit for the year. Taxable profit differs from net profit as reported in the consolidated statement of profit or loss and comprehensive income because of items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible. The Group's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

A provision is recognized for those matters for which the tax determination is uncertain but it is considered probable that there will be a future outflow of funds to a tax authority. The provisions are measured at the best estimate of the amount expected to become payable. The assessment is based on the judgement of tax professionals within the Group supported by previous experience in respect of such activities and in certain cases based on specialist independent tax advice.

2) Deferred tax

Deferred tax is the tax expected to be payable or recoverable on differences between the carrying amounts of assets and liabilities in the consolidated financial statements and the corresponding tax bases used in the computation of taxable profit, and is accounted for using the liability method. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized. Such deferred tax assets and liabilities are not recognized if the temporary difference arises from goodwill or from the initial recognition (other than in a business combination) of other assets and liabilities in a transaction that affects neither the taxable profit nor the accounting profit.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries and associates, and interests in joint ventures, except where the Group is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary differences associated with such investments and interests are only recognized to the extent that it is probable that there will be sufficient taxable profits against which to utilize the benefits of the temporary differences and they are expected to reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered. Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the period in which the liability is settled or the asset realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Group expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Deferred tax assets and liabilities are offset if, and only if the Group has a legally enforceable right to set off current tax assets against current tax liabilities, and the deferred tax assets and liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities which intend either to settle current tax liabilities and assets on a net basis, or to realize the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered.

For the purpose of measuring deferred tax liabilities and deferred tax assets for investment properties that are measured using the fair value model, the carrying amounts of such properties are presumed to be recovered entirely through sale, unless the presumption is rebutted. The presumption is rebutted when the investment property is depreciable and is held within a business model whose objective is to consume substantially all of the economic benefits embodied in the investment properties over time, rather than through sale.

3) Current and deferred taxes for the year

Current and deferred taxes are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income or directly in equity, in which case, the current and deferred tax are also recognized in other comprehensive income or directly in equity respectively. Where current tax or deferred tax arises from the initial accounting for a business combination, the tax effect is included in the accounting for the business combination.

4) Uncertainty over Income Tax Treatments

The income tax on the Group's taxable income is calculated by applying the tax laws of various countries and the decision of the taxation authorities, so there is uncertainty in determining the final tax effect.

The Group recognized the expected income tax effect in the future as a result of its business activities up to the end of the reporting period as current and deferred taxes after the best estimation process. However, the actual future final corporate tax burden may not match the related assets and liabilities recognised, and this difference may affect current and deferred tax the assets and liabilities both at the time the final tax effect is finalized.

(16) Property, plant and equipment

Property, plant and equipment are stated at cost less subsequent accumulated depreciation and accumulated impairment losses. The cost of an item of property, plant and equipment is directly attributable to their purchase or construction, which includes any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. It also includes the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located.

Subsequent costs are recognized in carrying amount of an asset or as a separate asset if it is probable that future economic benefits associated with the assets will flow into the Group and the cost of an asset can be measured reliably. Routine maintenance and repairs are expensed as incurred.

The Group does not depreciate land. Depreciation expense is computed using the straight-line method based on the estimated useful lives of the assets as follows:

Category	Estimated useful lives(Years)
Buildings	5–60
Structures	8–50
Machinery	2–15
Vehicles	1–10
Tools and equipments	1–20
Others	1–12

If each part of an item of property, plant and equipment has a cost that is significant in relation to the total cost of the item, it is depreciated separately.

The Group reviews the depreciation method, the estimated useful lives and residual values of property, plant and equipment at the end of each annual reporting period. If expectations differ from previous estimates, the changes are accounted for as a change in an accounting estimate.

An item of property, plant and equipment is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on derecognition of the property (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in profit or loss in the period in which the property is derecognized.

(17) Investment property

Investment properties are properties held to earn rentals and/or for capital appreciation (including property under construction for such purposes). Investment properties are measured initially at cost, including transaction costs. Subsequent to initial recognition, investment properties are reported at cost less accumulated depreciation and accumulated impairment losses.

Subsequent costs are recognized in carrying amount of an asset or as a separate asset if it is probable that future economic benefits associated with the assets will flow into the Group and the cost of an asset can be measured reliably. Routine maintenance and repairs are expensed as incurred.

While land is not depreciated, all other investment property is depreciated based on the respective assets estimated useful lives ranging from 5 ~ 60 years using the straight-line method.

The estimated useful lives, residual values and depreciation method are reviewed at the end of each reporting period, with the effect of any changes in estimate the changes are accounted for as a change in an accounting estimate as appropriate.

An investment property is derecognized upon disposal or when the investment property is permanently withdrawn from use and no future economic benefits are expected from the disposal. Any gain or loss arising on derecognition of the property (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in profit or loss in the period in which the property is derecognized.

(18) Intangible assets

1) Intangible assets acquired separately

Intangible assets with finite useful lives that are acquired separately are carried at cost, less accumulated amortization and accumulated impairment losses. Amortization is recognized on a straight-line basis over their estimated useful lives as follows:

Category	Estimated useful lives(Year)
Industrial property rights	5–10
Land use rights	44–50
Memberships	20
Other intangible assets	1–20

The estimated useful life and amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis. Intangible assets with indefinite useful lives that are acquired separately are carried at cost less accumulated impairment losses.

2) Internally-generated intangible assets - research and development expenditure

Expenditure on research activities is recognized as an expense in the period in which it is incurred.

An internally-generated intangible asset arising from development (or from the development phase of an internal project) is recognised if, and only if, all of the following conditions have been demonstrated:
- The technical feasibility of completing the intangible asset so that it will be available for use or sale;
- The intention to complete the intangible asset and use or sell it;
- The ability to use or sell the intangible asset;
- How the intangible asset will generate probable future economic benefits;
- The availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset;
- The ability to measure reliably the expenditure attributable to the intangible asset during its development.

Expenditure arising from development (or from the development phase of an internal project) is recognized as an intangible asset if, only if, the development project is designed to produce new or substantially improved products, and the Group can demonstrate the technical and economic feasibility and measure reliably the resources attributable to the intangible asset during its development.

Development expenditure is amortized on a straight-line basis over 5 to 10 years depending on their its economic useful lives.

The amount initially recognized for internally-generated intangible assets is the sum of the expenditure incurred from the date when the intangible asset first meets the recognition criteria. Where no internally-generated intangible asset can be recognized, development expenditure is recognized in profit or loss in the period in which it is incurred.

Subsequent to initial recognition, internally-generated intangible assets are reported at cost less accumulated amortization and accumulated impairment losses, on the same basis as intangible assets that are acquired separately.

3) Intangible assets acquired in a business combination

Intangible assets that are acquired in a business combination are recognized separately from goodwill and are initially recognized at their fair value at the acquisition date (which is regarded as their cost). Subsequent to initial recognition, intangible assets acquired in a business combination are reported at cost less accumulated amortization and accumulated impairment losses, on the same basis as intangible assets that are acquired separately.

4) Derecognition of intangible assets

An intangible asset is derecognized on disposal, or when no future economic benefits are expected from its use. Gains or losses arising from derecognition of an intangible asset, measured as the difference between the net disposal proceeds and the carrying amount of the asset, are recognized in profit or loss when the asset is derecognized.

5) Patents and trademarks

Patents and trademarks are measured initially at purchase cost and are amortized on a straight-line basis over their estimated useful lives.

(19) Impairment of tangible and intangible assets other than goodwill

At the end of each reporting period, the Group reviews the carrying amounts of its tangible and intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss. When it is not possible to estimate the recoverable amount of an individual asset, the Group estimates the recoverable amount of the GCU to which the asset belongs. Where a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual CGU, or otherwise they are allocated to the smallest group of CGU for which a reasonable and consistent allocation basis can be identified.

Intangible assets with indefinite useful lives and intangible assets not yet available for use are tested for impairment at least annually, and whenever there is an indication that an asset may be impaired.

Recoverable amount is the higher of fair value less costs to sell or value in use. If the recoverable amount of an asset (or a CGU) is estimated to be less than its carrying amount, the carrying amount of the asset (or the CGU) is reduced to its recoverable amount and the reduced amount is recognized in profit or loss.

Where an impairment loss subsequently reverses, the carrying amount of the asset (or a CGU) is increased to the revised estimate of its recoverable amount, but so that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset (or the CGU) in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

(20) Inventories

Inventories are stated at the lower of cost and net realizable value. Cost of inventories, except for those in in-transit, are measured using the weighted average method and consists of the purchase price, cost of conversion and other costs incurred in bringing the inventories to their present location and condition. Net realizable value represents the estimated selling price for inventories less all estimated costs of completion and costs necessary to make the sale.

When inventories are sold, the carrying amount of those inventories is recognized as an expense (cost of sales) in the period in which the related revenue is recognized. The amount of any write-down of inventories to net realizable value and all losses of inventories is recognized as an expense in the period the write-down or loss occurs. The amount of any reversal of write-down of inventories, arising from an increase in net realizable value, is recognized as a reduction in the amount of inventories recognized as an expense in the period in which the reversal occurs.

(21) Provisions

Provisions are recognized when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that the Group will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. When a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows (where the effect of the time value of money is material). The discount rate used is a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. Where discounting is used, the increase in the provision due to the passage is recognized in profit or loss as borrowing cost.

When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party, a receivable is recognized as an asset if it is virtually certain that reimbursement will be received and the amount of the receivable can be measured reliably.

At the end of each reporting period, the remaining provision balance is reviewed and assessed to determine if the current best estimate is being recognized. If the existence of an obligation to transfer economic benefit is no longer probable, the related provision is reversed during the period.

1) Warranties

Provisions for the expected cost of warranty obligations under local sale of goods legislation are recognized at the date of sale of the relevant products, at the directors' best estimate of the expenditure required to settle the Group's obligation.

2) Restoration provisions

Provisions for the costs to restore leased plant assets to their original condition, as required by the terms and conditions of the lease, are recognised when the obligation is incurred, either at the commencement date or as a consequence of having used the underlying asset during a particular period of the lease, at the directors' best estimate of the expenditure that would be required to restore the assets. Estimates are regularly reviewed and adjusted as appropriate for new circumstances.

(22) Financial instrument

Financial assets and financial liabilities are recognized in the Group's consolidated statement of financial position when the Group becomes a party to the contractual provisions of the instrument. Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss("FVTPL")) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at FVTPL are recognized immediately in profit or loss.

(23) Financial assets

All regular way purchases or sales of financial assets are recognized and derecognized on a trade date basis. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

All recognized financial assets are measured subsequently in their entirety at either amortized cost or fair value, depending on the classification of the financial assets.

1) Classification of financial assets

Debt instruments that meet the following conditions are measured subsequently at amortized cost:

- The financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows;
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Debt instruments that meet the following conditions are measured subsequently at fair value through other comprehensive income ("FVTOCI"):

- The financial asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling the financial assets;
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

By default, all other financial assets are measured subsequently at FVTPL.

Despite the foregoing, the Group may make the following irrevocable election / designation at initial recognition of a financial asset:

- The Group may irrevocably elect to present subsequent changes in fair value of an equity investment in other comprehensive income if certain criteria are met (see (1-3) below);
- The Group may irrevocably designate a debt investment that meets the amortized cost or FVTOCI criteria as measured at FVTPL if doing so eliminates or significantly reduces an accounting mismatch (see (1-4) below).

1-1) Amortized cost and effective interest method

The effective interest method is a method of calculating the amortized cost of a debt instrument and allocating interest income over the relevant period. For financial assets other than purchased or originated credit-impaired financial assets (i.e. assets that are credit-impaired on initial recognition), the effective interest rate is the rate that exactly discounts estimated future cash receipts (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) excluding ECLs, through the expected life of the debt instrument, or, where appropriate, a shorter period, to the gross carrying amount of the debt instrument on initial recognition. For purchased or originated credit-impaired financial assets, a credit-adjusted effective interest rate is calculated by discounting the estimated future cash flows, including ECLs, to the amortized cost of the debt instrument on initial recognition.

The amortized cost of a financial asset is the amount at which the financial asset is measured at initial recognition minus the principal repayments, plus the cumulative amortisation using the effective interest method of any difference between that initial amount and the maturity amount, adjusted for any loss allowance. The gross carrying amount of a financial asset is the amortized cost of the financial asset before adjusting for any loss allowance.

Interest income is recognized using the effective interest method for debt instruments measured subsequently at amortized cost and at FVTOCI. For financial assets other than purchased or originated credit-impaired financial assets, interest income is calculated by applying the effective interest rate to the gross carrying amount of a financial asset, except for financial assets that have subsequently become credit-impaired (see below). For financial assets that have subsequently become credit-impaired, interest income is recognized by applying the effective interest rate to the amortized cost of the financial asset. If, in subsequent reporting periods, the credit risk on the credit-impaired financial instrument improves so that the financial asset is no longer credit-impaired, interest income is recognized by applying the effective interest rate to the gross carrying amount of the financial asset.

For purchased or originated credit-impaired financial assets, the Group recognizes interest income by applying the credit-adjusted effective interest rate to the amortized cost of the financial asset from initial recognition. The calculation does not revert to the gross basis even if the credit risk of the financial asset subsequently improves so that the financial asset is no longer credit-impaired.

Interest income is recognized in profit or loss and is included in the "finance income - interest income" line item (see note 36).

1-2) Debt instruments classified as at FVTOCI

The corporate bonds are initially measured at fair value plus transaction costs. Subsequently, changes in the carrying amount of these corporate bonds as a result of foreign exchange gains and losses, impairment gains or losses, and interest income calculated using the effective interest method are recognized in profit or loss. The amounts that are recognized in profit or loss are the same as the amounts that would have been recognized in profit or loss if these corporate bonds had been measured at amortized cost. All other changes in the carrying amount of these corporate bonds are recognized in other comprehensive income and accumulated under the heading of investments revaluation reserve. When these corporate bonds are derecognized, the cumulative gains or losses previously recognized in other comprehensive income are reclassified to profit or loss.

1-3) Equity instruments designated as at FVTOCI

On initial recognition, the Group may make an irrevocable election (on an instrument-by-instrument basis) to designate investments in equity instruments as at FVTOCI. Designation at FVTOCI is not permitted if the equity investment is held for trading or if it is a contingent consideration recognized by an acquirer in a business combination.

A financial asset is held for trading if:

- It has been acquired principally for the purpose of selling in the near term;
- On initial recognition it is part of a portfolio of identified financial instruments that the Group manages together and has evidence of a recent actual pattern of short-term profit-taking;
- It is a derivative (except for a derivative that is a financial guarantee contract or a designated and effective hedging instrument).

Investments in equity instruments at FVTOCI are initially measured at fair value plus transaction costs. Subsequently, they are measured at fair value with gains and losses arising from changes in fair value recognized in other comprehensive income and accumulated in the investments revaluation reserve. The cumulative gain or loss is not reclassified to profit or loss on disposal of the equity investments, instead, it is transferred to retained earnings.

Dividends on these investments in equity instruments are recognized in profit or loss in accordance with K-IFRS 1109, unless the dividends clearly represent a recovery of part of the cost of the investment. Dividends are included in the 'finance income' line item (see note 36) in profit or loss.

The Group designated all investments in equity instruments that are not held for trading as at FVTOCI on initial recognition.

1-4) Financial assets at FVTPL

Financial assets that do not meet the criteria for being measured at amortized cost or FVTOCI are measured at FVTPL. Specifically:

- Investments in equity instruments are classified as at FVTPL, unless the Group designates an equity investment that is neither held for trading nor a contingent consideration arising from a business combination as at FVTOCI on initial recognition (see (1-3) above).
- Debt instruments that do not meet the amortized cost criteria or the FVTOCI criteria (see (1-1) and (1-2) above) are classified as at FVTPL. In addition, debt instruments that meet either the amortized cost criteria or the FVTOCI criteria may be designated as at FVTPL upon initial recognition if such designation eliminates or significantly reduces a measurement or recognition inconsistency (so called 'accounting mismatch') that would arise from measuring assets or liabilities or recognising the gains and losses on them on different bases. The Group has not designated any debt instruments as at FVTPL.

Financial assets at FVTPL are measured at fair value at the end of each reporting period, with any fair value gains or losses recognized in profit or loss to the extent they are not part of a designated hedging relationship.

2) Foreign exchange gains and losses

The carrying amount of financial assets that are denominated in a foreign currency is determined in that foreign currency and translated at the spot rate at the end of each reporting period. Specifically;

- For financial assets measured at amortized cost that are not part of a designated hedging relationship, exchange differences are recognized in profit or loss in the 'other gains and losses' line item.
- For debt instruments measured at FVTOCI that are not part of a designated hedging relationship, exchange differences on the amortized cost of the debt instrument are recognized in profit or loss in the 'other gains and losses'. Other exchange differences are recognized in other comprehensive income in the investments revaluation reserve;
- For financial assets measured at FVTPL that are not part of a designated hedging relationship, exchange differences are recognized in profit or loss in the 'other gains and losses' line item.
- For equity instruments measured at FVTOCI, exchange differences are recognized in other comprehensive income in the investments revaluation reserve.

3) Impairment of financial assets

The Group recognizes a loss allowance for ECLs on investments in debt instruments that are measured at amortized cost or at FVTOCI, lease receivables, trade receivables and contract assets, as well as on financial guarantee contracts. The amount of expected credit losses is updated at each reporting date to reflect changes in credit risk since initial recognition of the respective financial instrument.

The Group always recognizes lifetime ECL for trade receivables, contract assets and lease receivables. The ECLs on these financial assets are estimated using a provision matrix based on the Group's historical credit loss experience, adjusted for factors that are specific to the debtors, general economic conditions and an assessment of both the current as well as the forecast direction of conditions at the reporting date, including time value of money where appropriate.
For all other financial instruments, the Group recognizes lifetime ECL when there has been a significant increase in credit risk since initial recognition. However, if the credit risk on the financial instrument has not increased significantly since initial recognition, the Group measures the loss allowance for that financial instrument at an amount equal to 12-month ECL.

Lifetime ECL represents the ECLs that will result from all possible default events over the expected life of a financial instrument. In contrast, 12-month ECL represents the portion of lifetime ECL that is expected to result from default events on a financial instrument that are possible within 12 months after the reporting date.

3-1) Significant increase in credit risk

In assessing whether the credit risk on a financial instrument has increased significantly since initial recognition, the Group compares the risk of a default occurring on the financial instrument at the reporting date with the risk of a default occurring on the financial instrument at the date of initial recognition. In making this assessment, the Group considers both quantitative and qualitative information that is reasonable and supportable, including historical experience and forward-looking information that is available without undue cost or effort. Forward-looking information considered includes the future prospects of the industries in which the Group's debtors operate, obtained from economic expert reports, financial analysts, governmental bodies, relevant think-tanks and other similar organisations, as well as consideration of various external sources of actual and forecasted economic information that relate to the Group's core operations.

In particular, the following information is taken into account when assessing whether credit risk has increased significantly since initial recognition:

- An actual or expected significant deterioration in the financial instrument's external (if available) or internal credit rating;
- Significant deterioration in external market indicators of credit risk for a particular financial instrument, e.g. a significant increase in the credit spread, the credit default swap prices for the debtor, or the length of time or the extent to which the fair value of a financial asset has been less than its amortized cost;
- Existing or forecast adverse changes in business, financial or economic conditions that are expected to cause a significant decrease in the debtor's ability to meet its debt obligations;
- An actual or expected significant deterioration in the operating results of the debtor;
- Significant increases in credit risk on other financial instruments of the same debtor;
- An actual or expected significant adverse change in the regulatory, economic, or technological environment of the debtor that results in a significant decrease in the debtor's ability to meet its debt obligations.

Irrespective of the outcome of the above assessment, the Group presumes that the credit risk on a financial asset has increased significantly since initial recognition when contractual payments are more than 30 days past due, unless the Group has reasonable and supportable information that demonstrates otherwise.

Despite the foregoing, the Group assumes that the credit risk on a financial instrument has not increased significantly since initial recognition if the financial instrument is determined to have low credit risk at the reporting date. A financial instrument is determined to have low credit risk if: (1) The financial instrument has a low risk of default, (2) The debtor has a strong capacity to meet its contractual cash flow obligations in the near term, and (3) Adverse changes in economic and business conditions in the longer term may, but will not necessarily, reduce the ability of the borrower to fulfil its contractual cash flow obligations.

The Group considers a financial asset to have low credit risk when the asset has external credit rating of 'investment grade' in accordance with the globally understood definition and if an external rating is not available, the asset has an internal rating of 'performing'. Performing means that the counterparty has a strong financial position and there are no past due amounts.

For financial guarantee contracts, the date that the Group becomes a party to the irrevocable commitment is considered to be the date of initial recognition for the purposes of assessing the financial instrument for impairment. In assessing whether there has been a significant increase in the credit risk since initial recognition of a financial guarantee contracts, the Group considers the changes in the risk that the specified debtor will default on the contract.

The Group regularly monitors the effectiveness of the criteria used to identify whether there has been a significant increase in credit risk and revises them as appropriate to ensure that the criteria are capable of identifying significant increase in credit risk before the amount becomes past due.

3-2) Definition of default

The Group considers the following as constituting an event of default for internal credit risk management purposes as historical experience indicates that financial assets that meet either of the following criteria are generally not recoverable:

- When there is a breach of financial covenants by the debtor; or
- Information developed internally or obtained from external sources indicates that the debtor is unlikely to pay its creditors, including the Group, in full (without taking into account any collateral held by the Group).

Irrespective of the above analysis, the Group considers that default has occurred when a financial asset is more than 90 days past due unless the Group has reasonable and supportable information to demonstrate that a more lagging default criterion is more appropriate.

3-3) Credit-impaired financial assets

A financial asset is credit-impaired when one or more events that have a detrimental impact on the estimated future cash flows of that financial asset have occurred. Evidence that a financial asset is credit-impaired includes observable data about the following events:

(a) Significant financial difficulty of the issuer or the borrower;
(b) A breach of contract, such as a default or past due event (see (3-2) above);
(c) The lender(s) of the borrower, for economic or contractual reasons relating to the borrower's financial difficulty, having granted to the borrower a concession(s) that the lender(s) would not otherwise consider;
(d) It is becoming probable that the borrower will enter bankruptcy or other financial reorganisation; or
(e) The disappearance of an active market for that financial asset because of financial difficulties.

3-4) Write-off policy

The Group writes off a financial asset when there is information indicating that the debtor is in severe financial difficulty and there is no realistic prospect of recovery, e.g. when the debtor has been placed under liquidation or has entered into bankruptcy proceedings, or in the case of trade receivables, when the amounts are more than two years past due, whichever occurs sooner. Financial assets written off may still be subject to enforcement activities under the Group's recovery procedures, taking into account legal advice where appropriate.

3-5) Measurement and recognition of ECLs

The measurement of ECLs is a function of the probability of default, loss given default (i.e. the magnitude of the loss if there is a default) and the exposure at default. The assessment of the probability of default and loss given default is based on historical data adjusted by forward-looking information as described above. As for the exposure at default, for financial assets, this is represented by the assets' gross carrying amount at the reporting date; for financial guarantee contracts, the exposure includes the amount drawn down as at the reporting date, together with any additional amounts expected to be drawn down in the future by default date determined based on historical trend, the Group's understanding of the specific future financing needs of the debtors, and other relevant forward-looking information.

For financial assets, the ECL is estimated as the difference between all contractual cash flows that are due to the Group in accordance with the contract and all the cash flows that the Group expects to receive, discounted at the original effective interest rate. For a lease receivable, the cash flows used for determining the expected credit losses is consistent with the cash flows used in measuring the lease receivable in accordance with K-IFRS 1116 *Leases*.

For a financial guarantee contract, as the Group is required to make payments only in the event of a default by the debtor in accordance with the terms of the instrument that is guaranteed, the expected loss allowance is the expected payments to reimburse the holder for a credit loss that it incurs less any amounts that the Group expects to receive from the holder, the debtor or any other party.

If the Group has measured the loss allowance for a financial instrument at an amount equal to lifetime ECL in the previous reporting period, but determines at the current reporting date that the conditions for lifetime ECL are no longer met, the Group measures the loss allowance at an amount equal to 12-month ECL at the current reporting date, except for assets for which simplified approach was used.

The Group recognizes an impairment gain or loss in profit or loss for all financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account, except for investments in debt instruments that are measured at FVTOCI, for which the loss allowance is recognized in other comprehensive income and accumulated in the investment revaluation reserve, and does not reduce the carrying amount of the financial asset in the statements of financial position.

4) Derecognition of financial assets

The Group derecognizes a financial asset only when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity. If the Group neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Group recognizes its retained interest in the asset and an associated liability for amounts it may have to pay. If the Group retains substantially all the risks and rewards of ownership of a transferred financial asset, the Group continues to recognize the financial asset and also recognizes a collateralised borrowing for the proceeds received.

In the event of derecognition of a financial asset in its entirety, the difference between the total amount of consideration received and the cumulative gain or loss recognised in other comprehensive income and the carrying amount of the asset is recognised in profit or loss.

On derecognition of a financial asset measured at amortized cost, the difference between the asset's carrying amount and the sum of the consideration received and receivable is recognized in profit or loss. In addition, on derecognition of an investment in a debt instrument classified as at FVTOCI, the cumulative gain or loss previously accumulated in the investments revaluation reserve is reclassified to profit or loss. In contrast, on derecognition of an investment in equity instrument which the Group has elected on initial recognition to measure at FVTOCI, the cumulative gain or loss previously accumulated in the investments revaluation reserve is not reclassified to profit or loss, but is transferred to retained earnings.

(24) Financial liabilities and equity instruments

1) Classification as debt or equity

Debt and equity instruments are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangement and the definitions of a financial liability and an equity instrument.

2) Equity instruments

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. Equity instruments issued by the Group are recognized at the proceeds received, net of direct issue costs.

Repurchase of the Group's own equity instruments is recognized and deducted directly in equity. No gain or loss is recognized in profit or loss on the purchase, sale, issue or cancellation of the Group's own equity instruments.

3) Compound instruments

The component parts of compound instruments (convertible bonds) issued by the Group are classified separately as financial liabilities and equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and equity instrument. Conversion option that will be settled by the exchange of a fixed amount of cash or another financial asset for a fixed number of the Group's own equity instruments is an equity instrument.

At the date of issue, the fair value of the liability component is estimated using the prevailing market interest rate for a similar non-convertible instrument. This amount is recorded as a liability on an amortized cost basis using the effective interest method until extinguished upon conversion or at the instrument's maturity date.

The conversion option classified as equity is determined by deducting the amount of the liability component from the fair value of the compound instrument as a whole. This is recognized and included in equity, net of income tax effects, and is not subsequently remeasured. In addition, the conversion option classified as equity will remain in equity until the conversion option is exercised, in which case, the balance recognized in equity will be transferred to share premium. Where the conversion option remains unexercised at the maturity date of the convertible loan note, the balance recognised in equity will be transferred to other equity. No gain or loss is recognized in profit or loss upon conversion or expiration of the conversion option.

Transaction costs that relate to the issue of the convertible notes are allocated to liability and equity components in proportion to the allocation of the gross proceeds. Transaction costs relating to equity component are recognized directly in equity. Transaction costs relating to the liability component are included in the carrying amount of the liability component and are amortized over the lives of the convertible notes using the effective interest method.

4) Financial liabilities

All financial liabilities are measured subsequently at amortized cost using the effective interest method or at FVTPL.
However, financial liabilities that arise when a transfer of a financial asset does not qualify for derecognition or when the continuing involvement approach applies, and financial guarantee contracts are issued by the Group, are measured in accordance with the specific accounting policies set out below.

5) Financial liabilities at FVTPL

Financial liabilities are classified as at FVTPL when a financial liability is (i) a contingent consideration of an acquirer in a business combination, (ii) held for trading or (iii) designated as at FVTPL.

A financial liability is classified as held for trading if:

- It has been acquired principally for the purpose of repurchasing in the near term;
- On initial recognition it is part of a portfolio of identified financial instruments that the Group manages together and has a recent actual pattern of short-term profit-taking;
- It is a derivative that is not designated and effective as a hedging instrument.

A financial liability other than a financial liability held for trading or contingent consideration of an acquirer in a business combination may be designated as at FVTPL upon initial recognition if:

- Such designation eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise;
- The financial liability forms part of a group of financial assets or financial liabilities or both, which is managed and its performance is evaluated on a fair value basis, in accordance with the Group's documented risk management or investment strategy, and information about the grouping is provided internally on that basis;
- It forms part of a contract containing one or more embedded derivatives, and K-IFRS 1109 permits the entire combined contract to be designated as at FVTPL.

Financial liabilities at FVTPL are measured at fair value, with any gains or losses arising on changes in fair value recognized in profit or loss to the extent that they are not part of a designated hedging relationship. The net gain or loss recognized in profit or loss incorporates any interest paid on the financial liability and is included in the 'other gains and losses' line item in profit or loss.

However, for financial liabilities that are designated as at FVTPL, the amount of change in the fair value of the financial liability that is attributable to changes in the credit risk of that liability is recognized in other comprehensive income, unless the recognition of the effects of changes in the liability's credit risk in other comprehensive income would create or enlarge an accounting mismatch in profit or loss. The remaining amount of change in the fair value of liability is recognized in profit or loss. Changes in fair value attributable to a financial liability's credit risk that are recognized in other comprehensive income are not subsequently reclassified to profit or loss; instead, they are transferred to retained earnings upon derecognition of the financial liability.

Gains or losses on financial guarantee contracts issued by the Group that are designated by it as at FVTPL are recognized in profit or loss.

6) Financial liabilities measured subsequently at amortized cost

Financial liabilities that are not (i) contingent consideration of an acquirer in a business combination, (ii) held-for-trading, or (iii) designated as at FVTPL, are measured subsequently at amortized cost using the effective interest method.

The effective interest method is a method of calculating the amortized cost of a financial liability and allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the financial liability, or (where appropriate) a shorter period, to the amortized cost of the financial liability.

7) Financial guarantee contracts

A financial guarantee contract is a contract that requires the issuer to make specified payments to reimburse the holder for a loss it incurs because a specified debtor fails to make payments when due in accordance with the terms of a debt instruments.

Financial guarantee contract liabilities are measured initially at their fair values and, if not designated as at FVTPL and do not arise from a transfer of an asset, are measured subsequently at the higher of:

- The amount of the loss allowance determined in accordance with K-IFRS 1109 (see Financial Assets above); or
- The amount recognized initially less, where appropriate, cumulative amortisation recognized in accordance with the revenue recognition policies set out above.

8) Foreign exchange gains and losses

For financial liabilities that are denominated in a foreign currency and are measured at amortized cost at the end of each reporting period, the foreign exchange gains and losses are determined based on the amortized cost of the instruments. These foreign exchange gains and losses are recognized in the 'other gains and losses' line item in profit or loss for financial liabilities that are not part of a designated hedging relationship. For those which are designated as a hedging instrument for a hedge of foreign currency risk foreign exchange gains and losses are recognized in other comprehensive income and accumulated in a separate component of equity.

The fair value of financial liabilities denominated in a foreign currency is determined in that foreign currency and translated at the spot rate at the end of the reporting period. For financial liabilities that are measured as at FVTPL, the foreign exchange component forms part of the fair value gains or losses and is recognized in profit or loss for financial liabilities that are not part of a designated hedging relationship.

9) Derecognition of financial liabilities

The Group derecognizes financial liabilities when, and only when, the Group's obligations are discharged, cancelled or have expired. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

When the Group exchanges with the existing lender one debt instrument into another one with substantially different terms, such exchange is accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability. Similarly, the Group accounts for substantial modification of terms of an existing liability or part of it as an extinguishment of the original financial liability and the recognition of a new liability. It is assumed that the terms are substantially different if the discounted present value of the cash flows under the new terms, including any fees paid net of any fees received and discounted using the original effective rate is at least 10 % different from the discounted present value of the remaining cash flows of the original financial liability. If the modification is not substantial, the difference between: (1) the carrying amount of the liability before modification; and (2) the present value of the cash flows after modification should be recognized in profit or loss as the modification gain or loss within other gains and losses.

(25) Derivative financial instruments

The Group enters into a variety of derivative financial instruments to manage its exposure to interest rate and foreign exchange rate risks, including foreign exchange forward contracts, options and interest rate swaps.

Derivatives are recognized initially at fair value at the date a derivative contract is entered into and are subsequently remeasured to their fair value at each reporting date. The resulting gain or loss is recognized in profit or loss immediately unless the derivative is designated and effective as a hedging instrument, in which event the timing of the recognition in profit or loss depends on the nature of the hedge relationship.

A derivative with a positive fair value is recognized as a financial asset whereas a derivative with a negative fair value is recognized as a financial liability. Derivatives are not offset in the consolidated financial statements unless the Group has both legally enforceable legal right and intention to offset. The impact of the Master Netting Agreements on the Group's financial position is disclosed. A derivative is presented as a non-current asset or a non-current liability if the remaining maturity of the instrument is more than 12 months and it is not expected to be realised or settled within 12 months and it is not due to be realised or settled within 12 months. Other derivatives are presented as current assets or current liabilities.

1) Embedded derivatives

An embedded derivative is a component of a hybrid contract that also includes a non-derivative host – with the effect that some of the cash flows of the combined instrument vary in a way similar to a stand-alone derivative.

Derivatives embedded in hybrid contracts with a financial asset host within the scope of K-IFRS 1109 are not separated. The entire hybrid contract is classified and subsequently measured as either amortized cost or fair value as appropriate.

Derivatives embedded in hybrid contracts with hosts that are not financial assets within the scope of K-IFRS 1109 (e.g. financial liabilities) are treated as separate derivatives when they meet the definition of a derivative, their risks and characteristics are not closely related to those of the host contracts and the host contracts are not measured at FVTPL.

An embedded derivative is presented as a non-current asset or non-current liability if the remaining maturity of the hybrid instrument to which the embedded derivative relates is more than 12 months and is not expected to be realised or settled within 12 months. Other embedded derivatives are presented as current assets or current liabilities.

2) Hedge accounting

The Group designates certain derivatives as hedging instruments in respect of foreign currency risk and interest rate risk in fair value hedges, cash flow hedges, or hedges of net investments in foreign operations. Hedges of foreign exchange risk on firm commitments are accounted for as cash flow hedges.

At the inception of the hedge relationship, the Group documents the relationship between the hedging instrument and the hedged item, along with its risk management objectives and its strategy for undertaking various hedge transactions. Furthermore, at the inception of the hedge and on an ongoing basis, the Group documents whether the hedging instrument is effective in offsetting changes in fair values or cash flows of the hedged item attributable to the hedged risk, which is when the hedging relationships meet all of the following hedge effectiveness requirements:

- There is an economic relationship between the hedged item and the hedging instrument;
- The effect of credit risk does not dominate the value changes that result from that economic relationship;
- The hedge ratio of the hedging relationship is the same as that resulting from the quantity of the hedged item that the Group actually hedges and the quantity of the hedging instrument that the Group actually uses to hedge that quantity of hedged item.

If a hedging relationship ceases to meet the hedge effectiveness requirement relating to the hedge ratio but the risk management objective for that designated hedging relationship remains the same, the Group adjusts the hedge ratio of the hedging relationship (i.e. rebalances the hedge) so that it meets the qualifying criteria again.

The Group designates the full change in the fair value of a forward contract (i.e. including the forward elements) as the hedging instrument for all of its hedging relationships involving forward contracts.

The Group designated only the intrinsic value of the option as a hedging instrument when it used the option contract to hedge the expected transaction. In K-IFRS 39, changes in the fair value of an option (ie unspecified factors) were immediately recognised in profit or loss.K-IFRS 9 recognises changes in the time value of the option associated with the hedged item in other comprehensive income and the accumulated amount of equity is reclassified to profit or loss during the period when the hedged item affects profit or loss or is removed from equity and included directly in the non-financial item's carrying amount.

The Group designates only the intrinsic value of option contracts as a hedged item, i.e. excluding the time value of the option. The changes in the fair value of the aligned time value of the option are recognized in other comprehensive income and accumulated in the cost of hedging reserve. If the hedged item is transaction-related, the time value is reclassified to profit or loss when the hedged item affects profit or loss. If the hedged item is time-period related, then the amount accumulated in the cost of hedging reserve is reclassified to profit or loss on a rational basis – the Group applies straight-line amortisation. Those reclassified amounts are recognized in profit or loss in the same line as the hedged item. If the hedged item is a non-financial item, then the amount accumulated in the cost of hedging reserve is removed directly from equity and included in the initial carrying amount of the recognized non-financial item. Furthermore, if the Group expects that some or all of the loss accumulated in cost of hedging reserve will not be recovered in the future, that amount is immediately reclassified to profit or loss.

3) Cash flow hedges

The effective portion of changes in the fair value of derivatives and other qualifying hedging instruments that are designated and qualify as cash flow hedges is recognized in other comprehensive income and accumulated under the heading of cash flow hedging reserve, limited to the cumulative change in fair value of the hedged item from inception of the hedge. The gain or loss relating to the ineffective portion is recognized immediately in profit or loss, and is included in the 'other gains and losses' line item.

Amounts previously recognized in other comprehensive income and accumulated in equity are reclassified to profit or loss in the periods when the hedged item affects profit or loss, in the same line as the recognized hedged item. However, when the hedged forecast transaction results in the recognition of a non-financial asset or a non-financial liability, the gains and losses previously recognized in other comprehensive income and accumulated in equity are removed from equity and included in the initial measurement of the cost of the non-financial asset or non-financial liability. This transfer does not affect other comprehensive income. Furthermore, if the Group expects that some or all of the loss accumulated in the cash flow hedging reserve will not be recovered in the future, that amount is immediately reclassified to profit or loss.

The Group discontinues hedge accounting only when the hedging relationship (or a part thereof) ceases to meet the qualifying criteria (after rebalancing, if applicable). This includes instances when the hedging instrument expires or is sold, terminated or exercised. The discontinuation is accounted for prospectively. Any gain or loss recognized in other comprehensive income and accumulated in cash flow hedge reserve at that time remains in equity and is reclassified to profit or loss when the forecast transaction occurs. When a forecast transaction is no longer expected to occur, the gain or loss accumulated in cash flow hedge reserve is reclassified immediately to profit or loss.

(26) Fair Value

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Group takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at the measurement date. Fair value for measurement and/or disclosure purposes in these consolidated financial statements is determined on such a basis, except for share-based payment transactions that are within the scope of K-IFRS No. 1102 Share-based payment, leasing transactions that are within the scope of K-IFRS No.1017 Leases, and measurements that have some similarities to fair value but are not fair value, such as net realisable value in K-IFRS 1002 Inventories or value in use in K-IFRS No.1036 Impairment of Assets.

In addition, for financial reporting purposes, fair value measurements are categorized into Levels 1, 2 or 3 based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirety, which are described as follows:

(Level 1) inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the Group can access at the measurement date;
(Level 2) inputs are inputs, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly;
(Level 3) inputs are unobservable inputs for the asset or liability.

(27) Accounting Treatment related to the Emission Rights Cap and Trade Scheme

The Group classifies the emission rights as intangible assets. Emission rights allowances the Government allocated free of charge are measured at nil, and emission rights allowances purchased are measured at cost, which the Group paid to purchase the allowances. If emission rights the government allocated free of charge are sufficient to settle the emission rights allowances allotted for vintage year, the emissions liabilities are measured at nil. However, for the emissions liabilities that exceed the allowances allocated free of charge, the shortfall is measured at best estimate at the end of the reporting period.

(28) Segment Reporting

Each operating segment is reported information in a manner consistent with the business segment reporting provided to the chief operating decision-maker (see Note 42). The chief operating decision-maker is responsible for allocating resources and assessing performance of the operating segments.

(29) Approval of Issuance of the consolidated Financial Statements

The issuance of the December 31, 2020 financial statements of the Group was authorized by the board of directors on February 18, 2021, which will be submitted for approval at the annual shareholder’s meeting on March 24, 2021.

3. CRITICAL ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY:

In the application of the Group accounting policies, which are described in Note 2, management is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimate is revised if the revision affects only that period or in the period of the revision and future periods if the revision affects both current and future periods.

Due to the COVID-19 outbreak in 2020, the world is facing difficult economic conditions and uncertainties about prolonged situations. The Group is also expected to reduce profitability due to the global economic slowdown, but the Group believes that it will not be difficult to secure liquidity as cash generation and financing from the business activities planned in the current period are proceeding smoothly. The impact of the overall economic difficulties mentioned above on the consolidated financial statements of the Group cannot be measured at this time, and the impact is not reflected in the consolidated financial statements.

The following are the key assumptions concerning the future, and other key sources of estimation uncertainty at the end of the reporting period, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year.

(1) Impairment of goodwill

Determining whether goodwill is impaired requires an estimation of the value in use of the CGU to which goodwill has been allocated. The value in use calculation requires the directors to estimate the future cash flows expected to arise from the CGU and a suitable discount rate in order to calculate present value.

(2) Impairment of right-of-use assets

Indication that right-of-use assets in the distribution business may be impaired was found in this year. Hanwha Galleria Co., Ltd., the Group's subsidiary, total book value amount of ₩6,978 million for Jinju branch is recognized as impairment of right-of-use assets, as a result of impairement test of right-in-use assets.

(3) Impairment of property, plant and equipment

The Group recognized the impairment loss of ₩58,461 million for some part of property, plant and equipment in Solar photovoltaic power business, as a result of impairment test of property, plant and equipment for the each unit of the Group.

(4) Defined Benefit Plan

The Group’s defined benefit obligation is determined based on the actuarial valuation carried out at the end of each annual reporting period. Actuarial assumptions are the Group’s best estimates of the variables in determining the cost of providing post-retirement benefits such as discount rates, rates of expected future salary increases and expected rates of plan asset. Significant estimation uncertainty is likely to persist in making such assumptions due to the long-term nature of post-retirement benefit plan. As of December 31, 2020, net defined benefit liability of the plan is ₩446,565 million (2019: ₩411,795 million), as detailed in Note 24.

(5) Useful lives of property, plant and equipment

The Group reviews the estimated useful lives of property, plant and equipment at the end of each annual reporting period.

(6) Fair value assessment of financial instruments

The Goup has used the valuation methods including some input values not based on observable market data to estimate the specific type of financial instruments. Note 5 provides details of the key assumptions used to determint the fair value of financial instruments and sensitivity analysis of these assumptions. The Group believes that the valuation methods and the assumptions used to determine the fair value of financial instruments are appropriate.

(7) Uncertainty of estimation of Special Taxation for Facilitation of Investment and Mutually-Beneficial Cooperation

In accordance with the Special Taxation for Facilitation of Investment and Mutually-Beneficial Cooperation, additional taxes may be incurred depending on the level of investments, increase of labor costs and contributions for three years form 2018. As a result, the Group estimates the tax effect in consideration of investments, increase of labor cost and contributions, but these estimation for Special Taxation for Facilitation of Investment and Mutually-Beneficial Cooperation has included the uncertainties.

(8) Uncertainty over income tax treatments

The corporate tax on the Group's taxable income is calculated by applying the tax laws of various countries and the decision of the taxation authorities, so there is uncertainty in determining the final tax effect. Due to the uncertainty associated with such tax items, there is a possibility that, on conclusion of open tax matters at a future date, the final outcome may differ significantly.

The Group does not anticipate that the uncertainty over income tax treatments will have an significant impact on the Group's consolidated financial statements.

4. FINANCIAL RISK MANAGEMENT:

(1) Financial risk factors

The finance department of the Group organizes access to domestic and international financial markets and monitors and manages financial risks related to the Group's operations through an internal risk report that analyzes the extent and magnitude of each risk. These risks include market risk (including foreign exchange risk and interest rate risk), credit risk and liquidity risk.

(i) Market risk

(a) Foreign exchange risk

The Group's foreign exchange risk arises when future forecast transactions and recognized assets and liabilities are denominated in a currency other than the functional currency, and the major foreign currencies for which the exchange position occurs are USD, EUR, JPY and CNY.

The Group selects the foreign exchange risk management policy of each Group by considering the nature of the business and the existence of measures to cope with the exchange rate fluctuation risk of each Group being connected. In addition, the Group regularly evaluates, manages and reports the risks of foreign exchange exposure, using the foreign exchange risk management model, so that the maximum amount of loss for foreign exchange risk exposure is within the allowable range. The Group uses derivatives for foreign exchange risk management purposes, if necessary.

The following table shows the sensitivity for each foreign currency on income or loss before income tax expense, with all other variables held constant, as of December 31, 2020 and December 31, 2019, when exchange rates change by 1% for the foreign exchange positions held by the Group.

In thousands of Korean won	2020		2019	
	1% increase	1% decrease	1% increase	1% decrease
USD	₩ (6,949,344)	₩ 6,949,344	₩ (3,351,201)	₩ 3,351,201
EUR	80,435	(80,435)	1,456,885	(1,456,885)
JPY	63,974	(63,974)	327,617	(327,617)
CNY	135,559	(135,559)	193,046	(193,046)
Total	₩ (6,669,376)	₩ 6,669,376	₩ (1,373,653)	₩ 1,373,653

The table above shows the sensitivity analysis performed on monetary assets and liabilities denominated in foreign currencies other than the Group's functional currency. The effect of changes in foreign exchange rates due to the hedging effectiveness of derivative instrument transactions was also considered.

(b) Interest rate risk
Interest rate risk is the risk that future changes in market interest rates will result in changes in interest income and interest costs, such as deposits and borrowing, mainly from deposits and borrowing in variable interest terms.

The goal of the group's interest rate risk management is to maximize the value of the entity by seeking to minimize the uncertainty of interest rate changes and net interest costs.

As of the end of the current year, if other variables are constant and interest rates on floating rate borrowing rise (falling) by 1%, the current period net income before corporate tax expense deduction is expected to have decreased (increased) by ₩30,412 million (December 31, 2019: ₩26,877 million).

(ii) Credit risk

The Group is exposed to credit risk that could result in financial loss to the other party due to the failure of one of the parties to the financial instrument to fulfill its obligations. The management of the Group deals with customers whose credit rating is above a certain level in order to manage credit risk. When a contract is made with a new customer, the Group evaluates the customer's creditworthiness by using financial information and information provided by the credit rating agency, and determines the credit limit based on this.

The Group's maximum exposure to credit risk is the carrying amount of all financial assets (excluding equity instruments), which include cash and cash equivalents deposited at financial institutions and trade receivables and other receivables.

(iii) Liquidity risk

The Group constantly monitors liquidity forecasts to ensure that the unused borrowing limit (see note 39) is maintained at an appropriate level and that it does not violate the borrowing limit or agreement to meet the demand for operating funds. The forecast for liquidity considers those requirements when there are external legislation or legal requirements, such as the Group's financing plans, compliance with agreements, target financial ratios within the Group and restrictions on currencies.

(a) Expected cash flows of non-derivative liabilities by maturity

Maturity of cash flows analysis of non-derivative liabilities according to their remaining maturities as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	**December 31, 2020**			
	Within 1 year	**1 to 5 years**	**After 5 years**	**Total**
Borrowings(*1)	₩ 3,108,935,957	₩ 2,261,956,272	₩555,420,794	₩5,926,313,023
Trade payables and other payables	1,556,391,780	14,511	-	1,556,406,291
Other financial liabilities(*2)	195,520,809	216,160,957	196,023,411	607,705,177
	₩ 4,860,848,546	₩ 2,478,131,740	₩751,444,205	₩8,090,424,491

(*1) Includes projected cash flows of related interest expense.
(*2) Projected cash flows from accrued interest and financial guarantee liabilities are not included.

In thousands of Korean won	**December 31, 2019**			
	Within 1 year	**1 to 5 years**	**After 5 years**	**Total**
Borrowings(*1)	₩3,497,798,186	₩ 2,697,046,628	₩471,888,898	₩6,666,733,712
Trade payables and other payables	1,573,035,225	4,998	-	1,573,040,223
Other financial liabilities(*2)	176,981,879	156,557,524	69,162,882	402,702,285
	₩5,247,815,290	₩ 2,853,609,150	₩541,051,780	₩8,642,476,220

(*1) Includes projected cash flows of related interest expense.
(*2) Projected cash flows from accrued interest and financial guarantee liabilities are not included.

(b) Expected cash flows of derivative liabilities by maturity

Expected cash flows of derivative liabilities by maturity as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	**December 31, 2020**			
	Within 1 year	**1 to 5 years**	**After 5 years**	**Total**
Derivative liabilities(*)	₩ 4,680,706	₩32,561,495	₩ 22,816,027	₩ 60,058,228

(*) Even if derivatives settled gross were classified as assets, expected cash flows are included in the liquidity risk analysis. Derivatives settled on a gross basis whose prices have not yet been determined are reflected in the expected net cash flows.

In thousands of Korean won	**December 31, 2019**			
	Within 1 year	**1 to 5 years**	**After 5 years**	**Total**

Derivative liabilities(*)	₩ (3,621,769)	₩ (6,435,457)	₩ 4,388,150	₩ (5,669,076)

(*) Even if derivatives settled gross were classified as assets, expected cash flows are included in the liquidity risk analysis. Derivatives settled on a gross basis whose prices have not yet been determined are reflected in the expected net cash flows.

(c) In addition to the financial liabilities above, the Group has signed financial guarantee contracts and supplemental funding agreements for related parties and employees. If related parties and employees fail to meet an obligation, additional payment obligations by the Group may be incurred within a year and the maximum amount of the related liquidity risk is ₩87,395 million (December 31, 2019: ₩132,013 million) (see Notes 39.(3) and 40.(6)).

(2) Capital Risk Management

The Group's capital management objective is to sustain the ability, as a going concern, to consistently deliver profits to shareholders and other stakeholders and to maintain a robust capital structure to reduce the cost of capital. The Group uses the debt-to-equity ratio as an indicator to manage capital. This ratio is calculated by dividing total debt by total equity. Total debt and total equity are presented in the consolidated financial statements as "total liabilities" and "total equity," respectively.

The debt-to-equity ratio of the Group as of December 31, 2020 and December 31, 2019 is as follows:

In thousands Korean won

	December 31, 2020	December 31, 2019
Total Debt(A)	9,169,604,331	9,875,281,658
Total Equity(B)	5,967,715,490	5,805,847,210
Debt-to-Equity Ratio(A/B)	153.65%	170.09%

5. FAIR VALUE:

(1) Fair value of financial instruments by category

Fair value and book value of financial instruments by category as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020		December 31, 2019	
	Book value	**Fair Value**	**Book value**	**Fair Value**
Financial assets				
Cash and cash equivalents	₩ 1,199,836,791	₩1,199,836,791	₩ 1,084,516,316	₩ 1,084,516,316
FVTPL - financial assets	4,778,417	4,778,417	3,190,283	3,190,283
FVTOCI - financial assets(*)	48,540,951	48,540,951	46,598,280	46,598,280
Trade receivables and other receivables	1,461,363,055	1,461,363,055	1,577,473,389	1,577,473,389
Other financial assets:				
Derivative assets	13,106,624	13,106,624	19,396,141	19,396,141
Others	241,816,664	241,816,664	549,219,443	549,219,443
Total	₩ 2,969,442,502	₩2,969,442,502	₩ 3,280,393,852	₩ 3,280,393,852
Financial liabilities				
Trade payables and other payables	₩ 1,556,406,291	₩1,556,406,291	₩ 1,573,040,223	₩ 1,573,040,223
Borrowings	5,688,573,526	5,684,824,126	6,368,573,228	6,632,959,885
Other financial liabilities:				
Derivative liabilities	73,164,853	73,164,853	13,727,065	13,727,065
Others	528,984,827	528,984,827	410,696,376	410,696,376
Total	₩ 7,847,129,497	₩7,843,380,097	₩ 8,366,036,892	₩ 8,630,423,549

(*) The acquisition cost was measured at fair value for non-listed shares whose fair value cannot be measured reliably because there is no active trading market or the difference between fair value and acquisition cost is not important.

(2) Fair value hierarchy

Financial instruments that are carried at fair values by hierarchy level as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020			
	Level 1	**Level 2**	**Level 3**	**Total**
Recurring fair value measurements				
FVTPL - financial assets	₩ -	₩ -	₩ 4,778,417	₩ 4,778,417
FVTOCI - financial assets	37,152,065	-	11,388,886	48,540,951
Derivative assets	-	13,106,624	-	13,106,624
Derivative liabilities	-	73,164,853	-	73,164,853
Non-Recurring fair value measurements				
Lands	-	-	39,064,630	39,064,630

In thousands of Korean won	December 31, 2019			
	Level 1	**Level 2**	**Level 3**	**Total**
Recurring fair value measurements				
FVTPL - financial assets	₩ -	₩ -	₩ 3,190,283	₩ 3,190,283
FVTOCI - financial assets	35,179,513	1,064	11,417,703	46,598,280
Derivative assets	-	19,396,141	-	19,396,141
Derivative liabilities	-	13,727,065	-	13,727,065
Non-Recurring fair value measurements				
Lands	-	-	39,064,630	39,064,630
Buildings	-	-	4,111,172	4,111,172

(3) Valuation techniques and inputs used in the recurring fair value measurements of financial instruments categorized within Level 2 and Level 3 of the fair value hierarchy are as follows:

- Derivative instruments (currency forwards, options and swaps and interest rate swaps)
Fair value of currency forwards and options is measured based on forward exchange rate quoted in the current market at the end of the reporting period, which has the same remaining period of derivatives to be measured. If the forward exchange rate, which has the same remaining period of currency forward, option, swap and interest rate swap, is not quoted in the current market, fair value is measured using estimates of similar period of forward exchange rate by applying interpolation method with quoted forward exchange rates. As the inputs used to measure fair value of currency forwards and options are supported by observable market data, such as forward exchange rates, the Group classified the estimates of fair value measurements of the currency forwards and options as Level 2 of the fair-value hierarchy.

- Government securities
The fair value of government securities is based on quoted prices in active markets, where available, discounted by the future cash flows of debt securities. The Group classifies government securities as Level 2 of the fair-value hierarchy.

- Unlisted equity securities
Fair value of unlisted equity securities is measured using discounted cash flow projection and certain assumptions not based on observable market prices or rates, such as sales growth rate, pretax operating income ratio and discount rate based on business plan and circumstance of industry are used to estimate the future cash flow. The weighted-average cost of capital used to discount the future cash flows, is calculated by applying the Capital Asset Pricing Model, using the data of similar listed companies. The Group determines that the effect of estimation and assumptions referred above affecting fair value of unlisted equity securities is significant and classifies fair value measurements of unlisted securities as Level 3 of the fair-value hierarchy.

- Property, plant and equipment
The Group measured fair value less costs to sell for testing the recoverable amount of the polysilicon the cash-generating unit. The fair value of lands and buildings has been assessed by an independent appraisal specialist, Tongil Appraisal Group. The specialist possesses relevant qualifications / licenses and knowledge suitable for measuring fair value of property, plant and equipment. The Group determines that the effect of estimation and assumptions referred above affecting fair value of property, plant and equipment is significant and classifies fair value measurements of property, plant and equipment as Level 3 of the fair-value hierarchy.

(4) Level 3 fair value

1) Changes in fair value of financial instruments classified as Level 3 for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won

		2020		2019
Beginning balance	₩	14,607,985	₩	16,007,189
Acquisition		2,354,267		5,878,193
Disposal		(186,966)		(1,751,361)
Total gain or loss for the period				
- Gains and losses included in other comprehensive income		(19,976)		220,307
- Gains and losses included in profit or loss		(461,783)		262,305
Others		(126,224)		(6,008,648)
Ending balance	₩	16,167,303	₩	14,607,985

There was no transfer between Level 2 and Level 3 for the years ended December 31, 2020.

2) Changes in fair value of property, plant and equipment classified as Level 3 for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won

		2020		2019
Beginning balance	₩	43,175,801	₩	361,883,851
Acquisition		-		4,617,398
Disposal		-		(2,294,878)
Depreciation		-		(35,164,528)
Impairment		-		(285,866,042)
Transfer(*)		(4,111,171)		-
Ending balance	₩	39,064,630	₩	43,175,801

(*) Building classified as level 3 was transferred from the discontinued operations to the continuing operations.

6. FINANCIAL INSTRUMENTS BY CATEGORY:

(1) Carrying amount of financial instruments by category

(i) Carrying amount of financial assets by category as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020				
	Financial assets at FVTPL	**Financial assets at FVTOCI**	**Financial assets at amortized cost**	**Others(*)**	**Total**
Current:					
Cash and cash equivalents	₩ -	₩ -	₩ 1,199,836,791	₩ -	₩ 1,199,836,791
FVTPL - financial assets	2,919,930	-	-	-	2,919,930
Trade receivables and other receivables	-	-	1,457,525,669	-	1,457,525,669
Other financial assets	12,954,637	-	179,677,955	151,987	192,784,579
Non-current:					
FVTPL - financial assets	1,858,487	-	-	-	1,858,487
FVTOCI - financial assets	-	48,540,951	-	-	48,540,951
Long-term trade receivables and other receivables	-	-	3,837,386	-	3,837,386
Other long-term financial assets	-	-	62,138,709	-	62,138,709
Total	₩ 17,733,054	₩ 48,540,951	₩ 2,903,016,510	₩ 151,987	₩ 2,969,442,502

(*) Includes hedging derivative instruments not applicable to financial assets by category.

In thousands of Korean won	December 31, 2019				
	Financial assets at FVTPL	**Financial assets at FVTOCI**	**Financial assets at amortized cost**	**Others(*)**	**Total**
Current:					
Cash and cash equivalents	₩ -	₩ -	₩ 1,084,516,316	₩ -	₩ 1,084,516,316
FVTPL - financial assets	1,060,994		-	-	1,060,994
FVTOCI - financial assets	-	1,064	-	-	1,064
Trade receivables and other receivables	-	-	1,572,845,944	-	1,572,845,944
Other financial assets	5,383,621	-	486,726,204	780,352	492,890,177
Non-current:					
FVTPL - financial assets	2,129,289	-	-	-	2,129,289
FVTOCI - financial assets	-	46,597,216	-	-	46,597,216
Long-term trade receivables and other receivables	-	-	4,627,445	-	4,627,445
Other long-term financial assets	11,057,408	-	62,493,239	2,174,760	75,725,407
Total	₩ 19,631,312	₩ 46,598,280	₩ 3,211,209,148	₩ 2,955,112	₩ 3,280,393,852

(*) Includes hedging derivative instruments not applicable to financial assets by category.

(ii) Carrying amounts of financial liabilities by category as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020			
	Financial liabilities at FVTPL	**Financial liabilities at amortized cost**	**Others(*)**	**Total**
Current:				
Trade payables and other payables	₩ -	₩1,556,391,780	₩ -	₩1,556,391,780
Short-term borrowings	-	2,959,246,632	12,678,872	2,971,925,504
Other financial liabilities	17,730,273	203,280,910	1,146,326	222,157,509
Non-current:				
Long-term trade payables and other payables	-	14,511	-	14,511
Long-term borrowings	-	2,716,648,022	-	2,716,648,022
Other long-term financial liabilities	52,043,375	325,556,249	2,392,547	379,992,171
Total	₩ 69,773,648	₩7,761,138,104	₩ 16,217,745	₩7,847,129,497

(*) Includes hedging derivative instruments, financial liabilities and financial guarantees related to transfer transactions not qualified for derecognition not applicable to financial liabilities by category.

In thousands of Korean won	December 31, 2019			
	Financial liabilities at FVTPL	**Financial liabilities at amortized cost**	**Others(*)**	**Total**
Current:				
Trade payables and other payables	₩ -	₩1,573,035,225	₩ -	₩1,573,035,225
Short-term borrowings	-	3,372,331,881	12,181,962	3,384,513,843
Other financial liabilities	2,799,325	189,334,898	13,427,845	205,562,068
Non-current:				
Long-term trade payables and other payables	-	4,998	-	4,998
Long-term borrowings	-	2,984,059,385	-	2,984,059,385
Other long-term financial liabilities	9,980,808	208,117,840	762,725	218,861,373
Total	₩ 12,780,133	₩8,326,884,227	₩ 26,372,532	₩8,366,036,892

(*) Includes hedging derivative instruments, financial liabilities and financial guarantees related to transfer transactions not qualified for derecognition not applicable to financial liabilities by category.

(2) Net profit or loss of financial instruments by category

Details of net profit or loss of financial instruments by category for the years periods ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won	2020				
	Financial assets at FVTPL(*1)	**Financial assets at FVTOCI**	**Financial assets at amortized cost**	**Financial liabilities at amortized cost(*2)**	**Total**
Interest income	₩ 58,749	₩ -	₩ 24,527,547	₩ -	₩ 24,586,296
Gain on foreign currency transactions	194,068	-	130,664,771	40,502,736	171,361,575
Gain on foreign currency translation	76,805	-	138,921,811	77,228,139	216,226,755
Interest expense	-	-	-	(205,280,548)	(205,280,548)
Loss on foreign currency transactions	(739,566)	-	(122,375,828)	(69,536,275)	(192,651,669)
Loss on foreign currency translation	(143,945)	-	(46,298,371)	(116,750,427)	(163,192,743)
Bad debt expense	-	-	(3,527,756)	-	(3,527,756)
Other bad debt expense	-	-	(21,471,387)	-	(21,471,387)
Reversal of bad debt expense	-	-	3,484,522	-	3,484,522
Gain on valuation of FVTPL - financial assets	58,296	-	-	-	58,296
Gain on disposal of FVTPL - financial assets	61,832	-	-	-	61,832
Loss on disposal of FVTPL - financial assets	(520,079)	-	-	-	(520,079)
Loss on disposal of FVTOCI - financial assets	-	(18,058)	-	-	(18,058)
Loss on disposal of trade receivables	-	-	(548,803)	-	(548,803)
Gain on valuation of derivatives	18,329,923	-	-	-	18,329,923
Gain on transactions of derivatives	35,521,382	-	-	-	35,521,382
Loss on valuation of derivatives	(80,664,031)	-	-	-	(80,664,031)
Loss on transactions of derivatives	(20,866,968)	-	-	-	(20,866,968)
Dividend income	-	879,802	-	-	879,802
Subtotal	(48,633,534)	861,744	103,376,506	(273,836,375)	(218,231,659)
Other comprehensive income:					
Gain (loss) on valuation of FVTOCI - financial assets	-	1,957,985	-	-	1,957,985
Gain (loss) on valuation of derivatives	(285,398)	-	-	-	(285,398)
Total	₩(48,918,932)	₩ 2,819,729	₩ 103,376,506	₩ (273,836,375)	₩ (216,559,072)

(*1) Includes profit and loss of hedging derivative instruments in Note 6 (1).

(*2) Includes profit and loss of financial liabilities and financial guarantees related to transfer transactions not qualified for derecognition in Note 6 (1), (ii)

In thousands of Korean won	2019				
	Financial assets at FVTPL(*1)	**Financial assets at FVTOCI**	**Financial assets at amortized cost**	**Financial liabilities at amortized cost(*2)**	**Total**
Interest income	₩ -	₩ -	₩ 25,780,335	₩ -	₩ 25,780,335
Gain on foreign currency transactions	1,817,523	-	118,241,501	35,793,193	155,852,217
Gain on foreign currency translation	638,118	-	88,742,772	28,212,832	117,593,722
Interest expense	-	-	-	(224,511,951)	(224,511,951)
Loss on foreign currency transactions	(743,933)	-	(54,229,279)	(113,226,899)	(168,200,111)
Loss on foreign currency translation	(514,126)	-	(41,021,695)	(89,153,027)	(130,688,848)
Bad debt expense	-	-	(31,253,507)	-	(31,253,507)
Other bad debt expense	-	-	(16,841,214)	-	(16,841,214)
Reversal of bad debt expense	-	-	998,253	-	998,253
Reversal of other bad debt expense	-	-	1,554,268	-	1,554,268
Gain on valuation of FVTPL - financial assets	432,035	-	-	-	432,035
Gain on disposal of FVTPL - financial assets	9,094	-	-	-	9,094
Loss on disposal of financial assets at amortized cost	-	-	(10,670)	-	(10,670)
Loss on disposal of trade receivables	-	-	(1,441,211)	-	(1,441,211)
Gain on valuation of derivatives	18,572,128	-	-	-	18,572,128
Gain on transactions of derivatives	45,351,707	-	-	-	45,351,707
Loss on valuation of derivatives	(17,275,657)	-	-	-	(17,275,657)
Loss on transactions of derivatives	(30,132,823)	-	-	-	(30,132,823)
Dividend income	-	1,944,074	-	-	1,944,074
Others	(207,860)	-	-	-	(207,860)
Subtotal	17,946,206	1,944,074	90,519,553	(362,885,852)	(252,476,019)
Other comprehensive income:					
Gain (loss) on valuation of FVTOCI - financial assets	-	(28,833,641)	-	-	(28,833,641)
Gain (loss) on valuation of derivatives	(632,803)	-	-	-	(632,803)
Total	₩ 17,313,403	₩ (26,889,567)	₩ 90,519,553	₩ (362,885,852)	₩ (281,942,463)

(*1) Includes profit and loss of hedging derivative instruments in Note 6 (1).
(*2) Includes profit and loss of financial liabilities and financial guarantees related to transfer transactions not qualified for derecognition in Note 6 (1), (ii)

7. TRANSFERS OF FINANCIAL ASSETS:

The Group transfers financial assets that are not derecognized in their entirety and counterparties of the related liabilities have recourse for the transferred assets.

All of the transferred financial assets as of December 31, 2020, are recognized as trade receivables and the related liabilities are accounted for as short-term borrowings. The carrying amounts and the fair value of transferred trade receivables and related liabilities amounted to ₩12,679 million (December 31, 2019: ₩12,182 million) and the net position is nil.

8. CASH AND CASH EQUIVALENTS:

Restricted cash and cash equivalents provided as collateral for borrowings and others as of December 31, 2020, are ₩26,896 million won (December 31, 2019: ₩7,127 million won) (See Note 39).

9. TRADE RECEIVABLES AND OTHER RECEIVABLES:

(1) Trade receivables and other receivables as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020		December 31, 2019	
	Current	Non-current	Current	Non-current
Trade receivables	₩ 1,593,948,707	₩ 526,543	₩ 1,657,367,539	₩ 585,590
Allowance for doubtful accounts	(160,578,881)	-	(152,908,344)	-
Present value discount	(9,684)	(67,584)	(9,674)	(77,231)
Subtotal	1,433,360,142	458,959	1,504,449,521	508,359
Other receivables	25,377,960	4,829,484	75,283,033	9,297,296
Allowance for doubtful accounts	(1,212,433)	(1,007,046)	(6,886,610)	(4,734,199)
Present value discount	-	(444,011)	-	(444,011)
Subtotal	24,165,527	3,378,427	68,396,423	4,119,086
Total	₩ 1,457,525,669	₩ 3,837,386	₩ 1,572,845,944	₩ 4,627,445

(2) The aging analysis of trade receivables and other receivables as of December 31, 2020 and December 31, 2019 are as follows:

In thousands of Korean won	December 31, 2020		December 31, 2019	
	Account Receivables	Other Receivables	Account Receivables	Other Receivables
Receivables not past due:	₩ 1,163,317,105	₩ 17,854,569	₩ 845,184,894	₩ 30,135,102
Past due but not impaired:				
Less than 3 months	149,125,820	5,162,730	522,805,141	39,724,711
Less than 6 months	38,821,756	21,444	74,570,840	1,417,894
Less than 1 year	47,842,582	26,999	101,719,982	3,722,684
Over 1 year	179,882,165	5,143,857	97,475,772	6,883,030
Subtotal	415,672,323	10,355,030	796,571,735	51,748,319
Impaired(*1)				
Less than 3 months	18,594	-	-	221,193
Less than 6 months	729,240	7,000	-	-
Less than 1 year	702,168	25,000	751,578	573,244
Over 1 year	14,035,820	1,965,845	15,358,017	1,458,461
Subtotal	15,485,822	1,997,845	16,109,595	2,252,898
Total(*2)	₩ 1,594,475,250	₩ 30,207,444	₩ 1,657,866,224	₩ 84,136,319

(*1) The distinction between unimpaired and impaired receivables is the result of individual evaluation.

(*2) Total amount of account receivables and other receivables before deducting the present value discount.

(3) Credit risk and Loss allowance

1) Changes in allowance for doubtful accounts for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won	2020		
	Non-impaired receivables	**Impaired receivables**	**Total**
Beginning balance	₩ 142,992,112	₩ 21,537,041	₩ 164,529,153
Write-offs	(2,000,123)	(766,886)	(2,767,009)
Reversal	-	(3,484,522)	(3,484,522)
Changes by increases or collections of receivables	2,902,097	432,951	3,335,048
Changes in exchange rates and others	1,420,608	(234,918)	1,185,690
Ending balance(*)	₩ 145,314,694	₩ 17,483,666	₩ 162,798,360

(*) As of December 31, 2020, the Group applies the practical expedient of K-IFRS 1109 and measures loss allowance of trade and other accounts receivable at lifetime expected credit losses.

In thousands of Korean won	2019		
	Non-impaired receivables	**Impaired receivables**	**Total**
Beginning balance	₩ 141,124,170	₩ 31,103,242	₩ 172,227,412
Write-offs	(20,159,099)	(26,453,560)	(46,612,659)
Reversal	(1,134,366)	(1,229,837)	(2,364,203)
Changes by increases or collections of receivables	18,457,789	13,194,436	31,652,225
Changes in exchange rates and others	4,703,618	4,922,760	9,626,378
Ending balance(*)	₩ 142,992,112	₩ 21,537,041	₩ 164,529,153

(*) As of December 31, 2019, the Group applies the practical expedient of K-IFRS 1109 and measures loss allowance of trade and other accounts receivable at lifetime expected credit losses.

2) Amounts recognized in profit or loss as Loss Allowances for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won	**2020**	**2019**
Loss Allowances		
- Changes of allowances for impairment	₩ 3,335,048	₩ 31,652,225

(4) Trade receivables and other receivables are provided as collateral for borrowings as of December 31, 2020 (see Note 39).

10. OTHER FINANCIAL ASSETS:

(1) Other financial assets as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020		December 31, 2019	
	Current	Non-current	Current	Non-current
Financial instruments	₩ 170,025,248	₩ 6,578,801	₩ 461,270,771	₩ 9,533,890
Loans	3,361,926	9,368,973	11,282,766	22,610,049
Deposits	5,121,579	46,190,935	11,214,496	30,349,300
Accrued revenue	1,169,202	-	2,958,171	-
Derivative assets	13,106,624	-	6,163,973	13,232,168
Total	₩ 192,784,579	₩ 62,138,709	₩ 492,890,177	₩ 75,725,407

(2) Derivatives

The Group entered into currency forwards, cross currency swaps and other contracts to hedge exchange rate risk of trade receivables denominated in foreign currencies.

Derivatives as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020		December 31, 2019	
	Assets	Liabilities	Assets	Liabilities
Trading:				
Currency forwards	₩ 12,442,245	₩ 1,643,695	₩ 3,672,676	₩ 245,108
Currency swaps	512,392	65,944,665	12,768,353	9,037,595
Interest rate swaps	-	2,185,289	-	3,497,430
Subtotal	12,954,637	69,773,649	16,441,029	12,780,133
Cash flow hedge:				
Currency swaps	151,987	2,287,602	2,955,112	-
Interest rate swaps	-	1,103,602	-	946,932
Subtotal	151,987	3,391,204	2,955,112	946,932
Total	₩ 13,106,624	₩ 73,164,853	₩ 19,396,141	₩ 13,727,065

(3) Impairment of other financial assets

For the purpose of impairment testing, government bonds and unsecured corporate bonds are considered to have low credit risk because the counterparty's credit rating is at least BBB-rated. Therefore, for the purpose of impairment testing for these financial assets, the allowance for losses was measured at the amount equivalent to the expected 12-month credit loss. Loans and leasehold deposits that are acquired before the initial application date of the related-party loans and lease deposits are measured at the initial date of application of K-IFRS 1109 to the extent that the credit risk has increased significantly after the initial recognition. For-sale financial assets are measured at the amount corresponding to the expected credit loss over the period until the financial assets are disposed of. Management is also considering the future outlook of the industry to which the issuer of the financial asset belongs when determining the expected credit loss through past experience of default, the financial condition of the counterparty, as well as reports from economists or financial analysts. There are no changes of estimates or assumptions used to estimate the allowance for losses on these financial assets for the years ended December 31, 2020.

(4) Other financial assets are provided as collateral for borrowings as of December 31, 2020 (see Note 39).

11. OTHER ASSETS:

Other assets as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020		December 31, 2019	
	Current	Non-current	Current	Non-current
Advance payments	₩ 315,041,584	₩ -	₩ 268,388,198	₩ -
Allowances for impairment	(106,567,785)	-	(105,789,080)	-
Prepaid expenses	33,283,560	2,676,009	31,675,876	2,431,659
Emission rights	4,441,305	-	-	-
Refund asset(*)	54,727	-	76,365	-
Contract asset	16,736,006	-	38,512,027	-
Prepaid construction cost	2,050,264	-	53,119,535	-
Prepaid value-added tax and others	62,638,267	13,610,034	84,454,783	13,533,347
Total	₩ 327,677,928	₩ 16,286,043	₩ 370,437,704	₩ 15,965,006

(*) If the customer exercises the right to return the product under K-IFRS 1115, the Group includes a refund asset related to the right to collect the product from the customer (see Note 23.(2)).

12. INVENTORIES:

(1) Inventories as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020			December 31, 2019		
	Acquisition cost	Valuation reserve	Book value	Acquisition cost	Valuation reserve	Book value
Merchandise	₩ 171,217,900	₩ (4,142,304)	₩ 167,075,596	₩ 200,299,944	₩ (1,917,735)	₩ 198,382,209
Finished goods	575,642,899	(10,807,940)	564,834,959	542,838,212	(16,972,467)	525,865,745
Half-finished goods	31,553,172	(769,758)	30,783,414	56,394,007	(545,732)	55,848,275
Work in process	267,874,000	-	267,874,000	203,192,015	-	203,192,015
Raw materials	214,152,703	(12,452,509)	201,700,194	252,355,193	(9,531,269)	242,823,924
Supplies	82,178,189	-	82,178,189	92,952,473	(15,063,981)	77,888,492
Goods in transit	117,142,043	-	117,142,043	175,891,313	-	175,891,313
Total	₩1,459,760,906	₩ (28,172,511)	₩1,431,588,395	₩1,523,923,157	₩ (44,031,184)	₩1,479,891,973

(2) The loss on valuation of inventories included in cost of sales in the consolidated statement of comprehensive income for the years ended December 31, 2020, amounts to ₩28,173 million (December 31, 2019: ₩44,031 million).

(3) Inventories are provided as collateral for borrowings as of December 31, 2020 (see Note 39).

13. FAIR VALUE FINANCIAL ASSETS:

(1) Fair value financial assets as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won		December 31, 2020		December 31, 2019
Profit or loss				
Equity securities				
Unlisted securities	₩	4,778,417	₩	3,190,283
Subtotal		4,778,417		3,190,283
Other Comprehensive Income(*)				
Equity securities				
Listed securities		37,152,065		35,179,513
Unlisted securities		11,388,886		11,417,703
Subtotal		48,540,951		46,597,216
Debt securities		-		1,064
Subtotal		-		1,064
Total	₩	53,319,368	₩	49,788,563

(*) The Group has employed an irrevocable option, designating equity instrument for the purpose of strategic investment, not for trading, as financial assets at FVTOCI.

(2) Changes in Fair value financial assets for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won		2020		2019
Beginning balance	₩	49,788,563	₩	80,312,075
Acquisition		2,354,267		25,878,193
Disposal/Transfer		(187,946)		(21,991,452)
Valuation-FVTOCI		1,952,492		(28,833,641)
Valuation-FVTPL		(461,783)		432,035
Others (*)		(126,225)		(6,008,647)
Ending balance	₩	53,319,368	₩	49,788,563

(*) Includes effects due to changes in scope of consolidation and exchange rate changes and impairment and others.

14. INVESTMENTS IN ASSOCIATES AND JOINT VENTURES:

(1) Investments in associates and joint ventures as of December 31, 2020 and December 31, 2019 are as follows:

In thousands of Korean won

Investees	Location	Closing Month	Main business	Ownership (%) December 31, 2020	Ownership (%) December 31, 2019
Associates:					
Smile Ventures Co., Ltd.(*1)	Korea	December	Wholesale and retail	21.89%	28.74%
H2 Co., Ltd(*2)	Korea	December	ESS manufacturing and sales	19.71%	19.71%
Hanwha Savings Bank Co., Ltd.	Korea	December	Bank business	36.05%	36.05%
HANWHA Eagles Professional Baseball Club	Korea	December	Sports club operating	50.00%	50.00%
Eagles Energy Co., Ltd	Korea	December	Photovoltaic business	49.09%	49.09%
Hanwha Station Development Co., Ltd.	Korea	December	Rent business	48.32%	48.32%
Hanwha General Chemical Co., Ltd.	Korea	December	Manufacture of basic compound of petrochemicals	36.05%	36.05%
HANWHA INVESTMENT AND SECURITIES CO., LTD.(*3)	Korea	December	Stock Broking	17.56%	17.56%
Hanwha Hotels and Resort Co., Ltd.	Korea	December	Tourism and Lodge Industry	48.78%	48.78%
Alterpower Digos Solar, Inc.(*4)	Philippines	December	Photovoltaic business	-	35.00%
Alterpower Specialist, Inc.(*5)	Philippines	December	Photovoltaic business	7.69%	20.00%
Crystal Solar Inc.	USA	December	Solar Engineering	29.09%	29.09%
GRANSOLAR ATOTONILCO, S.A. DE C.V.	Mexico	December	Construction Business	20.00%	20.00%
GRANSOLAR OCOTLAN, S.A. DE C.V.	Mexico	December	Construction Business	20.00%	20.00%
International Polymers Company	Saudi Arabia	December	Manufacture of basic compound	25.00%	25.00%
JV Cooke Solar, LLC(*6)	USA	December	Solar photovoltaic power business	33.66%	-
Kellam Tax Equity Partnership, LLC(*6,7)	USA	December	Solar photovoltaic power business	69.00%	-
Luxbon Solar S.A.	Luxembourg	December	Photovoltaic business	33.33%	33.33%
Renew Akshay Urja Privated Limited(*4)	India	March	Photovoltaic business	-	43.87%
Saudi Specialized Products Group(*4)	Saudi Arabia	December	Manufacture of chemicals	-	25.00%
SwitchDin Pty Limited(*8)	Austrailia	June	Development of Energy Management System	20.26%	-
Joint ventures:					
YEOCHUN NCC Co., Ltd.	Korea	December	Manufacture of basic compound	50.00%	50.00%
Burdur Enerji A.S.	Turkey	December	Photovoltaic business	50.00%	50.00%
Gulf Advanced Cables Insulation Group	Saudi Arabia	December	Manufacture of cable	50.00%	50.00%
HSP TW TE, LLC	USA	December	Photovoltaic business	50.00%	50.00%
Lakeshore East Retail LLC	USA	December	Real estate	50.00%	50.00%
Parcel O LLC	USA	December	Real estate	50.00%	50.00%

(*1) Due to the issuance of unequal shares for the years ended December 31, 2020, the Group's ownership percentage decreased.
(*2) As the Group has significant influence in accordance with the contract of management advice, it has been classified as an investment asset, such as an associate.
(*3) As the Group has significant influence in accordance with the joint agreement between shareholders, it has been classified as an investment asset, such as an associate.
(*4) Disposition for the invest was completed for the year ended December 31, 2020.
(*5) The Group's ownership percentage decreased due to the disposition of part of shares, which were reclassified as FVOCI-financial assets from investments in associates for the year ended December 31, 2020.
(*6) The associates were newly established for the year ended December 31, 2020.
(*7) Main decision of management were decided in collaboration with other shareholders in accordance with the partnership agreement, it has been classified as an investments in associates not as a subsidiaries.
(*8) The associates were newly acquired for the year ended December 31, 2020.

(2) Valuation of investments in associates and joint ventures under the equity method for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won

	2020					
Investees	**Beginning balance**	**Acquisition (disposal)**	**Gain or loss on equity method investments**	**Other comprehensive income (loss)**	**Others(*)**	**Ending balance**
Associates:						
Smile Ventures Co., Ltd.	₩ 1,394,579	₩ -	₩ (1,222,929)	₩ 215,409	₩ 1,677,506	₩ 2,064,565
H2 Co., Ltd	5,874,241	-	(433,516)	-	-	5,440,725
Hanwha Savings Bank Co., Ltd.	72,664,593	-	7,486,057	23,683	10,123	80,184,456
Hanwha Station Development Co., Ltd.	80,357,419	-	824,901	-	(1,546,211)	79,636,109
HANWHA Eagles Professional Baseball Club	112,751	-	45,500	-	(54,289)	103,962
Hanwha General Chemical Co., Ltd.	1,211,716,118	-	86,864,852	(33,773,209)	121,265	1,264,929,026
HANWHA INVESTMENT AND SECURITIES CO.,LTD.	202,735,329	-	13,287,113	3,478,088	240,258	219,740,788
Hanwha Hotels and Resort Co., Ltd.	278,511,747	-	(84,937,624)	(2,564,053)	641,983	191,652,053
Crystal Solar Inc.	-	-	-	-	-	-
GRANSOLAR ATOTONILCO, S.A. DE C.V.	-	-	-	-	-	-
GRANSOLAR OCOTLAN, S.A. DE C.V.	-	-	-	-	-	-
International Polymers Company	125,627,715	-	18,553,982	(8,701,531)	(7,539,193)	127,940,973
JV Cooke Solar, LLC	-	31,003,940	(2,987,921)	-	(714,640)	27,301,379
Kellam Tax Equity Partnership, LLC	-	14,482,365	(9,816,242)	-	(365,465)	4,300,658
Renew Akshay Urja Private Limited	20,822,393	(21,085,760)	263,581	-	(214)	-
Saudi Specialized Products Company	-	-	-	-	-	-
SwitchDin Pty Limited	-	3,964,350	(274,339)	36,622	218,450	3,945,083
Others	2,911,236	(81,691)	8,893,091	(221,081)	61,275	11,562,830
Subtotal	2,002,728,121	28,283,204	36,546,506	(41,506,072)	(7,249,152)	2,018,802,607
Joint ventures:						
YEOCHUN NCC Co., Ltd.	683,677,830	-	126,808,193	-	(167,982,270)	642,503,753
Burdur Enerji A.S.	-	-	-	-	-	-
Gulf Advanced Cables Insulation Group	2,803,354	-	(3,180,274)	376,920	-	-
HSP TW TE, LLC	7,487,386	-	(17,574)	(393,127)	(2,286,466)	4,790,219
Lakeshore East Retail LLC	3,562,675	-	1,029	-	(2,509,079)	1,054,625
Parcel O LLC	20,557,448	-	-	-	(2,545,104)	18,012,344
Subtotal	718,088,693	-	123,611,374	(16,207)	(175,322,919)	666,360,941
Total	₩ 2,720,816,814	₩ 28,283,204	₩ 160,157,880	₩ (41,522,279)	₩ (182,572,071)	₩ 2,685,163,548

(*) Includes gain on bargain purchase, impairment amount, change in foreign currencies and dividends received.

In thousands of Korean won	2019					
Investees	Beginning balance	Acquisition (disposal)	Gain or loss on equity method investments	Other comprehensive income (loss)	Others(*)	Ending balance
Associates:						
Smile Ventures Co., Ltd.	₩ 2,054,053	₩ -	₩ (659,474)	₩ -	₩ -	₩ 1,394,579
H2 Co., Ltd	-	3,000,008	(125,771)	-	3,000,004	5,874,241
Hanwha Savings Bank Co., Ltd.	67,870,127	-	4,821,867	977	(28,378)	72,664,593
Hanwha Station Development Co., Ltd.	78,469,638	-	3,587,675	-	(1,699,894)	80,357,419
HANWHA Eagles Professional Baseball Club	395,291	-	(186,109)	-	(96,431)	112,751
Hanwha General Chemical Co., Ltd.	1,134,090,828	-	78,744,496	(1,074,006)	(45,200)	1,211,716,118
HANWHA INVESTMENT AND SECURITIES CO.,LTD.	226,611,639	-	3,390,153	1,232,284	(28,498,747)	202,735,329
Hanwha Hotels and Resort Co., Ltd.	329,959,659	-	(55,939,648)	2,872,137	1,619,599	278,511,747
7000 Hawaii KAI LLC	13,231,666	(11,775,309)	(2,472,853)	-	1,016,496	-
CRP/Extell Parcel J, L.P.	-	-	-	-	-	-
Crystal Solar Inc.	-	-	-	-	-	-
GRANSOLARATOTONILO, S.A. DE C.V.	-	-	-	-	-	-
GRANSOLAR OCOTLAN, S.A. DE C.V.	-	-	-	-	-	-
International Polymers Company	117,212,286	-	17,828,954	3,723,974	(13,137,499)	125,627,715
Renew Akshay Urja Privated Limited	20,012,456	-	478,271	-	331,666	20,822,393
Saudi Specialized Products Group	7,416,512	-	(4,039,305)	291,383	(3,668,590)	-
Others	2,461,383	-	443,727	6,126	-	2,911,236
Subtotal	1,999,785,538	(8,775,301)	45,871,983	7,052,875	(41,206,974)	2,002,728,121
Joint ventures:						
YEOCHUN NCC Co., Ltd.	581,122,539	-	172,824,762	-	(70,269,471)	683,677,830
Burdur Enerji A.S.	-	-	-	-	-	-
Gulf Advanced Cables Insulation Group	8,428,914	-	(4,487,510)	329,947	(1,467,997)	2,803,354
HANWHA KALYON GUNES ENERJISI URETIM ANONIM SIRKETI	-	-	-	-	-	-
HANWHA KALYON GUNES TEKNOLOJILERI URETIM ANONIM SIRKETI	-	-	-	-	-	-
HSP TW TE, LLC	7,519,026	-	(18,650)	256,042	(269,032)	7,487,386
Lakeshore East Retail LLC	5,745,293	-	(434,422)	-	(1,748,196)	3,562,675
Parcel O LLC	19,759,958	-	-	-	797,490	20,557,448
Subtotal	622,575,730	-	167,884,180	585,989	(72,957,206)	718,088,693
Total	₩ 2,622,361,268	₩ (8,775,301)	₩ 213,756,163	₩ 7,638,864	₩ (114,164,180)	₩ 2,720,816,814

(*) Includes impairment amount, gain on bargain purchase, change in foreign currencies and dividends received.

(3) Summary of financial information of key associates and joint ventures as of December 31, 2020 and December 31, 2019 are as follows:

In thousands of Korean won

	December 31, 2020					
Investees	**Assets**	**Liabilities**	**Equity**	**Revenue**	**Net income (loss)**	**Total comprehen-sive income**
Associates:						
Hanwha Savings Bank Co., Ltd.	₩ 1,101,809,664	₩ 964,394,177	₩ 137,415,487	₩ 61,745,918	₩ 20,779,270	₩ 20,861,557
Hanwha Station Development Co., Ltd.	512,562,557	375,481,700	137,080,857	139,275,322	4,719,862	4,794,652
Hanwha General Chemical Co., Ltd.	3,911,518,783	432,772,003	3,478,746,780	941,766,855	247,852,718	153,518,072
HANWHA INVESTMENT AND SECURITIES CO., LTD.	11,859,021,179	10,606,835,890	1,252,185,289	2,752,628,620	67,145,552	96,564,457
Hanwha Hotels and Resort Co., Ltd.	2,470,816,004	2,051,390,981	419,425,023	462,258,905	(138,714,577)	(141,420,983)
International Polymers Company	855,477,316	350,458,177	505,019,139	308,074,276	74,411,052	40,038,452
Joint ventures:						
YEOCHUN NCC Co., Ltd.	2,805,738,291	1,490,742,347	1,314,995,944	3,944,535,522	243,347,466	237,165,517
Gulf Advanced Cables Insulation Group	55,772,566	62,740,039	(6,967,473)	33,087,579	(16,264,628)	(15,510,788)
Lakeshore East Retail LLC	51,234,196	36,256,003	14,978,193	7,048,336	2,056	2,056
Parcel O LLC	44,846,141	3,978,538	40,867,603	-	-	-

In thousands of Korean won

	December 31, 2019					
Investees	**Assets**	**Liabilities**	**Equity**	**Revenue**	**Net income (loss)**	**Total comprehen-sive income**
Associates:						
Hanwha Savings Bank Co., Ltd.	₩ 960,167,900	₩ 843,613,969	₩ 116,553,931	₩ 52,388,195	₩ 13,383,483	₩ 13,300,777
Hanwha Station Development Co., Ltd.	497,314,513	361,753,272	135,561,241	205,419,766	10,438,067	10,194,777
Hanwha General Chemical Co., Ltd.	3,675,003,614	350,032,514	3,324,971,100	1,472,790,492	215,281,977	210,962,580
HANWHA INVESTMENT AND SECURITIES CO., LTD.	9,878,260,429	8,722,880,934	1,155,379,495	1,571,216,446	98,552,714	108,537,313
Hanwha Hotels and Resort Co., Ltd.	2,772,974,398	2,168,309,823	604,664,575	657,843,465	(114,286,446)	(107,008,839)
International Polymers Company	914,584,449	419,251,867	495,332,582	336,864,400	67,926,433	82,321,009
Joint ventures:						
YEOCHUN NCC Co., Ltd.	2,550,058,302	1,142,887,922	1,407,170,380	5,006,424,988	343,066,801	342,310,450
Gulf Advanced Cables Insulation Group	73,583,725	65,040,410	8,543,315	31,730,643	(8,943,878)	(8,314,868)
Lakeshore East Retail LLC	55,229,547	38,774,189	16,455,358	7,453,843	(827,145)	(827,145)
Parcel O LLC	47,045,493	3,556,052	43,489,441	-	-	-

(4) Details of financial information of key associates and joint ventures as of December 31, 2020 and December 31, 2019 are as follows:

In thousands of Korean won	**YEOCHUN NCC Co., Ltd.**		**Hanwha General Chemical Co., Ltd.**	
	December 31, 2020	**December 31, 2019**	**December 31, 2020**	**December 31, 2019**
Cash and cash equivalents	₩ 131,861,435	₩ 122,325,542	₩ 423,538,663	₩ 285,060,398
Current financial liabilities	179,030,994	177,516,360	100,693,703	27,015,942
Non-current financial liabilities	946,155,908	407,825,205	52,632,905	8,298,929
Depreciation(*)	86,818,807	89,487,254	27,837,747	30,496,904
Depreciation on right-of-use assets(*)	3,507,246	3,038,531	947,371	976,610
Amortization of Intangible assets (*)	932,600	-	3,041	730
Interest income	1,539,383	462,376	15,640,038	20,148,697
Interest expense	6,868,849	6,360,901	5,284,367	6,068,776
Income tax expense	57,880,391	103,070,455	65,568,292	14,808,259

(*) Includes expenses classified as cost of sales and selling expenses.

(5) Dividends received from associates and joint ventures for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won	2020	2019
Associates:		
Hanwha Station Development Co., Ltd.	₩ 1,582,347	₩ 1,582,347
International Polymers Company	7,539,193	13,866,251
Joint ventures:		
YEOCHUN NCC Co., Ltd.	165,000,000	70,000,000
HSP TW TE, LLC	293,222	269,032
Lakeshore East Retail LLC	570,287	1,748,201

(6) Adjustments from financial information of key associates and joint ventures to book value of investments in associates and joint ventures as of December 31, 2020 and December 31, 2019 are as follows:

In thousands of Korean won	December 31, 2020					
Investees	Net assets at year-end (a) (*)	Group ownership (b)	Interest on net assets(a x b)	Goodwill	Derecognised unrealized gains(losses)	Year-end book value
Associates:						
Hanwha Savings Bank Co., Ltd.	₩ 137,415,487	36.05%	₩ 49,533,489	₩ 30,650,967	₩ -	₩ 80,184,456
Hanwha Station Development Co., Ltd.	137,080,857	48.32%	66,231,175	464,326	12,940,608	79,636,109
Hanwha General Chemical Co., Ltd.(*)	3,478,746,780	36.05%	1,253,927,309	2,693,337	8,308,380	1,264,929,026
HANWHA INVESTMENT AND SECURITIES CO., LTD. (*)	1,251,726,614	17.56%	219,767,668	-	(26,880)	219,740,788
Hanwha Hotels and Resort Co., Ltd. (*)	413,201,382	48.78%	201,557,335	-	(9,905,282)	191,652,053
International Polymers Company	505,019,139	25.00%	126,254,785	1,795,924	(109,736)	127,940,973
Joint ventures:						
YEOCHUN NCC Co., Ltd.	1,314,995,944	50.00%	657,497,972	-	(14,994,219)	642,503,753
Gulf Advanced Cables Insulation Group	(6,967,473)	50.00%	(3,483,737)	-	3,483,737	-
Lakeshore East Retail LLC	14,978,193	50.00%	7,489,097	-	(6,434,472)	1,054,625
Parcel O LLC	40,867,603	50.00%	20,433,802	-	(2,421,458)	18,012,344

(*) Associates prepare their consolidated financial statements, in which their stated net assets refer to equity attributable to owners of the Group.

In thousands of Korean won	December 31, 2019					
Investees	Net assets at year-end (a) (*)	Group ownership (b)	Interest on net assets(a x b)	Goodwill	Derecognised unrealized gains(losses)	Year-end book value
Associates:						
Hanwha Savings Bank Co., Ltd.	₩ 116,553,931	36.05%	₩ 42,013,626	₩ 30,650,967	₩ -	₩ 72,664,593
Hanwha Station Development Co., Ltd.	135,561,241	48.32%	65,496,967	-	14,860,452	80,357,419
Hanwha General Chemical Co., Ltd.(*)	3,324,971,100	36.05%	1,198,498,289	2,693,337	10,524,492	1,211,716,118
HANWHA INVESTMENT AND SECURITIES CO., LTD. (*)	1,154,874,738	17.56%	202,763,227	-	(27,898)	202,735,329
Hanwha Hotels and Resort Co., Ltd. (*)	593,096,253	48.78%	289,309,053	-	(10,797,306)	278,511,747
International Polymers Company	495,332,582	25.00%	123,833,146	1,795,924	(1,355)	125,627,715
Joint ventures:						
YEOCHUN NCC Co., Ltd.	1,407,170,380	50.00%	703,585,190	-	(19,907,360)	683,677,830
Gulf Advanced Cables Insulation Group	8,543,315	50.00%	4,271,658	-	(1,468,304)	2,803,354
Lakeshore East Retail LLC	16,455,358	50.00%	8,227,679	-	(4,665,004)	3,562,675
Parcel O LLC	43,489,441	50.00%	21,744,721	-	(1,187,273)	20,557,448

(*) Associates prepare their consolidated financial statements, in which their stated net assets refer to equity attributable to owners of the Group.

(7) Fair value of marketable investments in associates and joint ventures as of December 31, 2020 and December 31, 2019 are as follows:

In thousands of Korean won	December 31, 2020		December 31, 2019	
Investees	**Fair value**	**Book value**	**Fair value**	**Book value**
HANWHA INVESTMENT AND SECURITIES CO., LTD.	₩ 84,347,966	₩ 219,740,788	₩ 79,053,224	₩ 202,735,329

15. INVESTMENT PROPERTY:

(1) Investment properties as of December 31, 2020 and December 31, 2019 are as follows:

In thousands of Korean won	December 31, 2020			December 31, 2019		
	Acquisition cost	**Accumulated depreciation (*)**	**Book value**	**Acquisition cost**	**Accumulated depreciation (*)**	**Book value**
Land	₩ 85,286,851	₩ -	₩ 85,286,851	₩ 92,687,823	₩ -	₩ 92,687,823
Buildings	81,760,595	(25,741,754)	56,018,841	96,386,451	(33,348,239)	63,038,212
Structures	4,456,885	(3,575,757)	881,128	9,196,177	(6,879,176)	2,317,001
Total	₩171,504,331	₩ (29,317,511)	₩142,186,820	₩ 198,270,451	₩ (40,227,415)	₩ 158,043,036

(*) Includes accumulated impairment losses.

(2) Changes in investment properties for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won	2020			
	Land	**Buildings**	**Structures**	**Total**
Beginning balance	₩ 92,687,823	₩ 63,038,212	₩ 2,317,001	₩ 158,043,036
Transfer	522,008	33,774	-	555,782
Disposal	(7,478,839)	(4,664,648)	(1,202,264)	(13,345,751)
Depreciation	-	(2,171,356)	(197,142)	(2,368,498)
Changes in exchange rates	(444,141)	(217,141)	(36,467)	(697,749)
Ending balance	₩ 85,286,851	₩ 56,018,841	₩ 881,128	₩ 142,186,820

In thousands of Korean won	2019			
	Land	**Buildings**	**Structures**	**Total**
Beginning balance	₩ 127,833,305	₩ 60,314,855	₩ 2,187,405	₩ 190,335,565
Acquisition	-	5,399	-	5,399
Transfer	(1,535,651)	4,637,612	335,420	3,437,381
Disposal	(36,559,118)	-	-	(36,559,118)
Depreciation	-	(2,091,245)	(231,871)	(2,323,116)
Changes in exchange rates	2,949,287	171,591	26,047	3,146,925
Ending balance	₩ 92,687,823	₩ 63,038,212	₩ 2,317,001	₩ 158,043,036

(3) As of the end of December 31, 2020, the fair value of investment property considering appraisal and public land is ₩237,163 million. The fair value of investment properties has been assessed by an independent assessor.

(4) The rental income and rental cost from investment properties for the years ended December 31, 2020 are ₩6,921 million and ₩1,259 million (December 31, 2019: ₩ 6,826 million and ₩1,349 million), respectively.

16. PROPERTY, PLANT AND EQUIPMENT:

(1) Property, plant and equipment as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020			December 31, 2019		
	Acquisition cost	Accumulated depreciation(*)	Book value	Acquisition cost	Accumulated depreciation(*)	Book value
Land	₩ 1,691,974,886	₩ (388,514)	₩ 1,691,586,372	₩ 1,738,543,777	₩ -	₩ 1,738,543,777
Buildings	1,928,969,198	(731,011,258)	1,197,957,940	1,788,273,810	(664,276,285)	1,123,997,525
Structures	470,125,150	(229,945,590)	240,179,560	436,718,373	(214,618,659)	222,099,714
Machineries	6,744,762,095	(4,051,850,296)	2,692,911,799	6,358,573,871	(3,823,602,852)	2,534,971,019
Vehicles	46,886,246	(38,924,961)	7,961,285	53,588,737	(42,804,040)	10,784,697
Tools and equipments	400,544,984	(307,905,138)	92,639,846	388,405,535	(301,339,079)	87,066,456
Other property, plant and equipment	633,210	(384,330)	248,880	31,702,875	(13,337,970)	18,364,905
Construction in progress	508,874,846	(16,463,972)	492,410,874	862,226,704	(4,316,358)	857,910,346
Machinery in transit	588,862	-	588,862	294,549	-	294,549
Total	₩ 11,793,359,477	₩(5,376,874,059)	₩ 6,416,485,418	₩11,658,328,231	₩(5,064,295,243)	₩ 6,594,032,988

(*) Includes accumulated impairment losses and government grants.

(2) Changes in property, plant and equipment for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won	2020									
	Land	Buildings	Structures	Machineries	Vehicles	Tools and equipments	Others	Construction in progress	Machinery in transit	Total
Beginning balance	₩ 1,738,543,777	₩ 1,123,997,525	₩ 222,099,714	₩ 2,534,971,019	₩ 10,784,697	₩ 87,066,456	₩ 18,364,905	₩ 857,910,346	₩ 294,549	₩ 6,594,032,988
Acquisition	668,254	86,357,316	477,779	21,441,266	278,437	7,777,709	97,908	742,338,176	7,995,923	867,432,768
Changes in scope of consolidation	-	(412,694)	-	(9,655,376)	-	10,616	(18,258,079)	-	-	(28,315,533)
Transfer	51,938,462	336,434,667	38,613,633	613,751,924	992,174	36,320,988	576,845	(1,092,028,453)	(7,701,610)	(21,101,370)
Disposal	(10,704,942)	(1,152,038)	(467,803)	(29,603,321)	(107,071)	(1,999,865)	(78,583)	(597,772)	-	(44,711,395)
Depreciation	-	(69,810,689)	(17,150,914)	(392,737,097)	(3,930,433)	(33,365,785)	(311,750)	-	-	(517,306,668)
Impairment Loss(*)	(4,177,202)	(14,994,104)	(441,759)	(23,276,573)	(46,769)	(2,461,420)	-	(13,063,558)	-	(58,461,385)
Classified as held-for-sale current assets	(84,051,807)	(251,989,467)	(2,917,285)	(406,559)	-	-	(494,002)	-	-	(339,859,120)
Changes in exchange rates	(630,170)	(10,472,576)	(33,805)	(21,573,484)	(9,750)	(708,853)	351,636	(2,147,865)	-	(35,224,867)
Ending balance	₩ 1,691,586,372	₩ 1,197,957,940	₩ 240,179,560	₩ 2,692,911,799	₩ 7,961,285	₩ 92,639,846	₩ 248,880	₩ 492,410,874	₩ 588,862	₩ 6,416,485,418

(*) The Group recognized the unrecoverable amount as an impairment loss with regard to the photovoltaic and other operating units.

In thousands of Korean won	2019									
	Land	Buildings	Structures	Machineries	Vehicles	Tools and equipments	Others	Construction in progress	Machinery in transit	Total
Beginning balance	₩ 1,833,183,691	₩ 1,259,533,532	₩ 228,758,527	₩ 2,658,266,156	₩ 14,129,709	₩ 86,833,028	₩ 18,526,083	₩ 584,394,287	₩ 426,903	₩ 6,684,051,916
Acquisition	36,179,840	44,299,638	3,946,559	67,737,384	322,420	18,476,874	223,396	1,024,580,208	6,684,871	1,202,451,190
Changes in scope of consolidation	(1,231,343)	-	-	(50,286,430)	-	32	-	56,000	-	(51,461,741)
Transfer	14,191,313	114,211,650	33,518,823	535,569,943	428,023	27,140,021	-	(756,950,460)	(6,817,225)	(38,707,912)
Disposal	(297,479)	(2,490,345)	(1,825,333)	(28,665,188)	(123,307)	(5,309,727)	(62,138)	(189,823)	-	(38,963,340)
Depreciation	-	(65,814,598)	(16,456,435)	(368,112,660)	(3,988,684)	(30,685,941)	(517,373)	-	-	(485,575,691)
Impairment Loss(*)	-	(62,193,052)	(24,858,758)	(301,089,231)	(31,205)	(10,499,588)	-	(3,740,075)	-	(402,411,909)
Classified as held-for-sale current assets	(144,411,260)	(172,175,538)	(1,534,837)	(25,650)	-	-	(450,000)	-	-	(318,597,285)
Changes in exchange rates	929,015	8,626,238	551,168	21,576,695	47,741	1,111,757	644,937	9,760,209	-	43,247,760
Ending balance	₩ 1,738,543,777	₩1,123,997,525	₩ 222,099,714	₩2,534,971,019	₩10,784,697	₩ 87,066,456	₩18,364,905	₩857,910,346	₩ 294,549	₩6,594,032,988

(*) The Group recognized the unrecoverable amount as an impairment loss with regard to the polysilicon, Ingot and other operating segments.

(3) Capital borrowing costs are ₩6,939 million and ₩14,504 million for the years ended December 31, 2020 and 2019, respectively, and the weighted-average capitalization rates of interest for the years ended December 31, 2020 and 2019, are 2.25% to 3.27% and 2.50% to 4.37%, respectively.

(4) Line items which include depreciation expenses of property, plant and equipment for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won		2020		2019
Manufacturing cost and others	₩	446,447,413	₩	390,556,967
Selling and administrative expenses(*)		70,373,138		59,889,799
Profit(loss) from discontinued operations		486,117		35,128,925
Total	₩	517,306,668	₩	485,575,691

(*) Includes amounts allocated to ordinary research and development expense.

(5) Property, plant and equipment are provided as collateral for borrowings as of December 31, 2020 (see Note 39).

17. INTANGIBLE ASSETS:

(1) Intangible assets as of December 31, 2020 and 2019, are as follows:

In thousands of Korean won	December 31, 2020			December 31, 2019		
	Acquisition cost	Accumulated depreciation(*)	Book value	Acquisition cost	Accumulated depreciation(*)	Book value
Goodwill	₩341,562,854	₩ (48,483,104)	₩ 293,079,750	₩ 321,158,474	₩ (48,041,690)	₩ 273,116,784
Industrial property rights	43,481,897	(30,416,283)	13,065,614	40,693,602	(27,945,109)	12,748,493
Development costs	91,020,432	(57,828,484)	33,191,948	91,065,921	(44,496,318)	46,569,603
Membership	37,799,163	(1,389,248)	36,409,915	47,026,363	(2,013,337)	45,013,026
Other intangible assets	101,144,269	(63,040,627)	38,103,642	119,472,378	(75,749,797)	43,722,581
Total	₩615,008,615	₩ (201,157,746)	₩ 413,850,869	₩ 619,416,738	₩ (198,246,251)	₩ 421,170,487

(*) Includes accumulated impairment losses.

(2) Changes in intangible assets for the years ended December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	2020					
	Goodwill	Industrial property rights	Development costs	Membership	Other intangible assets	Total
Beginning balance	₩ 273,116,784	₩ 12,748,493	₩ 46,569,603	₩ 45,013,026	₩ 43,722,581	₩ 421,170,487
Changes in scope of consolidation	33,734,605	-	(136,749)	-	-	33,597,856
Acquisition	-	1,063,414	137,513	1,234,765	4,800,441	7,236,133
Transfer	-	825,398	-	1,743,313	13,221,258	15,789,969
Disposal	-	-	(1,767)	(11,464,612)	(8,848,384)	(20,314,763)
Amortization	-	(1,690,341)	(13,380,380)	(116,725)	(15,202,573)	(30,390,019)
Impairment Loss	-	(197,062)	-	-	531,140	334,078
Changes in exchange rates	2,305,540	315,712	3,728	148	(120,821)	2,504,307
Others(*)	(16,077,179)	-	-	-	-	(16,077,179)
Ending balance	₩ 293,079,750	₩ 13,065,614	₩ 33,191,948	₩ 36,409,915	₩ 38,103,642	₩ 413,850,869

(*) The goodwill was adjusted for the year ended December 31, 2020 through the subsequent measurement of net assets in subsidiaries acquired for the year ended December 31, 2019.

In thousands of Korean won	2019 Goodwill	Industrial property rights	Land-use rights	Development costs	Membership	Other intangible assets	Total
Beginning balance	₩262,806,671	₩ 12,074,453	₩ 38,673,505	₩ 61,213,549	₩ 53,306,136	₩ 51,309,171	₩479,383,485
Effect of changes in accounting policies(*1)	-	-	(38,673,505)	-	-	-	(38,673,505)
Changes in scope of consolidation	11,267,499	-	-	-	-	20,840	11,288,339
Acquisition	18,207,836	836,044	-	378,232	940,629	5,475,724	25,838,465
Transfer	-	1,420,370	-	(1,406,786)	(329,810)	24,891,464	24,575,238
Disposal	-	-	-	(163,927)	(8,822,950)	(48,396)	(9,035,273)
Amortization	-	(1,535,772)	-	(13,444,805)	(88,596)	(17,427,703)	(32,496,876)
Impairment Loss(*2)	(12,660,962)	(199,961)	-	-	-	(20,971,355)	(33,832,278)
Changes in exchange rates	4,127,407	153,359	-	(6,660)	7,617	472,836	4,754,559
Others(*3)	(10,631,667)	-	-	-	-	-	(10,631,667)
Ending balance	₩273,116,784	₩ 12,748,493	₩ -	₩ 46,569,603	₩ 45,013,026	₩ 43,722,581	₩421,170,487

(*1) It has been reclassified as a right-of-use assets due to the introduction of IFRS 1116.
(*2) The Group has recognized impairment losses that is deemed impossible to recover from the asset, in the processing units.
(*3) The Group adjusted goodwill through follow-up measurement of the net assets of the incorporated entity in 2018, during the year ended December 31, 2019.

(3) Changes in emission rights for the years ended December 31, 2020 are as follows:

In thousands of Korean won, quantity in tCO2-eq

	Amount of 2018		Amount of 2019		Amount of 2020	
	Quantity	Amount	Quantity	Amount	Quantity	Amount
Free allocation	2,613,010	-	2,622,983	-	2,458,011	-
Business combination	44,732	-	159,517	-	159,516	-
Purchases	4,381	99,548	-	-	-	-
Disposal	-	-	(133,000)	-	-	-
Other	-	-	-	-	-	4,341,757
Ending balance	2,662,123	99,548	2,649,500	-	2,617,527	4,341,757

(5) Intangible assets are provided as collateral for borrowings as of December 31, 2020 (see Note 39).

(6) Goodwill Impairment:

a. Goodwill is monitored by the management at the operating segment level (cash-generating units or group of cash- generating units). The following is a summary of goodwill allocation of each operating segment:

In thousands Korean won	December 31, 2020	December 31, 2019
Hanwha Q CELLS Co., Ltd.	₩ 234,578,822	₩ 210,974,495
Hanwha AZDEL, Inc.	23,310,322	24,805,782
TDI Unit	18,510,215	18,510,215
Others	16,680,391	18,826,292
Total	₩ 293,079,750	₩ 273,116,784

b. The recoverable amounts of all cash generating units (groups) have been determined based on value-in-use calculations which are estimated on financial budgets approved by management covering a five-year period or net fair value which is the price in an active market less disposal cost. All assumptions related to the calculations are as follows:

	Hanwha Q CELLS Co., Ltd.	Hanwha AZDEL, Inc.	TDI Unit
Profit to turnover ratio (*1)	5.30%	12.70%	5.20%
Growth of Sales Ratio (*2)	21.40%	8.00%	6.20%
Discount Rate(*3)	9.80%	11.20%	11.00%

(*1) The average profit to turnover ratio in order to predict the cash flow in the future
(*2) The average growth of annual sales in order to predict the cash flow in the future
(*3) The discount rate reflecting specific risks associated with the CGU and country.

18. LEASES:

(1) Changes in right-of-use assets for the year ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won

	2020							
	Land	Buildings	Structures	Machineries	Vehicles	Tools and equipments	Others	Total
Beginning balance	₩39,476,091	₩160,069,040	₩ 11,271,366	₩ 25,258,654	₩ 5,214,001	₩ 153,353	₩ 5,547,283	₩246,989,788
Increases	1,509,209	201,494,794	1,395,789	-	5,747,380	15,315	1,121,399	211,283,886
Decreases	(38,522)	(92,988,863)	(637,840)	(121,962)	(853,422)	(15,979)	-	(94,656,588)
Depreciation	(1,552,459)	(30,106,525)	(3,257,735)	(3,532,886)	(4,179,833)	(41,272)	(2,605,572)	(45,276,282)
Impairment	-	(7,031,520)	-	-	(1,550)	-	-	(7,033,070)
Changes in exchange rates	186,407	(281,277)	(2,590)	(1,236,502)	(196,645)	(5,961)	(56,788)	(1,593,356)
Ending balance	₩39,580,726	₩231,155,649	₩ 8,768,990	₩ 20,367,304	₩ 5,729,931	₩ 105,456	₩ 4,006,322	₩309,714,378

In thousands of Korean won

	2019							
	Land	Buildings	Structures	Machineries	Vehicles	Tools and equipments	Others	Total
Beginning balance	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -
Effect of changes in accounting policies	43,416,351	141,583,766	10,249,346	27,745,750	6,608,159	113,133	3,883,884	233,600,389
Changes in scope of consolidation	(1,478,481)	-	-	-	-	-	-	(1,478,481)
Increases	821,771	70,951,548	3,806,077	-	2,428,557	76,736	4,028,957	82,113,646
Decreases	(2,558,502)	(581,738)	-	-	(39,325)	-	-	(3,179,565)
Depreciation	(1,508,664)	(26,709,506)	(2,784,772)	(3,495,239)	(3,817,521)	(40,294)	(2,430,776)	(40,786,772)
Impairment	-	(25,485,054)	-	-	-	-	-	(25,485,054)
Changes in exchange rates	783,616	310,024	715	1,008,143	34,131	3,778	65,218	2,205,625
Ending balance	₩39,476,091	₩160,069,040	₩ 11,271,366	₩ 25,258,654	₩ 5,214,001	₩ 153,353	₩ 5,547,283	₩246,989,788

(2) Profit and expenses recognized for the year ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won

	2020	2019
Depreciation of right-of-use assets	₩ 45,209,024	₩ 40,786,772
Interest expenses of lease liabilities	15,906,915	8,413,963
Expenses of short-term leases	2,487,773	3,898,477
Expenses of leases for which the underlying asset is of low value	2,032,321	1,357,574
Variable lease expenses not included in the measurement of lease liabilities	9,659,455	10,439,744
Transfer of lease expenses related with discontinued operations	109,639	-
Profit from sub-lease contract	843,213	334,153

Total cash outflows for lease contract for the year ended December 31, 2020 are ₩74,973 million (2019: ₩45,334 million).

(3) Lease liabilities as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won

	December 31, 2020	December 31, 2019
Within 1 year	₩ 59,377,255	₩ 43,414,370
Within 5 years	196,638,642	155,393,259
After 5 years	190,655,987	69,730,025
Subtotal	446,671,884	268,537,654
Less: present value discount	(90,841,695)	(20,234,445)
Present value of lease liabilities	₩ 355,830,189	₩ 248,303,209

(4) Current and non-current lease liabilities as of December 31, 2019 are as follows:

In thousands of Korean won

	December 31, 2020		December 31, 2019	
Current lease liabilities	₩	55,258,979	₩	40,780,222
Non-current lease liabilities		300,571,210		207,522,987
Total	₩	355,830,189	₩	248,303,209

19. ASSETS CLASSIFIED AS HELD FOR SALE:

Assets classified as held for sale as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won

	December 31, 2020		December 31, 2019	
Land	₩	80,661,667	₩	132,280,744
Buildings		251,583,357		164,633,593
Machineries and others		3,265,110		819,616
Total	₩	335,510,134	₩	297,733,953

20. TRADE PAYABLES AND OTHER PAYABLES:

Trade payables and other payables as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020				December 31, 2019			
	Current		Non-current		Current		Non-current	
Trade payables	₩	1,202,096,499	₩	-	₩	1,207,249,374	₩	-
Other payables		354,295,281		14,511		365,785,851		4,998
Total	₩	1,556,391,780	₩	14,511	₩	1,573,035,225	₩	4,998

21. BORROWINGS:

(1) Borrowings as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020		December 31, 2019	
	Current	Non-current	Current	Non-current
Borrowings from financial institutions	₩ 2,576,101,716	₩ 1,164,824,115	₩ 2,675,257,473	₩ 1,654,012,465
Debentures	395,823,788	1,551,823,907	709,256,370	1,330,046,920
Total	₩2,971,925,504	₩ 2,716,648,022	₩3,384,513,843	₩ 2,984,059,385

(2) Borrowings from financial institutions as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	Financial Institutions	December 31, 2020	December 31, 2019
Borrowings in local currency	Korea Development Bank ("KDB") and others	₩ 1,832,311,770	₩ 2,099,239,349
Borrowings in foreign currency	Korea Exim Bank and others	1,895,935,189	2,217,848,627
Loans on trade receivables collateral(*)	Woori Bank and others	12,678,872	12,181,962
		3,740,925,831	4,329,269,938
Less: Reclassification of current portion		(2,576,101,716)	(2,675,257,473)
Total		₩ 1,164,824,115	₩ 1,654,012,465

(*) The Group discounted trade receivables through factoring agreements with banks, which were accounted for as secured borrowings. Under the terms of the agreements, the Group is contractually obligated to make payments in the event of default by customers (see Note 7).

(3) Debentures as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won

Issuing Company	Classification	Maturity date	Interest rate (%)	December 31, 2020	December 31, 2019
Hanwha Galleria Co., Ltd.	67th privately placed bonds	-	-	₩ -	₩ 20,000,000
Hanwha Galleria Co., Ltd	68th privately placed bonds	2021.02.26	3.08	30,000,000	30,000,000
Hanwha Galleria Co., Ltd.	FRN	-	-	-	34,734,000
Hanwha Galleria Co., Ltd.	FRN	2021.06.20	3ML+1.05	32,640,000	34,734,000
Hanwha Galleria Co., Ltd.	FRN	2022.07.19	3ML+0.95	32,640,000	34,734,000
Hanwha Galleria Timeworld Co., Ltd.(*1)	23rd public bond with warrant	2021.06.22	-	50,000,000	50,000,000
Hanwha Solutions Corporation	243-2nd public bonds	-	-	-	98,000,000
Hanwha Solutions Corporation	245-2nd public bonds	-	-	-	50,000,000
Hanwha Solutions Corporation	246-2nd public bonds	2021.02.24	3.09	50,000,000	50,000,000
Hanwha Solutions Corporation	249th public bonds	-	-	-	100,000,000
Hanwha Solutions Corporation	250th public bonds	-	-	-	100,000,000
Hanwha Solutions Corporation	251th public bonds	-	-	-	80,000,000
Hanwha Solutions Corporation	252th FRN	2021.07.23	3ML+0.98	32,640,000	34,734,000
Hanwha Solutions Corporation	253th FRN	2021.10.04	3ML+1.15	54,400,000	57,890,000
Hanwha Solutions Corporation	254-1st public bonds	2021.11.29	2.31	60,000,000	60,000,000
Hanwha Solutions Corporation	254-2nd public bonds	2023.11.29	2.50	90,000,000	90,000,000
Hanwha Solutions Corporation	255th public bonds	2024.01.31	2.31	150,000,000	150,000,000
Hanwha Solutions Corporation	256th FRN	2022.04.04	3ML+1.15	217,600,000	231,560,000
Hanwha Solutions Corporation	257th FRN	2022.10.11	3ML+0.95	54,400,000	57,890,000
Hanwha Solutions Corporation	258th FRN	2022.10.11	3ML+0.95	54,400,000	57,890,000
Hanwha Solutions Corporation	259th FRN	2022.10.11	3ML+1.00	54,400,000	57,890,000
Hanwha Solutions Corporation	260-1st public bonds	2022.10.24	1.79	110,000,000	110,000,000
Hanwha Solutions Corporation	260-2nd public bonds	2024.10.24	1.98	80,000,000	80,000,000
Hanwha Solutions Corporation	260-3rd public bonds	2026.10.24	2.28	60,000,000	60,000,000
Hanwha Solutions Corporation(*2)	261st privately placed bonds(formerly, 59-2nd privately placed bonds)	-	-	-	20,000,000
Hanwha Solutions Corporation(*2)	262st privately placed bonds(formerly, 60th privately placed bonds)	-	-	-	20,000,000
Hanwha Solutions Corporation(*2)	263st privately placed bonds(formerly, 61st privately placed bonds)	-	-	-	10,000,000
Hanwha Solutions Corporation(*2)	264st privately placed bonds(formerly, 1st privately placed bonds)	-	-	-	40,000,000
Hanwha Solutions Corporation(*2)	265st privately placed bonds(formerly, 5th privately placed bonds)	-	-	-	60,000,000
Hanwha Solutions Corporation(*2)	266st privately placed bonds(formerly, 8th privately placed bonds)	-	-	-	30,000,000
Hanwha Solutions Corporation(*2)	267th FRN	2021.02.16	3ML+1.00	32,640,000	34,734,000
Hanwha Solutions Corporation(*2)	268th FRN (formerly, 9th FRN)	2021.06.29	3ML+1.96	32,640,000	34,734,000
Hanwha Solutions Corporation	269-1st public bonds	2023.01.20	1.83	140,000,000	-
Hanwha Solutions Corporation	269-2nd public bonds	2025.01.22	2.04	140,000,000	-
Hanwha Solutions Corporation	270th public bonds	2023.04.21	2.38	210,000,000	-
Hanwha Solutions Corporation	271st privately placed bonds	2023.06.30	2.63	40,000,000	-
Hanwha Q CELLS Co., Ltd.	FRN	2022.01.10	3ML+1.65	43,454,622	46,172,960
Hanwha Q CELLS Co., Ltd.	FRN	2021.10.08	3ML+1.50	21,718,625	23,053,396
Hanwha Q CELLS Investment Co., Ltd.	1st privately placed bonds	2023.06.16	1.70	80,001,485	-
Subtotal				1,953,574,732	2,048,750,356
Add : Call premium				755,150	755,150
Less : Discount on debentures				(6,682,187)	(10,202,216)
Less : Reclassification of current portion				(395,823,788)	(709,256,370)
Total				₩ 1,551,823,907	₩ 1,330,046,920

(*1) Bond with warrant as of December 31, 2020, is as follows:

	Details
Issuing Company	Hanwha Galleria Timeworld Co., Ltd.
Face value	₩50,000,000 thousand
Book value	₩49,508,018 thousand
Call premium(rate)	Upon issuance: ₩755,150 thousand (1.5103%)
Coupon rate	0.00%
Rate of return at maturity	0.50%
Terms	₩39,000 par value convertible into one share
Exercise period	The bonds can be convertible to shares from one month after issuance (July 22, 2018) until one month before maturity (May 22, 2021).

(*2) These are the details of Hanwha Q CELLS & Advanced Materials Corporation's bonds as of December 31, 2019 and thery were acquired by Hanwha Solutions Corporation for the year ended December 31, 2020.

22. OTHER FINANCIAL LIABILITIES:

Other financial liabilities as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020		December 31, 2019	
	Current	Non-current	Current	Non-current
Derivative liabilities(*1)	₩ 18,728,931	₩ 54,435,922	₩ 2,983,532	₩ 10,743,533
Lease liabilities	55,258,979	300,571,210	40,780,222	207,522,987
Deposits	13,714,446	1,624,377	12,747,641	542,752
Accrued expenses	134,307,485	23,360,662	135,807,035	52,101
Financial guarantee liabilities(*2)	147,668	-	13,243,638	-
Total	₩ 222,157,509	₩ 379,992,171	₩ 205,562,068	₩ 218,861,373

(*1) The Group has derivatives for hedging purposes.(see Note 10.(2))
(*2) The Group provides payment guarantees to related parties as of December 31, 2020 (see Note 40).

23. OTHER LIABILITIES:

(1) Other liabilities as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020		December 31, 2019	
	Current	Non-current	Current	Non-current
Withholdings	₩ 11,618,007	₩ -	₩ 13,354,940	₩ -
Value-added tax payables	23,889,955	-	18,152,088	-
Refund liability	766,998	-	839,660	-
Contract liability	266,301,080	6,381,505	527,380,071	7,544,551
Total	₩ 302,576,040	₩ 6,381,505	₩ 559,726,759	₩ 7,544,551

(2) Contract asset and contract liability as of December 31, 2020 and December 31, 2019, are as follows:

1) Contract assets and liabilities regarding from contracts with customers as of December 31, 2020 and December 31, 2019, are as follows;

In thousands of Korean won	December 31, 2020	December 31, 2019
Refund asset		
Right to retrieve refunded inventories	₩ 54,727	₩ 76,365
Total	₩ 54,727	₩ 76,365
Refund liability		
Refund liability	₩ 766,998	₩ 839,660
Total	₩ 766,998	₩ 839,660
Contract asset		
Amount due from customers for contract work	16,736,006	38,512,027
Total	₩ 16,736,006	₩ 38,512,027
Prepaid construction costs		
Prepaid construction costs	₩ 2,050,264	₩ 53,119,535
Total	₩ 2,050,264	₩ 53,119,535
Contract liability		
Customer loyalty	₩ 21,657,888	₩ 26,142,685
Amount due to customers for contract work	23,725,692	38,689,834
Advances from customers	208,489,179	444,350,627
Unearned revenue	18,809,826	25,741,476
Total	₩ 272,682,585	₩ 534,924,622

2) Details of effects on current and future profit or loss and changes in contract assets and liabilities of changes in estimated gross contract revenue and costs of in-progress construction contracts as of December 31, 2020, are as follows:

In thousands of Korean won	Changes in estimated gross contract revenue	Changes in estimated gross contract costs	Effects on current profit or loss	Effects on future profit or loss	Changes in contract assets	Changes in contract liabilities
Domestic construction	₩ (564,350)	₩ (902,917)	₩ 761,577	₩ (423,010)	₩ 50,890	₩ 710,687
Overseas construction	(350,570)	12,961,579	(350,570)	(12,961,579)	132,059	(482,629)
Total	₩ (914,920)	₩ 12,058,662	₩ 411,007	₩ (13,384,589)	₩ 182,949	₩ 228,058

24. NET DEFINED BENEFIT LIABILITIES:

(1) Net defined benefit liabilities as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020		December 31, 2019	
Present value of defined benefit obligation	₩	583,397,134	₩	552,109,259
Fair value of plan assets		(136,831,995)		(140,314,752)
Net defined benefit liabilities	₩	446,565,139	₩	411,794,507

(2) Changes in the present value of defined benefit obligation for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won	2020		2019	
Beginning balance	₩	552,109,259	₩	520,682,885
Current service cost		55,174,825		51,926,289
Interest expense		16,272,048		16,727,666
Remeasurements(*)		(2,797,601)		4,081,804
Benefits paid		(34,715,665)		(44,418,564)
Changes in scope of consolidation		-		2,716,343
Changes in exchange rates and others		(2,645,732)		392,836
Ending balance	₩	583,397,134	₩	552,109,259

(*) Remeasurement of defined benefit obligation is as follows:

In thousands of Korean won	2020		2019	
Actuarial losses due to empirical adjustments	₩	(2,332,348)	₩	11,614,312
Actuarial losses due to changes in demographic assumptions		-		358,652
Actuarial losses (gains) due to changes in financial assumptions		(465,253)		(7,891,160)
Total	₩	(2,797,601)	₩	4,081,804

(3) Changes in fair value of plan assets for the years ended December 31, 2020 and December 31, 2019 are as follows:

In thousands of Korean won	2020		2019	
Beginning balance	₩	140,314,752	₩	148,981,834
Interest income		4,773,921		5,812,414
Remeasurements(*)		(1,222,972)		(1,802,220)
Contributions by the employer		1,547,092		447,282
Benefits paid		(7,281,979)		(12,129,716)
Changes in scope of consolidation		-		(283,396)
Changes in exchange rates and others		(1,298,819)		(711,446)
Ending balance	₩	136,831,995	₩	140,314,752

(*) Return on plan assets (excluding amounts included in interest income).

(4) Plan assets as of December 31, 2020 and December 31, 2019 are as follows:

In thousands won	December 31, 2020		December 31, 2019	
Equity instruments	₩	1,359,704	₩	3,923,254
Debt instruments		11,829,428		9,064,069
Principal guaranteed financial instruments		122,485,465		125,965,149
Others		1,157,398		1,362,280
Total	₩	136,831,995	₩	140,314,752

(5) Expenses recognized in the consolidated statements of comprehensive income for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won		2020		2019
Current service cost	₩	55,174,825	₩	51,926,289
Net interest cost		11,498,127		10,915,252
Total(*)	₩	66,672,952	₩	62,841,541

(*) Retirement benefits of ₩629 million and ₩346 million were transferred to construction in progress under property, plant and equipment for the years ended December 31, 2020 and 2019, respectively.

(6) Key actuarial assumptions for the years ended December 31, 2020 and 2019 are as follows:

Category	2020	2019
Discount rate	2.91% ~ 3.49%	2.94% ~ 3.40%
Expected salary growth rate	3.36% ~ 4.65%	3.36% ~ 4.69%

(7) Sensitivity analysis of changes in key actuarial assumptions as of December 31, 2020 is as follows:

Category	Change in assumption	Increase in assumption	Decrease in assumption
Discount rate	1.00%	8.03% Decrease	9.23% Increase
Expected salary growth rate	1.00%	9.24% Increase	8.18% Decrease

25. PROVISIONS:

(1) Provisions as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020		December 31, 2019	
	Current	Non-current	Current	Non-current
Provision for construction warranties	₩ -	₩ 1,523,610	₩ -	₩ 1,491,543
Provision for restoration	-	2,108,400	-	2,019,841
Provision for product warranties	36,239,360	99,990,485	36,869,859	87,163,448
Provision for litigation	2,444,000	-	-	-
Emissions liabilities(*)	-	-	1,710,883	-
Other provision	12,375,902	3,235,144	22,274,270	-
Total	₩ 51,059,262	₩106,857,639	₩ 60,855,012	₩ 90,674,832

(*) The amount of greenhouse gas estimated to have been discharged for the year ended December 31, 2020, is 2,368,358 tCO2 (December 31, 2019: 2,473,510 tCO2.)

(2) Changes in provisions for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won	2020						
	Provision for construction warranties	Provision for restoration	Provision for product warranties	Provision for litigation	Emissions liabilities	Other provisions	Total
Beginning balance	₩ 1,491,543	₩ 2,019,841	₩ 124,033,307	₩ -	₩ 1,710,883	₩ 22,274,270	₩ 151,529,844
Changes in scope of consolidation	-	(977,551)	-	-	-	-	(977,551)
Established	233,792	1,047,347	17,661,013	2,444,000	(9,763,340)	13,940,967	25,563,779
Used	(76,152)	-	(6,594,450)	-	-	(16,119,100)	(22,789,702)
Reversal	(114,134)	-	-	-	-	(7,673,351)	(7,787,485)
Transfer	-	-	-	-	8,052,457	3,188,260	11,240,717
Changes in exchange rates and others	(11,439)	18,763	1,129,975	-	-	-	1,137,299
Ending balance	₩ 1,523,610	₩ 2,108,400	₩ 136,229,845	₩ 2,444,000	₩ -	₩ 15,611,046	₩ 157,916,901
Current	₩ -	₩ -	₩ 36,239,360	₩ 2,444,000	₩ -	₩ 12,375,902	₩ 51,059,262
Non-current	1,523,610	2,108,400	99,990,485	-	-	3,235,144	106,857,639

In thousands of Korean won	2019						
	Provision for construction warranties	Provision for restoration	Provision for product warranties	Provision for litigation	Emissions liabilities	Other provisions	Total
Beginning balance	₩ 2,841,455	₩ 2,270,975	₩ 70,365,658	₩ 35,632,036	₩ 4,477,348	₩ 7,671	₩ 115,595,143
Changes in scope of consolidation	175,265	-	45,182	-	-	(220,447)	-
Established	154,765	33,299	56,921,642	-	621,520	22,469,020	80,200,246
Used	(2,167,102)	(171,691)	(4,236,151)	(26,759,161)	-	(17,500)	(33,351,605)
Reversal	(4,182)	-	-	(9,624,980)	(3,387,985)	(9,655)	(13,026,802)
Transfer	407,168	(147,235)	(52,066)	-	-	45,181	253,048
Changes in exchange rates and others	84,174	34,493	989,042	752,105	-	-	1,859,814
Ending balance	₩ 1,491,543	₩ 2,019,841	₩ 124,033,307	₩ -	₩ 1,710,883	₩ 22,274,270	₩ 151,529,844
Current	₩ -	₩ -	₩ 36,869,859	₩ -	₩ 1,710,883	₩ 22,274,270	₩ 60,855,012
Non-current	1,491,543	2,019,841	87,163,448	-	-	-	90,674,832

26. CAPITAL STOCK AND SURPLUS:

(1) Capital stock as of December 31, 2020 and December 31, 2019, is as follows:

In thousands of Korean won, except for share data	December 31, 2020		December 31, 2019	
	Common shares	**Preferred shares(*)**	**Common shares**	**Preferred shares(*)**
Total number of authorized shares	200,000,000	100,000,000	200,000,000	100,000,000
Par value per share	₩ 5,000	₩ 5,000	₩ 5,000	₩ 5,000
Number of shares issued	159,864,497	1,123,737	161,479,290	1,123,737
Capital stock	₩ 815,551,970	₩ 5,618,685	₩ 815,551,970	₩ 5,618,685

(*) Non-cumulative preferred shares are eligible to receive cash dividends equal to cash dividends for common shares plus an additional 1%.

(2) The fluctuations in the number of outstanding shares for the years ended December 31, 2020 and 2019 are as follows:

For share data	2020		2019	
	Common share	**Preferred share**	**Common share**	**Preferred share**
Beginning	161,479,290	1,123,737	163,110,394	1,123,737
Retirement of treasury share	(1,614,793)	-	(1,631,104)	-
Ending	159,864,497	1,123,737	161,479,290	1,123,737

(3) Capital surplus as of December 31, 2020 and December 31, 2019, is as follows:

In thousands of Korean won	**December 31, 2020**	**December 31, 2019**
Paid-in capital in excess of par value	₩ 486,753,224	₩ 486,753,224
Revaluation reserve	86,071,253	86,071,253
Gain from merger	75,670,859	75,670,859
Other capital surplus	149,974,815	156,008,359
Total	₩ 798,470,151	₩ 804,503,695

27. CAPITAL ADJUSTMENTS:

Consolidated capital adjustments as of December 31, 2020 and December 31, 2019, are composed of other capital adjustments recognized during the prior acquisition of subsidiaries.

28. ACCUMULATED OTHER COMPREHENSIVE LOSS:

Accumulated other comprehensive loss as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	**December 31, 2020**	**December 31, 2019**
Gain on valuation of FVTOCI - financial assets(debt instrument)	₩ 30,398	₩ 31,824
Loss on valuation of FVTOCI - financial assets(equity instrument)	(58,598,834)	(61,396,602)
Share of other comprehensive income of associates and joint ventures	65,675,705	103,454,416
Gain (Loss) on valuation of derivatives	(399,546)	(176,863)
Currency translation adjustments	(116,717,319)	(112,435,547)
Total	₩ (110,009,596)	₩ (70,522,772)

29. RETAINED EARNINGS:

Retained earnings as of December 31, 2020 and December 31, 2019, are as follows:

In thousands of Korean won	December 31, 2020		December 31, 2019	
Legal reserves	₩	68,399,058	₩	65,141,379
Voluntary reserves		3,035,951,218		3,175,705,764
Revaluation surplus		697,368,585		696,566,984
Unappropriated retained earnings		628,070,318		238,521,250
Total	₩	4,429,789,179	₩	4,175,935,377

30. DIVIDENDS:

(1) During the year ended December 31, 2020, dividends on the Group’s common shares of ₩32,296 million (₩200 per share) were paid out and dividends on preferred shares of ₩281 million (₩250 per share) were paid out for the year ended December 31, 2019.

(2) During the year ended December 31, 2019, dividends on the Group’s common shares of ₩32,622 million (₩200 per share) were paid out and dividends on preferred shares of ₩281 million (₩250 per share) were paid out for the year ended December 31, 2018.

(3) No dividends on common shares and preferred shares for the year ended December 31, 2020 are to be proposed at the regular general shareholders' meeting scheduled for March 24, 2021. These consolidated financial statements do not reflect these dividends payable.

31. REVENUES:

Revenue for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won	2020		2019	
Sales - finished goods	₩	6,331,532,220	₩	6,305,540,005
Sales - merchandise		2,140,284,784		2,603,426,267
Sales - construction		199,846,057		296,118,397
Others		523,345,067		252,305,328
Total	₩	9,195,008,128	₩	9,457,389,997

32. COST OF GOODS SOLD:

Cost of goods sold for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won	2020		2019	
Cost of goods sold - finished goods	₩	5,949,490,840	₩	5,879,688,636
Cost of goods sold - merchandise		807,695,202		1,329,853,044
Cost of goods sold - construction		110,060,731		210,933,555
Others		401,868,726		186,800,532
Total	₩	7,269,115,499	₩	7,607,275,767

33. SELLING AND ADMINISTRATIVE EXPENSES:

Selling and administrative expenses for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won		2020		2019
Salaries	₩	330,974,678	₩	277,082,611
Retirement benefits		26,418,895		26,738,371
Other long-term employee benefits		3,746,022		8,123,453
Voluntary resignation benefits		1,204,832		1,203,969
Welfare expenses		64,066,359		60,569,634
Rental expenses		13,927,183		15,626,398
Lease expenses		6,513,221		8,224,206
Reception expenses		7,731,340		10,523,037
Depreciation on investment property		1,574,048		1,659,831
Depreciation on property, plant and equipment		70,373,138		59,889,799
Amortization of intangible assets		9,453,775		13,209,123
Depreciation on right-of-use assets		37,008,889		31,723,769
Taxes and dues		30,728,428		46,669,937
Advertising expenses		40,883,321		51,967,706
Bad debt expenses		3,527,756		31,253,507
Travel expenses		7,129,780		18,210,859
Travel expenses for overseas branch		89,866		560,068
Conference expenses		1,646,619		1,867,585
Communication charges		5,235,900		5,165,611
Supplies expenses		7,236,084		7,629,710
Publication expenses		1,315,564		1,211,592
Outsourcing expenses		77,243,671		107,942,906
Freight expenses		154,358,879		140,028,861
Warehousing charges		48,789,896		46,222,299
Sample and packing expenses		7,508,439		8,348,535
Utility expenses		16,025,087		14,470,567
Sales commissions		14,019,546		13,583,620
Export selling expenses		60,185,259		52,180,820
Repair expenses		10,059,194		10,942,177
Insurance expenses		15,025,044		14,803,343
Commissions		116,330,695		139,024,717
Research expenses		72,617,987		51,827,818
Ordinary development expenses		31,741,870		34,260,551
Market development expenses		3,704,482		4,982,485
Maintenance expenses for overseas branch		-		1,592
Product warranties expenses		18,266,694		57,432,302
Training expenses		3,445,850		7,035,641
Product handling commission		901,791		1,054,842
Miscellaneous expenses		6,216,067		2,252,878
Others		4,483,362		5,456,180
Total	₩	1,331,709,511	₩	1,390,962,910

34. NATURE OF EXPENSES:

Details of nature of expenses for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won		2020		2019
Changes in finished goods, half-finished goods and work in process	₩	(191,927,490)	₩	41,087,273
Sales merchandise		807,695,202		1,329,853,044
Use of raw materials and supplies		4,979,198,645		4,783,382,773
Employee benefits (*1)		940,210,321		811,543,735
Welfare expenses		153,602,200		137,914,104
Rental expenses		25,840,627		22,376,023
Lease expenses		13,427,987		13,536,584
Depreciations of investment properties		2,368,498		2,323,116
Depreciations of property, plant and equipment		516,820,551		450,446,766
Amortization of intangible assets		30,390,019		32,406,182
Depreciations of right-of-use assets		45,209,024		40,786,772
Freight and warehousing expenses		208,878,942		195,105,599
Utility expenses		150,061,077		148,748,799
Outsourcing expenses		428,046,285		481,189,929
Export selling expenses		60,821,433		52,343,179
Taxes and dues		40,889,106		57,283,926
Others		389,292,583		397,910,873
Total (*2)	₩	8,600,825,010	₩	8,998,238,677

(*1) Includes salaries and wages, and retirement benefits.
(*2) The total amount is the sum of cost of sales and selling and administrative expenses in the consolidated financial statements of comprehensive income.

35. OTHER NON-OPERATING INCOME AND EXPENSES:

(1) Other non-operating income for the years ended December 31, 2020 and 2019, is as follows:

In thousands of Korean won		2020		2019
Gain on foreign currency transactions	₩	171,361,575	₩	155,852,217
Gain on foreign currency translation		216,226,755		117,593,722
Gain on valuation of derivatives		18,329,923		18,572,128
Gain on disposal of investments in associates and joint ventures		8,871,894		9,441,437
Gain on transactions of derivatives		35,521,382		45,351,707
Gain on valuation of FVTPL - financial assets		58,296		432,035
Gain on disposal of FVTPL - financial assets		61,832		9,094
Gain on disposal of investment property		2,698,837		2,227,266
Gain on disposal of property, plant and equipment		3,392,554		5,819,151
Reversal of impairment losses on property, plant and equipment		1,500,229		-
Gain on disposal of intangible assets		1,128,895		469,743
Reversal of impairment losses on intangible assets		672,857		-
Gain on disposal of assets held-for-sale		54,201,706		490,661
Reversal of allowance		-		998,253
Reversal of other bad debt expense		3,484,522		1,554,268
Rental income		383,808		407,600
Gain on bargain purchase		-		98,867
Others		24,330,888		44,180,384
Total	₩	542,225,953	₩	403,498,533

(2) Other non-operating expenses for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won		2020		2019
Loss on foreign currency transactions	₩	192,651,669	₩	168,200,111
Loss on foreign currency translation		163,192,743		130,688,848
Loss on valuation of derivatives		80,664,031		17,275,657
Loss on disposal of investments in associates and joint ventures		29,997,790		42,908,966
Impairment loss on investments in associates and joint ventures		-		5,136,587
Loss on transactions of derivatives		20,866,968		30,132,823
Loss on valuation of FVTPL - financial assets		520,079		-
Loss on valuation of FVTOCI - financial assets		18,058		-
Loss on disposal of trade receivables		548,803		1,441,211
Loss on disposal of financial assets at amortized cost		-		10,670
Loss on disposal of investment property		37,671		-
Loss on disposal of property, plant and equipment		30,447,238		15,523,522
Loss on disposal of intangible assets		4,961,099		960,288
Impairment loss on property, plant and equipment		56,007,058		116,263,060
Impairment loss on intangible assets		158,630		33,796,423
Impairment loss on right-of-use assets		7,033,070		25,485,054
Impairment loss on assets held-for-sale		689,561		20,863,332
Other bad debt expenses		21,471,387		16,841,214
Loss on inventory abandoned		1,124,207		423,134
Commissions (non-operating)		6,736,904		17,128,084
Donations		5,981,664		7,164,940
Others		42,100,830		61,358,473
Total	₩	665,209,460	₩	711,602,397

36. FINANCIAL INCOME AND EXPENSES:

(1) Financial income for the years ended December 31, 2020 and 2019, is as follows:

In thousands of Korean won		2020		2019
Financial income				
Interest income – present value discount	₩	24,586,296	₩	25,780,335
Dividends income		879,802		1,944,074
Total	₩	25,466,098	₩	27,724,409

(2) Financial expenses for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won		2020		2019
Financial expenses				
Interest expense	₩	205,280,548	₩	224,511,951

37. INCOME TAX EXPENSES:

(1) Income tax expense for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won		2020		2019
Current income tax:				
Current income taxes (*)	₩	165,894,329	₩	127,076,212
Adjustments for prior years		(7,496,445)		21,815,177
Subtotal: Current income tax	₩	158,397,884	₩	148,891,389
Deferred income tax:				
Changes in temporary differences		(77,645,650)		(97,673,743)
Income tax charged directly to equity		15,933,043		(19,797,610)
Income tax expense	₩	96,685,277	₩	31,420,036

(*) The Company adjusts income tax expense due to Corporate Income Refund Tax to current income tax.

(2) The actual income tax expense on the Group's profit before income tax, which differs from the amount that is computed using the tax calculated at the weighted average of annual corporate income tax rates rate applied to profits of consolidated entities, for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won		2020		2019
Profit before income tax	₩	398,407,651	₩	(217,444,963)
Income tax based on statutory tax rate		109,562,104		(59,797,365)
Adjustments:				
Permanent differences		(104,279,422)		19,527,573
Adjustments for prior years		(7,496,445)		21,815,178
Tax credit		(3,092,702)		1,866,839
Effects of unrecognized deferred tax		104,652,355		48,999,462
Others		(2,660,613)		(991,651)
Subtotal: Adjustments		(12,876,827)		91,217,401
Income tax expense	₩	96,685,277	₩	31,420,036

(3) Income tax credited(charged) directly to equity for the years ended December 31, 2020 and 2019 is as follows:

In thousands of Korean won		2020		2019
Current income tax:				
Remeasurement of net defined benefit liabilities	₩	311,686	₩	484,651
Deferred income tax:				
Loss (gain) on valuation of fair value of financial assets		(582,090)		(13,090,757)
Share of other comprehensive loss (income) of associates and joint ventures		3,742,297		(320,024)
Loss on valuation of derivatives		62,785		146,929
Currency translation adjustments		3,308,331		(4,346,812)
Remeasurement of net retirement benefit liabilities		(2,761,417)		(557,309)
Share of remeasurements of net defined benefit liabilities of associates and joint ventures		451,114		199,847
Other capital surplus		11,399,399		(1,798,780)
Other capital adjustments		938		(515,355)
Subtotal: Deferred income tax		15,621,357		(20,282,261)
Total	₩	15,933,043	₩	(19,797,610)

(4) Changes in deferred income tax for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won	2020					
	January 1, 2020	**Profit or loss**	**Other comprehensive income**	**Equity**	**Changes in scope of consolidation**	**December 31, 2020**
Allowance for doubtful accounts	₩ 11,047,431	₩ (3,115,235)	₩ -	₩ -	₩ -	₩ 7,932,196
Loss on valuation of inventories	5,127,247	(638,435)	-	-	-	4,488,812
Gain (loss) on valuation of derivatives	(1,077,354)	855,777	62,785	-	-	(158,792)
Gain (loss) on valuation of financial assets	24,081,165	544,657	(582,090)	-	-	24,043,732
Bonuses	3,867,695	13,103,554	-	-	-	16,971,249
Depreciation	(43,147,831)	(4,608,193)	-	-	-	(47,756,024)
Defined benefit obligation	100,298,287	17,742,493	(2,761,417)	-	-	115,279,363
Plan assets	(33,163,378)	(227,788)	-	-	-	(33,391,166)
Revaluation reserve	(29,078,048)	137,269	-	-	-	(28,940,779)
Revaluation surplus	(209,642,048)	8,122,362	-	-	-	(201,519,686)
Share of remeasurements of net defined benefit liabilities of associates and joint ventures	(76,520,139)	25,059,247	7,501,742	11,400,337	386,470	(32,172,343)
Others	14,940,766	5,048,584	-	-	-	19,989,350
Total	₩ (233,266,207)	₩ 62,024,292	₩ 4,221,020	₩ 11,400,337	₩ 386,470	₩ (155,234,088)

In thousands of Korean won	2019					
	January 1, 2019	**Profit or loss**	**Other comprehensive income**	**Equity**	**Changes in scope of consolidation**	**December 31, 2019**
Allowance for doubtful accounts	₩ 5,522,015	₩ 5,525,416	₩ -	₩ -	₩ -	₩ 11,047,431
Loss on valuation of inventories	6,711,521	(1,584,274)	-	-	-	5,127,247
Gain (loss) on valuation of derivatives	760,962	(1,985,245)	146,929	-	-	(1,077,354)
Gain (loss) on valuation of financial assets	18,092,095	19,079,827	(13,090,757)	-	-	24,081,165
Bonuses	4,664,578	(796,883)	-	-	-	3,867,695
Depreciation	(24,212,435)	(18,935,396)	-	-	-	(43,147,831)
Defined benefit obligation	84,091,044	16,764,552	(557,309)	-	-	100,298,287
Plan assets	(31,870,891)	(1,292,487)	-	-	-	(33,163,378)
Revaluation reserve	(25,865,795)	(3,212,253)	-	-	-	(29,078,048)
Revaluation surplus	(197,165,576)	(12,476,472)	-	-	-	(209,642,048)
Share of remeasurements of net defined benefit liabilities of associates and joint ventures	(223,445,857)	153,696,603	(4,466,989)	(2,314,135)	10,239	(76,520,139)
Others	51,768,150	(36,827,384)	-	-	-	14,940,766
Total	₩ (330,950,189)	₩117,956,004	₩ (17,968,126)	₩ (2,314,135)	₩ 10,239	₩ (233,266,207)

(5) Deductible (taxable) temporary differences not recognized as deferred income tax as of December 31, 2020 and December 31, 2019 are as follows:

In thousands of Korean won	**December 31, 2020**	**December 31, 2019**
Investments in associates and joint ventures (*1)	₩ 682,031,699	₩ 1,022,747,119
Payment guarantee fee and others(*2)	15,535,529	22,632,475

(*1) Temporary differences on investments in associates and joint ventures which are not likely to be reversed.
(*2) Temporary differences of assets and liabilities recognized initially through transactions that do not impact accounting or taxable income and are not due to business combination.

38. EARNINGS PER SHARE:

(1) Basic earnings per common shares from continuing operations for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won, expect for share data and eps		2020		2019
Profit from continuing operations	₩	339,574,260	₩	98,199,207
Profit from continuing operations attributable to owners of the Group		346,928,520		101,439,802
Profit from continuing operations available to common shares		344,445,056		100,682,961
Weighted average number of common shares outstanding		159,922,212		161,803,722
Basic earnings per common share (in Korean won)	₩	2,154	₩	622

(2) Basic loss per common shares from discontinued operations for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won, expect for share data and eps		2020		2019
Loss from discontinued operations	₩	(37,851,886)	₩	(347,064,206)
Loss from discontinued operations attributable to owners of the Group		(37,851,886)		(339,062,403)
Loss from discontinued operations available to common shares		(37,587,013)		(336,719,169)
Weighted average number of common shares outstanding		159,922,212		161,803,722
Basic earnings per preferred share (in Korean won)	₩	(235)	₩	(2,081)

(3) Basic earnings per preferred shares from continuing operations for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won, expect for share data and eps		2020(*)		2019(*)
Profit from continuing operations	₩	339,574,260	₩	98,199,207
Profit from continuing operations attributable to owners of the Group		346,928,520		101,439,802
Profit from continuing operations available to preferred shares		2,483,464		756,841
Weighted average number of preferred shares outstanding		1,123,737		1,123,737
Basic earnings per common share (in Korean won)	₩	2,210	₩	674

(*) Preferred shares were issued under former commercial law of the Republic of Korea prior to amendments in 1997. These preferred shares hold the same priority as common shares in terms of dividends pay out and distribution of residual properties. Thus, earnings per share were calculated accordingly.

(4) Basic loss per preferred shares from discontinued operations for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won, expect for share data and eps		2020(*)		2019(*)
Loss from discontinued operations	₩	(37,851,886)	₩	(347,064,206)
Loss from discontinued operations attributable to owners of the Group		(37,851,886)		(339,062,403)
Loss from discontinued operations available to preferred shares		(264,873)		(2,343,234)
Weighted average number of preferred shares outstanding		1,123,737		1,123,737
Basic earnings per preferred share (in Korean won)	₩	(236)	₩	(2,085)

(*) Preferred shares were issued under former commercial law of the Republic of Korea prior to amendments in 1997. These preferred shares hold the same priority as common shares in terms of dividends pay out and distribution of residual properties. Thus, earnings per share were calculated accordingly.

(5) Potential common shares consist of bond with warrant issued by Hanwha Galleria Timeworld Co., Ltd. Diluted earnings per share for the years ended December 31, 2020 and 2019, are identical with basic earnings per share since there are no potentially dilutive common shares.

39. COMMITMENTS AND CONTINGENCIES:

(1) Credit limits provided by financial institutions as of December 31, 2020, are as follows:

In thousands of Korean won, In USD, In EUR, In CNY, In MYR, In CZK, In THB, In MXN	**Currency**	**Limit amounts**
Overdraft	KRW	46,000,000
	CZK	131,225,000
Usance	USD	226,100,000
D/A, D/P, Local and foreign trade	USD	40,000,000
	THB	70,000,000
Others	KRW	2,682,810,500
	USD	1,750,184,597
	EUR	66,000,000
	CNY	2,801,000,000
	MYR	631,058,997
	CZK	1,272,882,500
	THB	90,000,000
	MXN	99,676,000
Total	KRW	2,728,810,500
	USD	2,016,284,597
	EUR	66,000,000
	CNY	2,801,000,000
	MYR	631,058,997
	CZK	1,404,107,500
	THB	160,000,000
	MXN	99,676,000

(2) The Group collateralized the following assets as collaterals in relation to borrowings as of December 31, 2020, as follows:

In thousands of Korean won	**Collateral amount**	**Lender**
Cash and cash equivalents	₩ 26,895,846	Industrial Bank of Korea and others
Trade receivables and other receivables	285,160,505	Korea Development Bank and others
Other financial assets	167,491,793	Shinhan Bank and others
Inventories	38,654,967	Korea Development Bank and others
Property, plant and equipment	2,146,069,372	Korea Development Bank and others
Intangible assets	34,175,932	KEB Hana Bank and others
Subsidiary equity	21,869,000	Korea Development Bank and others

(3) Guarantees provided to others as of December 31, 2020, are as follows:

As of December 31, 2020, the Group provides payment guarantees ₩54,723 million for loans taken out by employees from financial institutions.

As of December 31, 2020, the Group provides payment guarantees USD 1,000,000 for loans taken out by Alterpower Specialist, Inc.

As of December 31, 2020, the Group is responsible for the obligations to guarantee of construction of photovoltaic plant and construction warranties to Korea Hydro & Nuclear Power Co., Ltd.

As of December 31, 2020, the Group provides payment guarantees and collateral for related parties in addition to the above guarantees provided to others (see Note 40).

(4) The Group is provided with contract performance guarantee and others as of December 31, 2020.

In thousands of Korean won
In USD

Guarantor	**Detail**	**Currency**	**Amount**
Kookmin Bank	Guarantee for FRN bonds	USD	30,000,000
Seoul Guarantee Insurance	Guarantee for performance	KRW	32,035,821
KEB Hana Bank	Guarantee for foreign currency	USD	30,000,000
Jinkwan Park	Joint guarantees	KRW	2,580,000
Youngwook Lee	Joint guarantees	KRW	6,496,800

In addition, the Group is provided construction of photovoltaic plant and construction warranties from Seoul Guarantee Insurance.

(5) The Group is a plaintiff in twenty-one pending litigations involving an aggregate litigation amount of ₩ 54,385 million and is a defendant in thirty-two pending litigations involving an aggregate amount of ₩68,011 million as of December 31, 2020. The outcome of any of these proceedings cannot be reasonably estimated.

(6) On July 11, 2005, the Group sold all of its ownership interests in POSCO ENERGY Co., Ltd. to POSCO. According to the stock sale and purchase agreement, the Group shall indemnify POSCO ENERGY Co., Ltd. from any complaint filed by a third party regarding intake channels and drainage canals used by POSCO ENERGY Co., Ltd. to the extent of 25% of any related loss upon sthe termination of the electricity power agreement contracted between POSCO ENERGY Co., Ltd. and Korea Electric Power Corporation or until the cause of the claim is resolved. Management does not believe the ultimate resolution would have a material adverse effect on the financial condition of the Group.

(7) Samsung C&T Corporation and Samsung SDI are entitled to the right of first sale regarding their remaining ownership interests at the time of Hanwha General Chemical Co., Ltd.'s initial public offerings. If Hanwha General Chemical Co., Ltd.'s stock cannot be listed within six years (seven years if requested by the Group) from the end date of the transaction (April 30, 2015), Samsung C&T Corporation and Samsung SDI have a put option and the Group has a call option in regard to the remaining ownership interests. If Samsung C&T Corporation and Samsung SDI sell their ownership interests, the Group has first priority in buying them. If the Group sells its ownership interest, Samsung C&T Corporation and Samsung SDI have a tag-along right, and the Group has a drag-along right.

(8) As of December 31, 2020, the Group provides unlimited guarantee in relation to the supply agreement with BMW and its subsidiaries. Duration of the guarantee is 15 years from the last supply agreement of the last project.

(9) As of December 31, 2020, the Group provides guarantee of EUR 7,424,000 in relation to the supply agreement with Volkswagen(the "VW") and its subsidiaries. In addition, the Group provides guarantee in relation to the commercial transaction with Mercedes Benz AG limited of EUR 30,000,000.

(10) As of December 31, 2020, two guarantees are provided by the Group in relation to Hanwha Q CELLS America Inc.'s contract, which is the module supply agreement of USD 11,183,172 and USD 207,366,000 of total USD 55,915,860 with NextEra Energy Constructors, LLC. In addition, guarantees of construction has been provided for the contracts of Hanwha Q CELLS USA Corp with RBC Kellam Holding Co, LLC. amounts of USD 27,028,000.

(11) As of December 31, 2020, the Group provides a guarantee of USD 68,577,030 in relation to the agreement of shares disposal between Zia Guclu, purchaser of 18 subsidiaries of Hanwha Q CELLS Turkey.

40. RELATED PARTIES:

(1) Details of the Group's related parties as of December 31, 2020, are as follows:

Description	Related parties
Parent Company:	Hanwha Corporation
Associates/Joint ventures in domestic:	Smile Ventures Co., Ltd.
	H2 Co., Ltd.
	HANWHA Eagles Professional Baseball Club
	Hanwha Savings Bank Co., Ltd.
	YEOCHUN NCC Co., Ltd.
	Eagles Energy Co., Ltd
	Hanwha Station Development Co., Ltd.
	Hanwha General Chemical Co., Ltd.
	HANWHA INVESTMENT AND SECURITIES CO., LTD.
	Hanwha Hotels and Resort Co., Ltd.
Associates/Joint ventures in overseas:	Burdur Enerji A.S.
	Crystal Solar Inc.
	GRANSOLAR ATOTONILCO, S.A. DE C.V.
	GRANSOLAR OCOTLAN, S.A. DE C.V.
	Gulf Advanced Cables Insulation Company
	HSP TW TE, LLC
	International Polymers Company
	JV Cooke Solar, LLC
	Kellam Tax Equity Partnership, LLC
	Lakeshore East Retail LLC
	Luxbon Solar S.A.
	Parcel O LLC
	SwitchDin Pty Limited
Conglomerate in domestic(*):	DATA ANALYTICS LAB Co., LTD
	101 Global Co., Ltd.
	SIT CO., LTD.
	SIT Tech CO., Ltd.
	HPND Co., Ltd.
	Yeosu Sea World Corporation
	Ilsan Sea World Corporation
	Gtention
	Kyongju Aerospace Electrical Systems Co., Ltd
	HANWHA 63 CITY CORPORATION
	Hanwha Engineering & Construction Corporation
	Hanwha Financial Asset Co.Ltd
	Hanwha Estate Co., Ltd.
	HANWHA ESTATE SERVICE
	H-Solution Corporation
	Eco E&O corporation
	Jeju Ocean Science Museum Corporation
	Carrot Co., Ltd
	Tg Solar Co,. Ltd.
	PLAZA D&C Co,. Ltd.
	Hanwha Defense Systems Corp.
	Hanwha Life Asset Co., Ltd.
	Hanwha LIFE INSURANCE CO., LTD
	Hanwha General Insurance Co., Ltd.
	Hanwha Insurance Investigation Co., Ltd.
	Hanwha System Corporation
	Hanwha Energy Corporation
	HANWHA AEROSPACE CO., LTD
	Hanwha Asset Management Co., Ltd.
	Hanwha Precision Machinery Co.,Ltd.

Description	Related parties
	HANWHA TECHWIN CO., LTD.
	HANWHA TOTAL PETROCHEMICAL Co., Ltd.
	Hanwha Power Systems Co., Ltd.
	Haenara Solar Co,. Ltd. and others
Conglomerate in overseas(*):	Foodist Food Culture(Shanghai) Co., Ltd.
	174 PG Torreon, S. de R.L. de C.V.
	Alfabeta En. San. ve Tic. A.S.
	Altinorda Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.
	Bahcesaray Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.
	BT1 Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.
	Cento En. San. ve Tic. Ltd. Sti.
	Gunesim En. San. ve Tic. Ltd. Sti.
	HANWHA AERO ENGINES.,LTD
	Hanwha Aerospace USA
	Hanwha Canada Development Inc.
	Hanwha Energy Australia Pty. Ltd.
	Hanwha Energy Corporation Japan
	Hanwha Energy Corporation Singapore Pte. Ltd.
	Hanwha Energy USA Holdings Corporation
	Hanwha Europe GmbH
	Hanwha General Chemical AU Pty Ltd
	Hanwha General Chemical USA Corp.
	HANWHA MINING SERVICE USA INC.
	Hanwha Power Systems Americas, Inc.
	Hanwha Power Systems (Shanghai) Co.,LTD
	Hanwha Q CELLS Japan Co.,Ltd.
	Hanwha Solar Power USA Corp.
	HANWHA TECHWIN AMERICA, INC.
	Hanwha Techwin Automation Americas, Inc.
	HQC Tatanka Wi Solar Power Generation Station, LLC
	Jindera Solar Farm Pty. Ltd.
	Lamda En. San. ve Tic. A.S.
	Meca Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.
	NHS Agri-Service Pty Ltd
	NHS Holdings Pty Ltd
	Raggio En. San. ve Tic. Ltd. Sti.
	Razin GES Elektrik Sanayi ve Ticaret A.S.
	Razin Gunes Enerjisi Sanayi ve Ticaret A.S.
	Razin Elektrik Uretim Sanayi ve Ticaret A.S.
	Razin En. San. ve Tic. A.S.
	Sol Caltivante II S.A.
	Sol Caltivante III S.A.
	Sol Caltivante IV S.A.
	Sol Caltivante VI S.A.
	S&P World Networks DMCC
	Tessa En. San. ve Tic. Ltd. Sti.
	Vizi En. San. ve Tic. Ltd. Sti. and others

(*) Although these companies are not applicable to related parties defined in K-IFRS 1024 Paragraph 9, a group of large-size affiliates designated by the Korea Fair Trade Commission is classified as related party according to the resolution by the Securities & Futures Commission in accordance with substantial relationship defined in K-IFRS 1024 Paragraph 10.

(2) Transactions with related parties for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won	2020			
	Sales	Disposal of fixed assets	Purchase	Acquisition of fixed assets
Parent Company:				
Hanwha Corporation (*1)	₩ 142,710,723	₩ -	₩ 38,003,988	₩ 79,381,201
Associates:				
Hanwha Savings Bank Co., Ltd.	41,010	-	-	-
Eagles Energy Co., Ltd	216,988	-	-	-
Hanwha Station Development Co., Ltd.(*2)	26,559	-	838,662	-
HANWHA Eagles Professional Baseball Club	26,077	-	1,320,788	-
Hanwha General Chemical Co., Ltd.	6,067,273	-	23,761,703	-
HANWHA INVESTMENT AND SECURITIES CO., LTD.	1,239,320	-	14,558	-
Hanwha Hotels and Resort Co., Ltd.	1,959,652	-	6,821,319	926,909
International Polymers Company(*3)	-	-	140,880,618	-
JV Cooke Solar, LLC	92,590,979	-	-	-
Kellam Tax Equity Partnership, LLC	95,926,596	-	-	-
Luxbon Solar S.A.	4,567,870	-	-	-
Saudi Specialized Products Company	3,867	-	-	-
Joint ventures:				
YEOCHUN NCC Co., Ltd.(*4)	21,723,021	-	1,100,048,243	-
Gulf Advanced Cables Insulation Company	284,228	-	-	-
Conglomerate:				
174 PG Torreon, S. de R.L. de C.V.	2,089,893	-	11,162	-
DATA ANALYTICS LAB Co., LTD	3,580	-	-	-
Seoulyeokbukbuyeoksegwon Development Co.	7,285	-	-	-
101 Global Co., Ltd.	8,178	-	228,486	-
SIT CO., LTD.	77,792	-	-	2,700
SIT Tech CO., Ltd.	9,170	-	-	-
HPND Co., Ltd.	49,500	-	-	50,000,000
Yeosu Sea World Corporation	80	-	18,337	-
Ilsan Sea World Corporation	92	-	6,665	-
Gtention	1,330	-	-	-
Kyongju Aerospace Electrical Systems Co., Ltd	1,950	-	-	-
HANWHA 63 CITY CORPORATION	233,587	-	50,863	-
Hanwha Financial Asset Co.Ltd	1,957	-	-	-
Hanwha Engineering & Construction Corporation	2,221,683	-	3,397,400	243,219,653
Hanwha Estate Co., Ltd.	407,214	-	30,831,066	13,295
HANWHA ESTATE SERVICE	4,410	-	433	-
Agricultural Corporation Company Green Tomorrow Co.,Ltd.	3,129	-	-	-
H-Global Partners Limited	10,759	-	-	-
H-Solution Corporation	3,549	-	-	-
Eco E&O corporation	19,027	-	323,428	-
Jeju Ocean Science Museum Corporation	15	-	16,922	-
Carrot Co., Ltd	23,520	-	584,475	-
Tg Solar Co,. Ltd.	67,750	-	-	-
Foodist Food Culture(Shanghai) Co., Ltd.	-	-	3,532,566	-
PLAZA D&C Co,. Ltd.	78	-	1,680	-
Hanwha Defense Systems Corp.	2,509,084	-	-	-
Hanwha Life Asset Co., Ltd.	20,495	-	-	-
Hanwha LIFE INSURANCE CO., LTD (*5)	6,061,966	-	23,485,184	-
Hanwha General Insurance Co., Ltd.	2,526,149	-	10,473,279	-
Hanwha Insurance Investigation Co., Ltd.	212,157	-	-	-
Hanwha System Corporation	7,707,127	-	45,655,997	9,925,914
Hanwha Energy Corporation	7,302,858	-	149,501,505	-
HANWHA AEROSPACE CO., LTD	2,819,817	-	-	-
Hanwha Asset Management Co., Ltd.	128,471	-	-	-
Hanwha Precision Machinery Co.,Ltd.	484,956	-	2,915,453	309,200
HANWHA TECHWIN CO., LTD.	509,899	-	-	-

In thousands of Korean won	2020			
	Sales	Disposal of fixed assets	Purchase	Acquisition of fixed assets
HANWHA TOTAL PETROCHEMICAL Co., Ltd.	11,506,029	675,000	68,970,284	-
Hanwha Power Systems Co., Ltd.	231,159	-	335,899	82,284
Alfabeta En. San. ve Tic. A.S.	24,454	-	-	-
Altinorda Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	21,779	-	-	-
Bahcesaray Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	23,712	-	-	-
BT1 Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	95,971	-	-	-
Cento En. San. ve Tic. Ltd. Sti.	48,908	-	-	-
Gunesim En. San. ve Tic. Ltd. Sti.	25,098	-	-	-
HANWHA AERO ENGINES.,LTD	483,556	-	-	-
Hanwha Aerospace USA	12,544	-	-	-
Hanwha Asset Management (USA) Ltd.	10,249	-	-	-
Hanwha Canada Development Inc.	67,681	-	160,723	-
Hanwha Energy USA Holdings Corporation	82,823,547	-	32,974	-
Hanwha Europe GmbH	86,441,582	-	519,157	-
Hanwha General Chemical AU Pty Ltd	9,759	-	-	-
Hanwha General Chemical USA Corp.	1,570,487	-	288,704	-
HANWHA MINING SERVICE USA INC.	10,927	-	-	-
Hanwha Power Systems (Shanghai) Co.,LTD	-	-	283,947	-
Hanwha Power Systems Americas, Inc.	5,952	-	-	-
Hanwha Q CELLS Japan Co.,Ltd.	231,720,708	-	148,320,369	-
Hanwha Solar Power USA Corp.	17,001	-	-	-
HANWHA TECHWIN AMERICA, INC.	226,703	-	-	-
Hanwha Techwin Automation Americas, Inc.	48,015	-	438,799	-
Lamda En. San. ve Tic. A.S.	23,690	-	-	-
Meca Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	23,860	-	-	-
NHS Agri-Service Pty Ltd	7,807	-	-	-
NHS Holdings Pty Ltd	1,952	-	-	-
Raggio En. San. ve Tic. Ltd. Sti.	24,454	-	-	-
Razin GES Elektrik Sanayi ve Ticaret A.S.	51,428	-	-	-
Razin Gunes Enerjisi Sanayi ve Ticaret A.S.	45,469	-	-	-
Razin Elektrik Uretim Sanayi ve Ticaret A.S.	120,403	-	-	-
Razin En. San. ve Tic. A.S.	57,851	-	-	-
S&P World Networks DMCC	2,634,116	-	-	-
Sol Caltivante II S.A.	70,086	-	-	-
Sol Caltivante III S.A.	161,531	-	-	-
Sol Caltivante IV S.A.	100,396	-	-	-
Sol Caltivante VI S.A.	210,259	-	-	-
Tessa En. San. ve Tic. Ltd. Sti.	48,908	-	-	-
Vizi En. San. ve Tic. Ltd. Sti.	24,454	-	-	-
Total	₩ 821,945,155	₩ 675,000	₩ 1,802,075,636	₩ 383,861,156

(*1) The Group paid dividends of ₩11,909 million to Hanwha Corporation for the year ended December 31, 2020.

(*2) The Group received dividends of ₩1,582 million from Hanwha Station Development Co., Ltd. for the year ended December 31, 2020.

(*3) The Group received dividends of ₩7,539 million from International Polymers Company for the year ended December 31, 2020.

(*4) The Group received dividends of ₩165,000 million from YEOCHUN NCC Co., Ltd. for the year ended December 31, 2020.

(*5) The Group received dividends of ₩456 million from Hanwha LIFE INSURANCE CO., LTD. for the year ended December 31, 2020. In addition to the above dividend receipts, the Group received dividends of ₩293 million and ₩570 million from HSP TW TE, LLC and Lakeshore East Retail LLC, respectively.

In thousands of Korean won	2019		
	Sales	Purchase	Acquisition of fixed assets
Parent Company:			
Hanwha Corporation (*1)	₩ 133,319,106	₩ 39,763,099	₩ 188,438,001
Associates:			
Smile Ventures Co., Ltd.	1	154	-
Hanwha Savings Bank Co., Ltd.	15,894	-	-
Eagles Energy Co., Ltd	63,637	-	-
Hanwha Station Development Co., Ltd.(*2)	32,598	1,154,194	-
HANWHA Eagles Professional Baseball Club	26,127	1,028,997	-
Hanwha General Chemical Co., Ltd.	6,732,322	25,186,755	-
HANWHA INVESTMENT AND SECURITIES CO., LTD.	1,228,889	167,243	-
Hanwha Hotels and Resort Co., Ltd.	3,820,619	18,522,503	2,005,699
International Polymers Company(*3)	-	169,807,248	-
Saudi Specialized Products Company	295,555	-	-
Joint ventures:			
YEOCHUN NCC Co., Ltd.(*4)	21,366,346	1,328,247,642	-
Gulf Advanced Cables Insulation Company	388,952	224,746	-
Conglomerate:			
174 PG Torreon, S. de R.L. de C.V.	47,860,410	-	-
Dreamplus Production., Co. Ltd.	210	-	-
DATA ANALYTICS LAB Co., LTD	3,135	-	-
101 Global Co., Ltd.	4,483	433,442	-
SIT CO., LTD.	36,236	-	-
SIT Tech CO., Ltd.	9,590	-	-
HPND Co., Ltd.	25,919	-	
Yeosu Sea World Corporation	83	126,365	-
Ilsan Seaworld, Co., Ltd.	116	62,418	-
Gtention	1,820	-	-
Kyongju Aerospace Electrical Systems Co., Ltd	2,314	-	-
HANWHA 63 CITY CORPORATION	222,837	1,473,568	-
Hanwha Engineering & Construction Corporation	22,942,441	1,708,370	305,125,676
Hanwha Financial Asset Co. Ltd	7,751	-	-
Hanwha Estate Co., Ltd.	549,648	37,495,397	-
Hanwha Estate Service Co., Ltd.	420	-	
H-Solution Corporation	420	-	-
Eco E&O corporation	18,360	79,793	-
Jeju Ocean Science Museum Corporation	-	164,152	-
Carrot Co., Ltd	12,392	-	
Tg Solar Co,. Ltd.	1,287,250	-	-
Foodist Food Culture(Shanghai) Co., Ltd.	-	3,428,819	-
Hanwha Defense Systems Corp.	2,497,941	-	-
Hanwha Life Asset Co., Ltd.	21,984	-	-
Hanwha LIFE INSURANCE CO., LTD(*5)	9,798,750	20,868,420	-
Hanwha General Insurance Co., Ltd.	4,843,116	12,141,749	-
Hanwha Insurance Investigation Co., Ltd.	55,728	-	-
Hanwha System Corporation	3,844,094	36,701,566	24,948,094
Hanwha Energy Corporation	1,015,209	152,126,938	-
HANWHA AEROSPACE CO., LTD	3,061,909	-	-
Hanwha Asset Management Co., Ltd.	129,288	-	-
Hanwha Precision Machinery Co.,Ltd.	335,320	7,862,810	-
HANWHA TECHWIN CO., LTD.	348,716	44,917	-
HANWHA TOTAL PETROCHEMICAL Co., Ltd.	7,019,425	72,738,752	-
Hanwha Power Systems Co., Ltd.	322,364	1,472,973	-
Haenara Solar Co,. Ltd..	322,032	-	-
Alfabeta En. San. ve Tic. A.S.	24,135	-	-
Altinorda Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	24,494	-	-
Bahcesaray Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	25,913	-	-
BT1 Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	97,585	-	-

In thousands of Korean won	2019		
	Sales	**Purchase**	**Acquisition of fixed assets**
Cento En. San. ve Tic. Ltd. Sti.	52,474	-	-
Dysart Solar Farm Pty. Ltd.	18,549	-	-
Gunesim En. San. ve Tic. Ltd. Sti.	24,135	-	-
Hanwha Energy Australia Pty. Ltd.	6,841	1,371	-
Hanwha Energy Corporation Japan	148,614	-	-
Hanwha Energy Corporation Singapore Pte. Ltd.	74,658	-	-
Hanwha Energy USA Holdings Corporation	156,445,698	14,671	-
Hanwha Europe GmbH	83,528,383	565,880	-
Hanwha General Chemical AU Pty Ltd	9,718	-	-
Hanwha General Chemical USA Corp.	1,873,126	-	-
Hanwha Q CELLS Japan Co.,Ltd.	349,862,786	155,838,093	-
Hanwha Solar Power USA Corp.	16,780	-	-
Hanwha Techwin Automation Americas, Inc.	102,057	1,065,714	-
Jindera Solar Farm Pty. Ltd.	3,019	-	-
Lamda En. San. ve Tic. A.S.	26,724	-	-
Meca Enerji IC ve Dis Ticaret Sanayi ve Ticaret Ltd. Sti.	24,090	-	-
NHS Agri-Service Pty Ltd	15,215	-	-
NHS Holdings Pty Ltd	3,417	-	-
Raggio En. San. ve Tic. Ltd. Sti.	27,294	-	-
Razin GES Elektrik Sanayi ve Ticaret A.S.	48,533	-	-
Razin Gunes Enerjisi Sanayi ve Ticaret A.S.	44,877	-	-
Razin Elektrik Uretim Sanayi ve Ticaret A.S.	119,474	-	-
Razin En. San. ve Tic. A.S.	59,963	-	-
Sol Caltivante II S.A.	59,463	-	-
Sol Caltivante III S.A.	177,541	-	-
Sol Caltivante IV S.A.	59,463	-	-
Sol Caltivante VI S.A.	177,541	-	-
S&P World Networks DMCC	4,124,862	-	-
Tessa En. San. ve Tic. Ltd. Sti.	65,812	-	-
Vizi En. San. ve Tic. Ltd. Sti.	24,135	-	-
Total	₩ 871,289,126	₩ 2,090,518,759	₩ 520,517,470

(*1) The Group paid dividends of ₩11,909 million to Hanwha Corporation for the year ended December 31, 2019.

(*2) The Group received dividends of ₩1,582 million from Hanwha Station Development Co., Ltd. for the year ended December 31, 2019.

(*3) The Group received dividends of ₩13,866 million from International Polymers Company for the year ended December 31, 2019.

(*4) The Group received dividends of ₩70,000 million from YEOCHUN NCC Co., Ltd. for the year ended December 31, 2019.

(*5) The Group received dividends of ₩1,520 million from Hanwha LIFE INSURANCE CO., LTD. for the year ended December 31, 2019. In addition to the above dividend receipts, the Group received dividends of ₩269 million and ₩1,748 million from HSP TW TE, LLC and Lakeshore East Retail LLC, respectively.

(3) Outstanding receivables and payables from transactions with related parties as of December 31, 2020 and 2019, are as follows:

In thousands of Korean won

Company name	2020				
	Receivables			Payables	
	Trade receivables	Loans	Other receivables	Trade payables	Other payables
Parent Company:					
Hanwha Corporation	₩ 7,715,754	₩ -	₩2,971,683	₩ 6,682,204	₩24,228,034
Associates:					
HANWHA Eagles Professional Baseball Club	-	-	209,178	-	-
Eagles Energy Co., Ltd	-	-	53,000	-	-
Hanwha Station Development Co., Ltd.	38,630	-	1,120,000	-	46,183
Hanwha General Chemical Co., Ltd.	1,301,730	-	1,100,826	2,090,269	123,752
HANWHA INVESTMENT AND SECURITIES CO., LTD.	60,258	-	18	-	18
Hanwha Hotels and Resort Co., Ltd.	291,494	-	32,736,632	46,812	449,324
Crystal Solar Inc.(*1)	-	1,866,931	319,293	-	-
International Polymers Company	-	-	1,691,869	29,202,595	-
JV Cooke Solar, LLC	33,434,978	-	-	-	-
Kellam Tax Equity Partnership, LLC	74,839,127	-	-	-	-
Luxbon Solar S.A.	-	-	3,172,464	-	-
Joint Ventures					
YEOCHUN NCC Co., Ltd.	3,502,533	-	286,530	165,678,829	10,140,428
Gulf Advanced Cables Insulation Company(*2)	-	15,941,122	630,300	-	-
Conglomerate:					
101 Global Co., Ltd.	-	-	-	-	3,932
SIT CO., LTD.	1,800	-	-	-	-
Hanwha Financial Asset Co.Ltd	74	-	-	-	-
Hanwha Engineering & Construction Corporation	50,849	-	2,216	125,387	8,084,276
Hanwha Estate Co., Ltd.	4,628	-	-	-	2,519,967
HANWHA 63 CITY CORPORATION	36,111	-	-	-	223
Eco E&O corporation	156	-	-	-	-
Foodist Food Culture(Shanghai) Co., Ltd.	-	-	-	-	36,286
Hanwha Defense Systems Corp.	1,054,709	-	5,177	-	-
Hanwha Life Asset Co., Ltd.	705	-	-	-	-
Hanwha LIFE INSURANCE CO., LTD	44,674	-	101,049,733	-	118,737
Hanwha General Insurance Co., Ltd.	159,264	-	261,524	75	32,981
Hanwha System Corporation	1,187,371	-	-	658,649	5,780,875
Hanwha Energy Corporation	54,319	-	11,302	17,144,595	102,306
HANWHA AEROSPACE CO., LTD	240,343	-	12,572	-	-
Hanwha Asset Management Co., Ltd.	991	-	-	-	-
Hanwha Precision Machinery Co.,Ltd.	21,166	-	-	3,098,410	42,350
HANWHA TECHWIN CO., LTD.	47,688	-	-	-	-
HANWHA TOTAL PETROCHEMICAL Co., Ltd.	2,043,686	-	-	9,329,561	366
Hanwha Power Systems Co., Ltd.	27,720	-	-	163,680	86,803
HANWHA AERO ENGINES.,LTD	430,770	-	-	-	422,938
Hanwha Energy USA Holdings Corporation	5,737,252	-	1,900	-	-
Hanwha Europe GmbH	10,280,132	-	-	-	1,729
Hanwha General Chemical AU Pty Ltd	-	-	920	-	-
Hanwha General Chemical USA Corp.	11,882	-	-	-	-
HANWHA MINING SERVICE USA INC.	3,264	-	-	-	-
Hanwha Power Systems (Shanghai) Co.,LTD	-	-	-	28,016	-
Hanwha Q CELLS Japan Co., Ltd.	22,015,290	-	31,573	9,485,733	418,324
HANWHA TECHWIN AMERICA, INC.	4,896	-	-	-	-

In thousands of Korean won

Company name	2020				
	Receivables			Payables	
	Trade receivables	Loans	Other receivables	Trade payables	Other payables
Hanwha Techwin Automation Americas, Inc.	1,469	2,187,592	-	13,883	-
HQC Tatanka Wi Solar Power Generation Station, LLC	1,280,768	-	-	-	-
NHS Agri-Service Pty Ltd	-	-	736	-	-
NHS Holdings Pty Ltd	-	-	184	-	-
Total	₩ 165,926,481	₩ 19,995,645	₩ 145,669,630	₩ 243,748,698	₩ 52,639,832

(*1) The Group recognized allowance for doubtful accounts for loans and others of Crystal Solar Inc as of December 31, 2020.
(*2) The Group recognized allowance for doubtful accounts for loans and others of Gulf Advanced Cables Insulation Company as of December 31, 2020.

In thousands of Korean won

Company name	2019				
	Receivables			Payables	
	Trade receivables	Loans	Other receivables	Trade payables	Other payables
Parent Company:					
Hanwha Corporation	₩ 5,316,616	₩ -	₩ 2,480,641	₩ 14,346,161	₩60,933,421
Associates:					
Smile Ventures Co., Ltd.	18	-	-	45	1
HANWHA Eagles Professional Baseball Club	-	-	299,805	-	-
Hanwha Station Development Co., Ltd.	358,417	-	1,120,000	-	409,726
Hanwha General Chemical Co., Ltd.	1,205,411	-	1,121,593	2,779,010	141,165
HANWHA INVESTMENT AND SECURITIES CO., LTD.	10,410	-	608	-	66
Hanwha Hotels and Resort Co., Ltd.	7,842,349	-	28,461,923	136,325	1,235,935
Alterpower Digos Solar, Inc.(*1)	-	16,080,592	-	-	-
Crystal Solar Inc.(*2)	-	1,866,931	339,777	-	-
International Polymers Company	-	-	1,755,572	26,014,957	-
Luxbon Solar S.A.	-	12,199,397	-	-	-
Saudi Specialized Products Company(*3)	-	14,424,381	221,193	-	-
Joint Ventures					
YEOCHUN NCC Co., Ltd.	2,429,420	-	2,837,508	210,467,920	17,101,839
Gulf Advanced Cables Insulation Company	-	16,624,074	654,440	-	-
Conglomerate:					
174 PG Torreon, S. de R.L. de C.V.	21,386,878	-	-	-	-
DATA ANALYTICS LAB Co., LTD	198	-	-	-	-
HPND	-	-	10,000,000	-	-
101 Global Co., Ltd.	-	-	-	85,178	6,504
Yeosu Sea World Corporation	-	-	-	-	11,981
Ilsan Seaworld, Co., Ltd.	-	-	-	-	5,653
Hanwha Engineering & Construction Corporation	38,584	-	398,330	1,133,528	36,326,569
Hanwha Estate Co., Ltd.	47,616	-	-	-	3,252,883
HANWHA 63 CITY CORPORATION	8,562	-	-	-	314,306
Eco E&O corporation	220	-	-	-	-
Jeju Ocean Science Museum Corporation	-	-	-	-	12,181
Foodist Food Culture(Shanghai) Co., Ltd.	-	-	-	12,765	25,686
Hanwha Defense Systems Corp.	331,855	-	11,036	-	-
Hanwha LIFE INSURANCE CO., LTD.	315,940	-	101,376,002	-	3,843
Hanwha General Insurance Co., Ltd.	678,519	-	285,796	274	170,895
Hanwha System Corporation	824,981	-	18,496	509,426	8,724,094
Hanwha Energy Corporation	43,575	-	5,141	14,819,683	109,059

In thousands of Korean won	2019				
Company name	**Receivables**			**Payables**	
	Trade receivables	**Loans**	**Other receivables**	**Trade payables**	**Other payables**
HANWHA AEROSPACE CO., LTD.	857,145	-	26,801	-	-
Hanwha Asset Management Co., Ltd.	7,797	-	-	-	-
Hanwha Precision Machinery Co., Ltd.	2,937	-	-	6,273,404	14,960
HANWHA TECHWIN CO., LTD.	8,566	-	-	-	-
HANWHA TOTAL PETROCHEMICAL Co., Ltd.	1,665,007	-	-	5,955,579	-
Hanwha Power System Co. Ltd.	1,356	-	-	212,850	1,232
Hanwha Canada Development Inc.	46,012	-	-	-	-
Hanwha Energy Australia Pty. Ltd.	-	-	1,914	-	1,382
Hanwha Energy USA Holdings Corporation	5,661,130	-	1,961	-	-
Hanwha Europe GmbH	15,159,930	-	1,191,863	7,473	-
Hanwha General Chemical AU Pty Ltd	-	-	891	-	-
Hanwha General Chemical USA Corp.	55,462	-	867,293	-	-
Hanwha Q CELLS Japan Co., Ltd.	57,554,494	-	1,563,683	11,094,549	219,634
Hanwha Techwin Automation Americas, Inc.	-	2,323,431	-	52,185	-
HQC Tatanka Wi Solar Power Generation Station, LLC	1,362,935	-	-	-	-
NHS Agri-Service Pty Ltd	-	-	713	-	-
NHS Holdings Pty Ltd	-	-	178	-	-
Sol Caltivante II S.A.	116,902	-	-	-	-
Sol Caltivante III S.A.	219,922	-	-	-	-
Sol Caltivante IV S.A.	73,307	-	-	-	-
Sol Caltivante VI S.A.	176,327	-	-	-	-
Total	₩ 123,808,798	₩ 63,518,806	₩ 155,043,158	₩293,901,312	₩129,023,015

(*1) The Group recognized allowance for doubtful accounts for loans and others of Alterpower Digos Solar, Inc. as of December 31, 2019.

(*2) The Group recognized allowance for doubtful accounts for loans and others of Crystal Solar Inc as of December 31, 2019.

(*3) The Group recognized allowance for doubtful accounts for loans and others of Saudi Specialized Products Company as of December 31, 2019.

(4) Loan transactions with related parties for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won		2020				
	Company	**Beginning balance**	**Increase**	**Decrease**	**Others(*)**	**Ending balance**
Associates:	Alterpower Digos Solar, Inc.	₩16,080,592	₩5,529,820	₩(19,305,414)	₩(2,304,998)	₩ -
	Crystal Solar Inc.	1,866,931	-	-	-	1,866,931
	Luxbon Solar S.A.	12,199,397	-	(8,216,520)	(3,982,877)	-
	Saudi Specialized Products Company	14,424,381	-	(14,059,603)	(364,778)	-
Joint ventures:	Gulf Advanced Cables Insulation Company	16,624,074	-	-	(682,952)	15,941,122
Conglomerate:	Hanwha Techwin Automation Americas, Inc	2,323,431	-	-	(135,839)	2,187,592
Total		₩63,518,806	₩5,529,820	₩(41,581,537)	₩(7,471,444)	₩19,995,645

(*) Includes accrued revenues related to loans.

In thousands of Korean won		2019				
	Company	**Beginning balance**	**Increase**	**Decrease**	**Others(*)**	**Ending balance**
Associates:	Alterpower Digos Solar, Inc.	₩12,510,332	₩ -	₩ -	₩ 3,570,260	₩16,080,592
	Crystal Solar Inc.	2,055,250	-	(189,746)	1,427	1,866,931
	Luxbon Solar S.A.	8,583,075	-	-	3,616,322	12,199,397
	Saudi Specialized Products Company	15,838,922	2,213,587	(3,354,300)	(273,828)	14,424,381
Joint ventures:	Gulf Advanced Cables Insulation Company	15,733,393	-	-	890,681	16,624,074
Conglomerate:	Hanwha Techwin Automation Americas, Inc	2,244,551	-	-	78,880	2,323,431
Total		₩56,965,523	₩2,213,587	₩(3,544,046)	₩ 7,883,742	₩63,518,806

(*) Includes accrued revenues related to loans.

(5) Equity transactions with related parties for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won	**Transaction**	**Company**	**2020**
Associates:	Share sales	Alterpower Specialist, Inc.	₩ 81,927
		Renew Akshay Urja Privated Limited	24,082,617
		Saudi Specialized Products Company	1,272
		Alterpower Digos Solar, Inc.	1,558,903
	Capital increase	Saudi Specialized Products Company	4,956,734

In thousands of Korean won	**Transaction**	**Company**	**2019**
Associates:	Capital increase	H2 Co., Ltd	₩ 3,000,008

(6) Payment guarantees provided for related parties as of December 31, 2020, are as follows:

(In USD)

Guarantee	**Currency**	**Limit**	**Execution amount**	**Use of payment guarantee**
International Polymers Company	USD	15,666,667	15,666,667	Borrowings from financial institutions
Gulf Advanced Cables Insulation Company	USD	5,066,667	5,066,667	Borrowings from financial institutions
Burdur Enerji A.S.	USD	9,296,000	5,878,006	Borrowings from financial institutions
Total	USD	30,029,334	26,611,340	

(7) Collaterals provided for related parties as of December 31, 2020, are as follows:

In thousands of Korean won

Related parry	**Collaterals**	**Collateral amount**	**Borrower**
Eagles Energy Co., Ltd	Investments in associates	21,300,500	Consus New Energy Private Fund Special Asset Trust No.1

(8) As of December 31, 2020, the Group provides a guarantee of USD 131,000,000 for transactions involving sales of modules between Hanwha Q CELLS Japan Co., Ltd. and MARUBENI CORPORATION, JPY 4,610,000,000 for transactions involving sales of modules between Hanwha Q CELLS Japan Co., Ltd. and NTT-F, USD 2,526,518 for transactions involving sales of modules between Hanwha Q CELLS Japan Co., Ltd. and Itochu Corporation, JPY 131,348,708 for transactions involving sales of modules between Hanwha Q CELLS Japan Co., Ltd. and JGC Corporation and JPY 296,000,000 for transactions involving sales of modules between Hanwha Q CELLS Japan Co., Ltd. and GK Rokunohe Solar Park, and finally a JPY 2,111,360,000 contract with Nippon Renewable Energy K.K for sales of modules. In addition, a guarantee of construction has been provided for the contracts of Hanwha Q CELLS EPC USA, LLC with Oberon Solar 1B, LLC. The guaranteed amounts are USD 7,593,219 of USD 37,966,096.

(9) Details of compensation for key executives for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won		2020		2019
Short-term employee benefits	₩	33,541,708	₩	36,157,407
Retirement benefits		6,892,989		6,686,726
Other long-term employee benefits		18,474		11,177
Total	₩	40,453,171	₩	42,855,310

(10) Changes in lease liabilities with related parties for the year ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won		December 31, 2020					
	Company		Beginning balance		Increase decrease		Ending balance
Parent Company:	Hanwha Corporation	₩	12,629,862	₩	5,813,458	₩	18,443,320
Associates and joint ventures:	Hanwha Station Development Co., Ltd.		2,329,517		(2,121,649)		207,868
Conglomerate:	Hanwha LIFE INSURANCE CO., LTD.		81,591,209		27,829,413		109,420,622
	Hanwha General Insurance Co., Ltd.		438,565		(58,335)		380,230
	Hanwha Energy Corporation		-		38,263		38,263
	HANWHA TOTAL ETROCHEMICAL Co., Ltd.		2,680		(2,680)		-
	Hanwha Engineering & Construction Corporation		96,366		(96,366)		-
Total		₩	97,088,199	₩	31,402,104	₩	128,490,303

In thousands of Korean won		December 31, 2019							
	Company		Beginning balance		Changes in accounting policies		Increase decrease		Ending balance
Parent Company:	Hanwha Corporation	₩	-	₩	14,656,507	₩	(2,026,645)	₩	12,629,862
Associates and	YEOCHUN NCC Co., Ltd.		-		3,926		(3,926)		-
joint ventures:	Hanwha General Chemical Co., Ltd.		-		59,754		(59,754)		-
	Hanwha Station Development Co., Ltd.		-		2,987,710		(658,193)		2,329,517
Conglomerate:	Hanwha LIFE INSURANCE CO., LTD.		-		48,579,976		33,011,233		81,591,209
	Hanwha General Insurance Co., Ltd.		-		415,536		23,029		438,565
	HANWHA TOTAL ETROCHEMICAL Co., Ltd.		-		8,301		(5,621)		2,680
	Hanwha Engineering & Construction Corporation		-		462,618		(366,252)		96,366
Total		₩	-	₩	67,174,328	₩	29,913,871	₩	97,088,199

41. CASH FLOWS:

Cash flows generated from operating activities for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won		2020		2019
Income before income tax expense	₩	398,407,651	₩	(217,444,963)
Adjustments:		872,341,619		1,347,713,138
Retirement benefits(*)		66,043,573		62,495,859
Other long-term employee benefits		5,771,013		8,370,825
Depreciation of investment property		2,368,498		2,323,116
Depreciation of property, plant and equipment		517,306,668		485,575,691
Amortization		30,390,019		32,496,875
Depreciation of right-of-use assets		45,276,283		40,786,772
Bad debt expenses		3,350,232		31,431,031
Rental expenses		271,841		103,125
Transfer of provisions		17,776,292		67,173,444
Gain on valuation of derivatives		(18,329,923)		(18,572,128)
Gain on foreign currency translation		(216,226,755)		(117,593,722)
Gain on disposal of investment in associates		(8,871,894)		(9,441,437)
Gain on valuation of FVTPL – financial assets		(58,296)		(432,035)
Gain on disposal of FVTPL – financial assets		(61,832)		(9,094)
Gain on disposal of investment property		(2,698,837)		(2,227,266)
Gain on disposal of property, plant and equipment		(4,676,675)		(5,819,151)
Gain on disposal of intangible assets		(1,128,895)		(469,743)
Gain on disposal of assets held-for-sale		(54,201,706)		(490,661)
Reversal of impairment losses of property, plant and equipment		(1,500,229)		-
Reversal of impairment losses of intangible assets		(672,857)		-
Reversal of allowance		-		(998,253)
Reversal of other bad debt expense		(3,484,522)		(1,554,268)
Gains on bargain purchases		-		(98,867)
Loss on foreign currency translation		163,192,743		130,688,848
Loss on disposal of trade receivables		569,120		1,665,067
Loss on disposal of financial assets at amortized costs		-		10,670
Loss on disposal of FVTOCI – financial assets		18,058		-
Loss on disposal of investment in associates and joint ventures		29,997,790		42,908,966
Impairment loss on investments in associates and joint ventures		-		5,136,587
Loss on valuation of FVTPL – financial assets		520,079		-
Loss on valuation of derivatives		80,664,031		17,275,657
Loss on disposal of investment property		37,671		-
Loss on disposal of property, plant and equipment		30,593,267		17,127,343
Loss on disposal of intangible assets		4,961,099		960,288
Impairment loss of property, plant an equipment		59,961,614		402,411,909
Impairment loss of intangible assets		338,780		33,832,278
Impairment loss of right-of-use assets		7,033,070		25,485,054
Impairment loss of assets held-for-sale		689,561		20,863,332
Other bad debt expense		21,471,387		16,841,214
Loss on inventory abandoned		3,834,106		423,134
Loss on valuation of inventories		28,172,511		44,031,184
Interest income		(24,595,323)		(25,780,340)
Dividends income		(879,802)		(1,944,074)
Interest expense		206,213,219		225,883,880
Gain(loss) on equity method investments		(160,157,880)		(213,756,165)
Others		43,064,520		30,598,193
Changes in operating assets and liabilities:		(129,088,179)		285,431,050
Decrease in trade receivables, net		111,043,046		146,646,485
Decrease in other receivables, net		71,274,905		63,350,406

In thousands of Korean won	2020	2019
Decrease (increase) in inventories	(26,229,200)	38,083,697
Decrease (increase) in other financial assets	15,503,379	(3,508,898)
Decrease (increase) in other current assets	57,443,387	(43,851,016)
Decrease (increase) in other non-current assets	(482,718)	1,252,169
Increase in trade payables	11,806,997	371,837
Increase in other payables	22,163,642	31,796,026
Increase (decrease) in other financial liabilities	(14,040,472)	1,718,735
Increase (decrease) in other current liabilities	(306,654,547)	121,761,385
Increase (decrease) in other non-current liabilities	(884,613)	2,312,175
Payment of severance indemnities	(34,715,665)	(44,418,564)
Decrease in plan assets	5,734,887	12,373,756
Payment of other long-term employee benefits	(3,607,091)	(2,139,041)
Provisions	(22,789,702)	(25,099,219)
Payment of derivatives	(14,654,414)	(15,218,883)
Cash generated from operations	₩ 1,141,661,091	₩ 1,415,699,225

(*) Excludes ₩629 million (2019: ₩346 million) transferred to construction in progress from ₩66,673 million (2019: ₩62,842 million) for the years ended December 31, 2020.

(2) Significant transactions not affecting cash flows for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won	2020	2019
Transfer to the related assets from construction in progress	₩1,086,966,428	₩ 756,950,460
Transfer to supplies from machinery in transit	7,701,610	6,817,225
Changes in other payables due to acquisition of property, plant and equipment	16,353,413	37,107,327
Reclassification of current portion of debentures and borrowings	2,971,925,505	3,384,513,843
Transfer to intangible assets from property, plant and equipment	5,062,025	24,575,238
Transfer to right-of-use assets and lease liabilities	-	233,600,389

(3) Changes in liabilities from financing activities for the years ended December 31, 2020 and 2019 are as follows:

	2020		2019	
In thousands of Korean won	Borrowings and debentures	Dividend payable	Borrowings and debentures	Dividend payable
Beginning balance	₩ 6,368,573,228	₩ -	₩ 5,888,542,382	₩ -
Changes in scope of consolidation	-	-	1,121,000	-
Changes in cash flows from financing activities	(570,963,022)	(36,076,792)	380,789,224	(34,062,382)
Decrease in retained earnings	-	32,576,792	-	32,903,013
Decrease in non-controlling interests	-	3,500,000	-	1,159,369
Others(*)	(109,036,680)	-	98,120,622	-
Ending balance	₩ 5,688,573,526	₩ -	₩ 6,368,573,228	₩ -

(*) Includes effects due to exchange rate changes.

42. OPERATING SEGMENT INFORMATION:

The Group has four strategic business units as reportable segments. Each strategic business unit operates to provide distinguished products and services. As required technical capabilities and marketing strategies are different for these business units, they are separately operated. The chief decision maker reviews internal reports for each strategic business unit on at least a quarterly basis.

Details of segment reporting are as follows:
a. Raw materials: manufacturing and distribution of PE, PVC and CA
b. Manufacturing: manufacturing and distribution of automotive parts
c. Retail: department stores, wholesaling and retailing
d. Photovoltaic: manufacturing and distribution of solar products, such as ingots and modules
e. Others: manufacturing, distribution and leasing

(1) Operating income by each reportable segment for the years ended December 31, 2020 and 2019, is as follows:

In thousands of Korean won		2020							
		Raw materials	**Manufacturing**	**Retail**	**Photovoltaic**	**Subtotal**	**Others**	**Consolidated adjustment**	**Total**
Revenue:									
External revenue	₩	3,326,474,423	751,898,352	452,652,165	3,702,289,424	8,233,314,364	961,693,764	-	9,195,008,128
Inter-segment revenue		283,777,402	95,808,314	33,447,542	2,835,734,662	3,248,767,920	26,683,834	(3,275,451,754)	-
Total	₩	3,610,251,825	847,706,666	486,099,707	6,538,024,086	11,482,082,284	988,377,598	(3,275,451,754)	9,195,008,128
Operating profit(*1)	₩	379,438,068	(12,403,505)	2,816,325	172,218,611	542,069,499	26,953,582	25,160,037	594,183,118
Share of profit of associates and joint ventures									160,157,880
Other non-operating income and expenses									(122,983,507)
Financial income and expenses									(179,814,450)
Income before income tax expense									451,543,041
Depreciation and amortization(*2)		189,805,467	45,440,254	54,715,584	279,004,156	568,965,461	26,848,860	(1,026,228)	594,788,093
Loss on valuation of inventories		4,627,723	6,615,135	1,870,258	13,203,353	26,316,469	1,856,042	-	28,172,511
Bad debt expenses		212,571	2,913,955	905,921	58,660	4,091,107	(563,351)	-	3,527,756
Capital expenditures(*3)		333,137,126	42,338,888	282,052,786	204,543,445	862,072,245	29,931,813	-	892,004,058

(*1) Total segment operating income is different from operating income in the consolidated statements of comprehensive income due to unrecognized income on inter-segment transactions, which were eliminated upon consolidation.
(*2) Total amount of depreciation of property, plant and equipment, investment property and right-of-use assets and amortization of intangible assets.
(*3) Capital expenditures consist of acquisition of property, plant and equipment, investment property and intangible assets.

In thousands of Korean won		2019							
		Raw materials	**Manufacturing**	**Retail**	**Photovoltaic**	**Subtotal**	**Others**	**Consolidated adjustment**	**Total**
Revenue:									
External revenue	₩	3,480,486,627	808,127,129	593,611,715	3,555,160,260	8,437,385,731	1,020,004,266	-	9,457,389,997
Inter-segment revenue		313,283,171	169,239,174	37,628,954	2,595,182,090	3,115,333,389	31,489,630	(3,146,823,019)	-
Total	₩	3,793,769,798	977,366,303	631,240,669	6,150,342,350	11,552,719,120	1,051,493,896	(3,146,823,019)	9,457,389,997
Operating profit(*1)	₩	255,771,518	(30,731,152)	7,555,103	223,483,016	456,078,485	40,018,702	(36,945,866)	459,151,321
Share of profit of associates and joint ventures									213,756,165
Other non-operating income and expenses									(308,103,864)
Financial income and expenses									(196,787,542)
Income before income tax expense									168,016,080
Depreciation and amortization(*2)		163,401,755	50,223,209	44,774,636	241,615,446	500,015,046	26,996,881	(1,049,091)	525,962,836
Loss on valuation of inventories		25,785,618	3,866,512	1,076,679	10,466,945	41,195,754	2,835,430	-	44,031,184
Bad debt expenses		1,427,224	2,156,362	703,908	26,542,281	30,829,775	423,732	-	31,253,507
Capital expenditures(*3)		409,798,424	62,238,338	147,241,438	521,105,522	1,140,383,722	54,122,541	(23,948,770)	1,170,557,493

(*1) Total segment operating income is different from operating income in the consolidated statements of comprehensive income due to unrecognized income on inter-segment transactions, which were eliminated upon consolidation.
(*2) Total amount of depreciation of property, plant and equipment and investment property and amortization of intangible assets.
(*3) Capital expenditures consist of acquisition of property, plant and equipment, investment property and intangible assets.

(2) Segment information as of December 31, 2020 and December 31, 2019, is as follows:

In thousands of Korean won	December 31, 2020							
	Raw materials	Manufacturing	Retail	Photovoltaic	Subtotal	Others	Consolidated adjustment	Total
Segment assets:								
Current assets	₩ 1,098,834,181	₩ 400,213,219	₩ 659,245,742	₩ 3,392,939,426	₩ 5,551,232,568	₩ 537,792,700	₩ (1,130,660,502)	₩ 4,958,364,766
Investment in associates and joint ventures	2,427,894,264	762,043,593	178,620,467	4,943,972,435	8,312,530,759	272,095,930	(5,899,463,141)	2,685,163,548
Other non-current assets	2,750,393,474	599,869,886	1,407,333,716	2,626,499,229	7,384,096,305	347,420,202	(237,724,999)	7,493,791,508
	₩ 6,277,121,919	₩1,762,126,698	₩2,245,199,925	₩ 10,963,411,090	₩ 21,247,859,632	₩1,157,308,832	₩ (7,267,848,642)	₩15,137,319,822
Segment liabilities:								
Current liabilities	₩ 1,056,664,693	₩ 718,627,510	₩1,047,193,709	₩ 3,092,676,579	₩ 5,915,162,491	₩ 448,954,177	₩ (1,112,991,081)	₩ 5,251,125,587
Non-current liabilities	1,324,591,983	318,176,919	478,934,819	1,815,446,653	3,937,150,374	48,436,495	(67,108,125)	3,918,478,744
Total	₩ 2,381,256,676	₩1,036,804,429	₩1,526,128,528	₩ 4,908,123,232	₩ 9,852,312,865	₩ 497,390,672	₩ (1,180,099,206)	₩ 9,169,604,331

In thousands of Korean won	December 31, 2019							
	Raw materials	Manufacturing	Retail	Photovoltaic	Subtotal	Others	Consolidated adjustment	Total
Segment assets:								
Current assets	₩ 1,378,985,682	₩ 459,400,121	₩ 762,472,974	₩ 3,642,031,323	₩ 6,242,890,100	₩ 638,713,741	₩ (1,558,954,309)	₩ 5,322,649,532
Investment in associates and joint ventures	4,559,392,483	381,158,712	196,850,451	2,633,843,192	7,771,244,838	282,648,808	(5,333,076,832)	2,720,816,814
Other non-current assets	2,690,731,667	562,301,328	1,412,574,545	2,731,947,167	7,397,554,707	378,159,069	(138,051,254)	7,637,662,522
	₩ 8,629,109,832	₩1,402,860,161	₩2,371,897,970	₩ 9,007,821,682	₩ 21,411,689,645	₩1,299,521,618	₩ (7,030,082,395)	₩15,681,128,868
Segment liabilities:								
Current liabilities	₩ 1,433,549,914	₩ 712,770,907	₩ 674,976,524	₩ 3,932,228,276	₩ 6,753,525,621	₩ 549,506,915	₩ (1,472,020,148)	₩ 5,831,012,388
Non-current liabilities	1,917,119,264	336,070,913	588,448,826	1,178,215,461	4,019,854,464	33,003,398	(8,588,591)	4,044,269,271
Total	₩ 3,350,669,178	₩1,048,841,820	₩1,263,425,350	₩ 5,110,443,737	₩ 10,773,380,085	₩ 582,510,313	₩ (1,480,608,739)	₩ 9,875,281,659

(3) Details of the consolidation adjustment for assets and liabilities in each sector as of December 31, 2020 and December 31, 2019 are as follows:

In thousands of Korean won	December 31, 2020	December 31, 2019
Consolidated assets		
Segment assets		
Subtotal of assets	₩ 21,247,859,632	₩ 21,411,689,645
Other segment assets	1,157,308,832	1,299,521,618
Consolidated adjustment		
Investment capital offset	(5,899,463,141)	(5,333,076,832)
Internal transaction offset	(1,181,488,806)	(1,481,033,126)
Others	(186,896,695)	(215,972,437)
Total : consolidated assets	₩ 15,137,319,822	₩ 15,681,128,868
Consolidated liabilities		
Segment liabilities		
Subtotal of liabilities	₩ 9,852,312,865	₩ 10,773,380,085
Other segment liabilities	497,390,672	582,510,313
Consolidated adjustment		
Internal transaction offset	(1,311,325,379)	(1,610,869,699)
Deferred tax liabilities	125,304,773	143,957,025
Others	5,921,400	(13,696,065)
Total : consolidated Liabilities	₩ 9,169,604,331	₩ 9,875,281,659

(4) Details of the Group's sales revenues by region for the years ended December 31, 2020 and 2019, and non-current assets by region as of December 31, 2020 and December 31, 2019, are as follows:

1) Regional sales

In thousands of Korean won		2020		2019
Domestic	₩	4,761,373,867	₩	5,209,497,941
Overseas				
China		2,138,093,272		1,931,423,130
Germany		872,905,606		817,337,559
Others		1,422,635,383		1,499,131,367
Subtotal		4,433,634,261		4,247,892,056
Total	₩	9,195,008,128	₩	9,457,389,997

2) Regional non-current assets

In thousands of Korean won		December 31, 2020		December 31, 2019
Domestic	₩	8,021,616,401	₩	8,040,139,019
Overseas				
China		803,081,135		869,120,428
Germany		212,767,049		226,391,454
Others		946,222,493		1,021,367,218
Subtotal		1,962,070,677		2,116,879,100
Total	₩	9,983,687,078	₩	10,157,018,119

(*) Financial assets and deferred income tax assets are excluded from these amounts.

43. SALES REVENUE:

The Group recognized sales revenue of each operating segment by transferring goods and services over time or at a point in time. The classification of revenue for each segment is consistent with operating segment information under K-IFRS 1108. (see Note 42.(1))

In thousands of Korean won		2020		2019
Point in time				
Raw materials	₩	3,322,179,062	₩	3,476,109,949
Manufacturing		751,722,660		807,941,467
Retail		452,652,165		593,611,715
Photovoltaic		3,499,446,434		3,256,619,012
Others		961,150,971		1,016,133,483
Subtotal		8,987,151,292		9,150,415,626
Over time				
Raw materials		4,295,361		4,376,678
Manufacturing		175,692		185,662
Photovoltaic		202,842,990		298,541,248
Others		542,793		3,870,783
Subtotal		207,856,836		306,974,371
Total	₩	9,195,008,128	₩	9,457,389,997

44. NON-CONTROLLING INTERESTS:

(1) Changes in accumulated non-controlling interests

Profit or loss allocated to non-controlling interests, net income attributable to non-controlling interests in equity and accumulated non-controlling interests of subsidiaries that are material to the Group for the years ended December 31, 2020 and 2019 are as follows:

In thousands of Korean won

	2020					
	Percentage of non-controlling interests	Accumulated non-controlling interests at the beginning of the year	Net income allocated to non-controlling interests	Dividends paid to non-controlling interests	Others	Accumulated non-controlling interests at the end of the year
Hanwha Galleria Timeworld Co., Ltd.	0.01%	17,863,926	44,822	-	(17,908,600)	148
Hanwha Holdings(USA), Inc.	20.00%	52,426,717	(5,981,000)	-	(4,861,873)	41,583,844

In thousands of Korean won

	2019					
	Percentage of non-controlling interests	Accumulated non-controlling interests at the beginning of the year	Net income allocated to non-controlling interests	Dividends paid to non-controlling interests	Others	Accumulated non-controlling interests at the end of the year
Hanwha Galleria Timeworld Co., Ltd.	13.08%	62,920,607	(14,677,205)	(519,369)	(29,860,107)	17,863,926
Hanwha Holdings(USA), Inc.	20.00%	52,838,199	(601,587)	-	190,105	52,426,717

(2) Summarized financial information of subsidiaries

Summarized financial information for each non-controlling interest that is material to the Group prior to the elimination of intercompany transactions is as follows:

a. Summarized consolidated statements of financial position

In thousands of Korean won	December 31, 2020	
	Hanwha Galleria Timeworld Co., Ltd.	Hanwha Holdings(USA), Inc.(*)
Current assets	₩ 48,915,391	₩ 347,808,170
Non-current assets	293,560,696	297,681,248
Current liabilities	171,288,546	352,905,523
Non-current liabilities	36,908,535	38,380,775
Equity	134,279,006	254,203,120

(*) Consolidated financial information of intermediate parent company Hanwha Holdings (USA), Inc. and its 13 subsidiaries.

In thousands of Korean won	December 31, 2019	
	Hanwha Galleria Timeworld Co., Ltd.	Hanwha Holdings(USA), Inc.(*)
Current assets	₩ 61,474,759	₩ 316,963,260
Non-current assets	291,413,983	338,530,066
Current liabilities	185,653,374	340,265,297
Non-current liabilities	36,380,939	23,768,693
Equity	130,854,429	291,459,336

(*) Consolidated financial information of intermediate parent company Hanwha Holdings (USA), Inc. and its 16 subsidiaries.

b. Summarized consolidated statements of comprehensive income

In thousands of Korean won	2020	
	Hanwha Galleria Timeworld Co., Ltd.	Hanwha Holdings(USA), Inc.(*)
Revenue	₩ 133,730,390	₩ 522,737,827
Net income for the year	7,035,573	(13,596,908)
Other comprehensive income (loss)	1,532,617	(23,638,652)
Total comprehensive income (loss)	8,568,190	(37,235,560)

(*) Consolidated financial information of intermediate parent company Hanwha Holdings (USA), Inc. and its 13 subsidiaries.

In thousands of Korean won	2019			
	Hanwha Galleria Timeworld Co., Ltd.		Hanwha Holdings(USA), Inc.(*)	
Revenue	₩	263,710,669	₩	586,463,611
Net income for the year		(47,338,925)		12,147,516
Other comprehensive income (loss)		(23,015,748)		7,656,377
Total comprehensive income (loss)		(70,354,673)		19,803,893

(*) Consolidated financial information of intermediate parent company Hanwha Holdings (USA), Inc. and its 16 subsidiaries.

c. Summarized consolidated statements of cash flows

In thousands of Korean won	2020			
	Hanwha Galleria Timeworld Co., Ltd.		Hanwha Holdings(USA), Inc.(*)	
Cash flows from operating activities	₩	14,488,120	₩	53,111,919
Cash flows from investing activities		(17,575,383)		(30,202,441)
Cash flows from financing activities		(9,202,580)		47,612,491
Decrease in cash and cash equivalents		(12,289,843)		70,521,969
Beginning of the year		40,661,344		61,949,305
Effects of foreign exchange rate		-		(9,258,225)
End of the year	₩	28,371,501	₩	123,213,049

(*) Consolidated financial information of intermediate parent company Hanwha Holdings (USA), Inc. and its 13 subsidiaries.

In thousands of Korean won	2019			
	Hanwha Galleria Timeworld Co., Ltd.		Hanwha Holdings(USA), Inc.(*)	
Cash flows from operating activities	₩	56,787,518	₩	45,453,997
Cash flows from investing activities		(25,438,115)		(20,268,100)
Cash flows from financing activities		(33,724,838)		(39,661,859)
Decrease in cash and cash equivalents		(2,375,435)		(14,475,962)
Beginning of the year		43,105,010		73,712,781
Effects of foreign exchange rate		(68,231)		2,712,486
End of the year	₩	40,661,344	₩	61,949,305

(*) Consolidated financial information of intermediate parent company Hanwha Holdings (USA), Inc. and its 16 subsidiaries

45. DISCONTINUED OPERATION:

(1) Decision to discontinue the Polysilicon Business Unit

The board of directors had decided to discontinue the Polysilicon Business Unit on February 20, 2020, expecting that it would be difficult to keep the cost competitiveness due to the decline in polysilicon price and unfavorable cost structures.

(2) Loss from discontinued operations for the years ended December 31, 2020 and 2019, is as follows:

In thousands of Korean won	2020		2019	
Revenue	₩	3,599,880	₩	67,041,638
Cost of Sales		(33,455,334)		(146,003,620)
Selling and administrative expenses		(583,241)		(1,863,671)
Other income(expenses)		(22,696,694)		(304,635,389)
Loss before income tax expense		(53,135,389)		(385,461,042)
Income tax expenses (benifit)		15,283,503		46,398,639
Loss from discontinued operations	₩	(37,851,886)	₩	(339,062,403)

(3) Cash flows from discontinued operations for the years ended December 31, 2020 and 2019, are as follows:

In thousands of Korean won		2020		2019
Cash flows from operating activities	₩	(33,301,241)	₩	(41,757,884)
Cash flows from investing activities		6,855,029		(4,150,768)
Cash flows from financing activities		26,443,523		45,913,052
Net cash flows	₩	(2,689)	₩	4,400

46. SHARE-BASED PAYMENT:

The Group granted 287,102 shares of restrictive stock units(the "RSU") to the executives and paid the cash compensation linked with the share price. The exercise price of the RSU is the same as the fair value of the grant date, and the exercise value of the cash compensation linked with the share price is the fair value as of December 31, 2020. The annual share-based payment would be granted immediately as the executives' service is provided more than 75% period of the fiscal year which the grant date is in, and the maturity is from five to ten years. The Group recognized the compensation expenses of ₩24,259 million for the year ended December 31, 2020.

47. SUBSEQUENT EVENTS:

(1) Merger of Hanwha Galleria Co., Ltd. and split merger of Hanwha City Development Co., Ltd.

On December 8, 2020, the Board of Directors have decided to absorb Hanwha Galleria Co., Ltd. and merge Hanwha City Development Co., Ltd. in installments with the merger and split date of April 1, 2021.

(2) Decision of paid-in capital increase

On December 21, 2020, the Board of Directors have decided to issue 31,414,000 shares of common stock in a general public offering ways after prior allocation of current shareholders. The expected date of listing of new shares is March 18, 2021.

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INDEPENDENT AUDITOR'S REPORT

TO THE BOARD OF DIRECTORS OF
CREDIT GUARANTEE AND INVESTMENT FACILITY

Opinion

We have audited the financial statements of Credit Guarantee and Investment Facility (the "Company"), which comprise the statement of financial position as at December 31, 2019 and the statement of net income, the statement of comprehensive income, statement of changes in members' equity and statement of cash flows for the year then ended and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Company as at December 31, 2019, and its financial performance and its cash flows for the year then ended in accordance with International Financial Reporting Standards ("IFRSs").

Basis for Opinion

We conducted our audit in accordance with International Standards on Auditing ("ISAs"). Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of our report. We are independent of the Company in accordance with the ethical requirements that are relevant to our audit of the financial statements in Singapore, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with IFRSs, and for and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Management is responsible for overseeing the Company's financial reporting process.

Deloitte.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with management regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Deloitte & Touche LLP

Public Accountants and
Chartered Accountants
Singapore

April 14, 2020

CREDIT GUARANTEE AND INVESTMENT FACILITY
(A TRUST FUND OF THE ASIAN DEVELOPMENT BANK)
STATEMENT OF FINANCIAL POSITION
As at 31 December 2019
Expressed in Thousands of United States Dollars

	NOTES	2019	2018
ASSETS			
CASH		3,740	7,041
INVESTMENTS	5	1,176,212	904,555
ACCRUED INTEREST INCOME	5	7,192	5,124
GUARANTEE FEE RECEIVABLE, NET	6	65,647	39,944
RIGHT OF USE – LEASE ASSET, NET	7	172	-
FURNITURE, FIXTURES AND EQUIPMENT, NET	8	217	163
INTANGIBLE ASSETS, NET	9	30	156
OTHER ASSETS	10	1,857	773
TOTAL ASSETS		**1,255,067**	**957,756**
LIABILITIES AND MEMBERS' EQUITY			
LIABILITIES			
GUARANTEE LIABILITY	6	73,204	44,358
UNEARNED INTEREST INCOME – GUARANTEES		548	402
LEASE LIABILITY	7	167	-
ACCOUNTS PAYABLE AND ACCRUED EXPENSES	11	1,745	1,165
OTHER LIABILITIES	12	971	839
TOTAL LIABILITIES		**76,635**	**46,764**
MEMBERS' EQUITY			
CAPITAL STOCK			
PAID-IN CAPITAL	13	1,077,600	859,200
RETAINED EARNINGS		23,162	16,718
RESERVE	14	62,333	45,615
ACCUMULATED OTHER COMPREHENSIVE INCOME			
INVESTMENT REVALUATION RESERVE	5	15,337	(10,541)
TOTAL MEMBERS' EQUITY		**1,178,432**	**910,992**
TOTAL LIABILITIES AND MEMBERS' EQUITY		**1,255,067**	**957,756**

CREDIT GUARANTEE AND INVESTMENT FACILITY
(A TRUST FUND OF THE ASIAN DEVELOPMENT BANK)
STATEMENT OF NET INCOME
For the year ended 31 December 2019
Expressed in Thousands of United States Dollars

	NOTES	2019	2018
REVENUE			
GUARANTEE FEES		12,947	8,735
INTEREST INCOME	15	26,177	19,742
REALIZED GAIN FROM SECURITIES		14	4
COMMISSION - REINSURANCE	18	2,104	698
MISCELLANEOUS INCOME	16	642	352
GROSS REVENUE		**41,884**	**29,531**
EXPENSES			
ADMINISTRATIVE AND OPERATIONAL EXPENSES	17	10,822	8,446
REINSURANCE EXPENSES	18	4,568	2,538
WRITE-OFF EXPENSE	19	-	123
FINANCIAL EXPENSES		89	73
IMPAIRMENT LOSSES	5, 6	2,837	42
MISCELLANEOUS EXPENSES	12	971	839
TOTAL EXPENSES		**19,287**	**12,061**
NET OPERATING INCOME		**22,597**	**17,470**
GAIN (LOSS) FROM FOREIGN EXCHANGE		565	(613)
NET INCOME		**23,162**	**16,857**

CREDIT GUARANTEE AND INVESTMENT FACILITY
(A TRUST FUND OF THE ASIAN DEVELOPMENT BANK)
STATEMENT OF COMPREHENSIVE INCOME
For the year ended 31 December 2019
Expressed in Thousands of United States Dollars

	NOTES	2019	2018
NET INCOME		23,162	16,857
OTHER COMPREHENSIVE INCOME			
ITEM THAT MAY BE RECLASSIFIED SUBSEQUENTLY TO NET INCOME:			
NET UNREALIZED GAIN (LOSS) ON INVESTMENTS MEASURED AT FVTOCI	5	25,878	(1,161)
TOTAL COMPREHENSIVE INCOME FOR THE YEAR		**49,040**	**15,696**

CREDIT GUARANTEE AND INVESTMENT FACILITY
(A TRUST FUND OF THE ASIAN DEVELOPMENT BANK)
STATEMENT OF CHANGES IN MEMBERS' EQUITY
For the year ended 31 December 2019
Expressed in Thousands of United States Dollars

	Paid-in Capital					
	Subscribed Capital	Unpaid Subscription	Retained Earnings	Reserve	Investment Revaluation Reserve	Total Members' Equity
BALANCE, 1 JANUARY 2018	709,000	(6,000)	10,705	34,771	(9,380)	739,096
ADDITIONAL SUBSCRIPTION (NOTE 13)	389,200	(233,000)	-	-	-	156,200
NET INCOME FOR THE YEAR	-	-	16,857	-	-	16,857
ALLOCATION OF PRIOR YEAR INCOME TO RESERVE	-	-	(10,844)	10,844	-	-
OTHER COMPREHENSIVE LOSS						
NET UNREALIZED LOSS ON INVESTMENTS MEASURED AT FVTOCI (NOTE 5)	-	-	-	-	(1,161)	(1,161)
BALANCE, 1 JANUARY 2019	1,098,200	(239,000)	16,718	45,615	(10,541)	910,992
ADDITIONAL SUBSCRIPTION (NOTE 13)	50,800	167,600	-	-	-	218,400
NET INCOME FOR THE YEAR	-	-	23,162	-	-	23,162
ALLOCATION OF PRIOR YEAR INCOME TO RESERVE	-	-	(16,718)	16,718	-	-
OTHER COMPREHENSIVE LOSS						
NET UNREALIZED GAIN ON INVESTMENTS MEASURED AT FVTOCI (NOTE 5)	-	-	-	-	25,878	25,878
BALANCE, 31 DECEMBER 2019	**1,149,000**	**(71,400)**	**23,162**	**62,333**	**15,337**	**1,178,432**

CREDIT GUARANTEE AND INVESTMENT FACILITY
(A TRUST FUND OF THE ASIAN DEVELOPMENT BANK)
STATEMENT OF CASH FLOWS
For the year ended 31 December 2019
Expressed in Thousands of United States Dollars

	NOTES	2019	2018
CASH FLOWS FROM OPERATING ACTIVITIES			
GUARANTEE RELATED INCOME RECEIVED		15,415	10,867
OTHER INCOME RECEIVED		681	315
ADMINISTRATIVE AND OPERATIONAL EXPENSES PAID		(10,849)	(8,789)
REINSURANCE EXPENSES PAID		(3,258)	(1,744)
FINANCIAL EXPENSES PAID		(89)	(73)
NET CASH PROVIDED BY OPERATING ACTIVITIES		**1,900**	**576**
CASH FLOWS FROM INVESTING ACTIVITIES			
PURCHASES OF INVESTMENTS		(3,442,156)	(3,129,101)
MATURITIES OF INVESTMENTS		3,196,742	2,956,781
INTEREST RECEIVED ON INVESTMENTS		22,110	16,948
REALIZED GAIN FROM SECURITIES		13	4
REALIZED LOSS FROM DERIVATIVES		-	(920)
PURCHASE OF FURNITURE AND EQUIPMENT		(141)	(41)
NET CASH USED IN INVESTING ACTIVITIES		**(223,432)**	**(156,329)**
CASH FLOWS FROM FINANCING ACTIVITIES			
CONTRIBUTIONS RECEIVED	13	218,400	156,200
LEASE LIABILITY PAID		(155)	-
NET CASH PROVIDED BY FINANCING ACTIVITIES		**218,245**	**156,200**
EFFECT OF EXCHANGE RATE CHANGES IN CASH		**(14)**	**(5)**
NET (DECREASE) INCREASE IN CASH		**(3,301)**	**442**
CASH AT THE BEGINNING OF THE YEAR		7,041	6,599
CASH AT THE END OF THE YEAR		**3,740**	**7,041**

RECONCILIATION OF NET INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES			
NET INCOME		23,162	16,857
ADJUSTMENTS TO RECONCILE NET INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES:			
DEPRECIATION AND AMORTIZATION – FIXED ASSETS		213	230
DEPRECIATION – ROU ASSETS		145	-
PROVISION FOR EXPECTED CREDIT LOSSES		2,837	42
INTEREST INCOME ON INVESTMENTS		(24,558)	(18,618)
REALIZED GAIN FROM SECURITIES		(14)	(4)
LOSS ON DERIVATIVES		-	(70)
GAIN ON DISPOSAL OF ASSETS		-	(1)
WRITTEN OFF EXPENSE	19	-	123
FX REVALUATION LOSS (GAIN)		19	5
CHANGE IN GUARANTEE FEE RECEIVABLE		(25,819)	(5,581)
CHANGE IN GUARANTEE LIABILITY		26,142	7,081
CHANGE IN UNEARNED INTEREST INCOME		146	141
CHANGE IN ACCOUNTS PAYABLE AND ACCRUED EXPENSES		579	508
CHANGE IN OTHER ASSETS		(1,084)	(276)
CHANGE IN OTHER LIABILITIES		132	139
NET CASH PROVIDED BY OPERATING ACTIVITIES		**1,900**	**576**

CREDIT GUARANTEE AND INVESTMENT FACILITY

(A TRUST FUND OF THE ASIAN DEVELOPMENT BANK)

NOTES TO FINANCIAL STATEMENTS
For the year ended 31 December 2019

NOTE 1— GENERAL INFORMATION

The Credit Guarantee and Investment Facility (CGIF) was established on 12 November 2010. Its main objectives are to promote resilience of the financial markets, and to prevent disruptions to the international financial order, by eliminating currency and maturity mismatches for creditworthy corporations in the region through guarantees to help them access local currency bond markets.

The general principles of organization, management and operations of CGIF are set out in the Articles of Agreement (AoA) as adopted by the Contributors. The Asian Development Bank (ADB) is the Trustee of CGIF and holds in trust and manages CGIF funds and other property only for the purposes of, and in accordance with the provisions of the AoA. Based on the Article 13.2 of the AoA of CGIF, the privileges, immunities and exemption accorded to ADB pursuant to the Agreement Establishing the ADB shall apply to (1) the Trustee, (2) the property, asset, archives, income, operations, and transactions of CGIF.

CGIF will be financed solely from capital contributed by member countries and ADB. CGIF will not borrow from any source to finance its operations except for purposes of cash management.

The Contributors in CGIF are the governments of Association of Southeast Asian Nations, People's Republic of China, Japan, Republic of Korea (ASEAN+3) and ADB. Ownership rights are in proportion to capital contributions. The authorized capital of CGIF is US$1,200,000,000, divided into 12,000 shares with a nominal value of US$100,000 each. As of 31 December 2019, $1,149,000,000 are subscribed and $1,077,600,000 are paid in by the Contributors. Details are discussed in Note 13.

The financial statements were approved by the Board of Directors on 14 April 2020 for presentation to the Meeting of Contributors (MOC) scheduled on 25 May 2020. The financial statements are subject to approval at the MOC.

NOTE 2—APPLICATION OF NEW AND REVISED INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRSs)

Amendments to IFRSs that are mandatorily effective for the current year

In the current period, CGIF has applied the following amendment to IFRSs issued by the International Accounting Standards Board (IASB) that are mandatorily effective for an accounting period that begins on or after 1 January 2019.

IFRS 16 Leases

This new standard introduces new or amended requirements with respect to lease accounting. The standard introduces a comprehensive model for the identification of lease arrangements and their treatment in the financial statements of both lessees and lessors.

This new standard distinguishes leases and service contracts based on whether an identified asset is controlled by a customer. Distinction on operating leases (off-balance sheet) and finance leases (on-balance sheet) is removed for lessee accounting and is replaced by a model where a right-of-use asset and a corresponding liability have to be recognized for all leases by lessees (i.e. all on balance sheet) except for short-term leases and leases of low value assets. The right-of-use asset is initially measured at cost and subsequently measured at cost (subject to certain exceptions) less accumulated depreciation and impairment losses, adjusted for any re-measurement of the lease liability. The lease liability is initially measured at the present value of the lease payments that are not paid at that date. Subsequently, the lease liability is adjusted for interest and lease payments, as well as the impact of lease modifications, among others. Furthermore, the classification of cash flows will also be affected as operating lease payments under IAS 17 are presented as operating cash flows; whereas under the IFRS 16 model, the lease payments will be split into a principal and an interest portion which will be presented as financing and operating cash flows respectively.

In contrast to lessee accounting, IFRS 16 substantially carries forward the lessor accounting requirements in IAS 17, and continues to require a lessor to classify a lease either as an operating lease or a finance lease. Furthermore, extensive disclosures are required by this new standard.

The date of initial application of IFRS 16 for the company is 1 January 2019. Before adoption of this standard, CGIF recognizes rental expense as operating lease. CGIF has made use of the practical expedient available on the transition to IFRS 16 not to reassess whether a contract is or contains a lease. As of reporting date, only ADB lease contract was affected with the application of this new standard. CGIF did no adjustment on the opening balance of the retained earnings at the date of initial application since there is a new lease agreement dated 18 January 2019. CGIF recognized beginning February 2019 (effective date of new lease agreement) in the statement of financial position the right of use – lease asset and the corresponding lease liability amounting to $317 thousand.

CGIF applies the definition of a lease and related guidance set out in the new standard to all lease contracts entered into or modified on or after 1 January 2019. The new definition does not significantly change the scope of contracts that meet the definition of a lease for CGIF.

NOTE 3—SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The financial statements of CGIF have been prepared in accordance with IFRS as issued by the IASB.

The accounting policies adopted are consistent with those of the previous financial year unless stated otherwise.

These financial statements have been prepared using the historical cost basis except for certain assets and financial instruments that are measured at fair values or revalued amounts at the end of each reporting period, as explained in the accounting policies below.

Historical cost is generally based on the fair value of the consideration given in exchange for goods and services.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants on the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or liability, CGIF takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at the measurement date.

In addition, for financial reporting purposes, fair value measurements are categorized into Level 1, 2 or 3 based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirety.

The fair values of CGIF's financial assets and liabilities are categorized as follows:

Level 1: fair values are based on unadjusted quoted prices in active markets for identical assets or liabilities that CGIF can access at the measurement date;
Level 2: fair values are based on inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (that is, as prices) or indirectly (that is, derived from prices); and
Level 3: fair values are based on inputs for the asset or liability that are not based on observable market data (that is, unobservable inputs).

Inter-level transfers from one year to another may occur due to changes in market activities affecting the availability of quoted market prices or observable market data.

CGIF's policy is to recognize transfers in and transfers out of levels as of the end of the reporting period in which they occur.

Cash

Cash represents cash on hand or deposits in a bank account. The carrying amount of these assets is approximately equal to their fair value.

Financial Instruments

Financial assets and liabilities are recognized by CGIF once it becomes a party to the contractual provisions of the instruments.

Financial assets and liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue are added to or deducted from the fair value of the financial assets or financial liabilities (except for financial assets and financial liabilities at fair value through profit or loss), as appropriate, on initial recognition.

Classification of Financial Assets

Financial assets are both measured and classified as amortized cost, fair value through other comprehensive income (FVTOCI) or fair value through profit or loss (FVTPL), on the basis of both: (i) CGIF's business model for managing the financial assets and (ii) the contractual cashflow characteristics of the financial asset.

Amortized Cost and Effective Interest Method

The amortized cost and effective interest method is a method of calculating the amortized cost of a debt instrument and of allocating interest income over the relevant period.

For financial instruments other than purchased or originated credit-impaired financial assets, the effective interest rate is the rate that exactly discounts estimated future cash receipts (including all fees and points paid or received that form an integral part of the effective interest rate, transactions costs and other premiums or discounts), excluding expected credit losses, through the expected life of the debt instrument, or, where appropriate, a shorter period, to the net carrying amount on initial recognition. For purchased or originated credit impaired financial assets, a credit adjusted effective interest rate is calculated by discounting the estimated future cash flows, including expected credit losses, to the amortized cost of the debt instrument on initial recognition.

The gross carrying amount of a financial asset is the amortized cost of a financial asset before adjusting any loss allowance.

Interest income on investment securities and time deposits are recognized as earned and reported net of amortization of premiums and discounts. Interest is accrued, by reference to the principal outstanding at the applicable effective interest rate.

Financial Assets at Amortized Cost

Financial assets at amortized cost are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market and are measured at amortized cost using the effective interest method, less any impairment. This includes cash on hand or deposit in a bank account, time deposits, accrued interest income, guarantee fee receivables, and other receivables.

Investments

All investment securities are considered to be FVTOCI and are reported at fair value. Investment securities are recorded at trade dates. Changes in the carrying amount of these instruments as a result of foreign exchange gains or losses, impairment gains and losses (see below), and interest income are recognized in the profit or loss. All other changes in the carrying amount arising from change in fair value are recognized and accumulated in other comprehensive income under member's equity. Time deposits and certificates of deposits are also classified under investments and are reported at cost which is a reasonable estimate of its fair value.

Derivative Financial Instruments

To manage its exposure to market risks, CGIF may enter into derivative financial instruments, including foreign exchange forward contracts. Derivatives are initially recognized at fair value at the date the derivative contracts are entered into and are subsequently re-measured to their fair value at the end of each reporting period. Changes in the fair value of any derivative instrument are recognized immediately in profit and loss unless the derivative is designated and effective as a hedging instrument.

Guarantee Fee Receivable

Guarantee fee receivables are initially recognized at their fair values in the Statement of Financial Position, which are estimated based on the present value of total fees expected to be received under the guarantees. They are subsequently measured at amortized cost net of any loss allowance.

Impairment of Financial Assets

Financial assets that are classified and measured as amortized cost, FVTOCI, and financial guarantee contracts shall recognize loss allowance based on the expected credit loss (ECL) model. Changes in the carrying amount of the allowance account are recognized in the Statement of Net Income under impairment losses. The amount of expected credit losses is updated at each reporting date to reflect changes in credit risk since initial recognition of the respective financial instrument.

If there has been a significant increase in credit risk of the financial instrument from initial recognition, lifetime ECL is applied to the impairment provision of the item. If the credit risk on the financial instrument has not increased significantly since initial recognition, the loss allowance for that financial instrument is measured at an amount equal to 12-month ECL.

Significant Increase in Credit Risk

In assessing whether there is a significant increase in credit risk of a financial instrument, CGIF compares the risk of a default occurring on the financial instrument at the reporting date with the risk of default occurring at the date of initial recognition. In making this assessment, CGIF considers if the financial instrument has a credit risk rating of B-, or lower, but not in default or it has deteriorated by at least three notches from the issuance date to valuation date, provided that downgrades exclude those that are due to non-credit causes such as, among others, change in scorecards or in rating guidelines.

For CGIF's investments, it is assumed that the credit risk of a financial instrument has not increased significantly since initial recognition if the financial instrument is determined to have a low credit risk (see Notes 4 and 5). A financial instrument is determined to have a low credit risk if (i) it has a low risk of default, (ii) there is a strong capacity for the counterparty to meet its contractual cash flow obligations in the near term and (iii) adverse changes in economic and business conditions in the longer term may, but will not necessarily, reduce the ability of the borrower to fulfil its contractual cash flow obligations.

For financial guarantee contracts, the date that CGIF becomes a party to the irrevocable commitment is considered to be the date of initial recognition for the purposes of assessing impairment. In assessing whether there has been a significant increase in the credit risk since initial recognition of a financial guarantee contract, CGIF considers the changes in the risk that the counterparty will default on the contract.

Definition of Default

For purposes of ECL computation, financial guarantee contracts and guarantee fee receivables shall be in default if the guaranteed-debt issuer defaults on a debt servicing payment, and CGIF's guarantee has been called. An investment is in default if it has been declared by the debt capital market agents particularly the investors' trustee for the investment instrument. Technical defaults, i.e. defaults without missed payments, are not considered defaults for ECL model unless decided otherwise by the GIC.

Credit-impaired Financial Assets

A financial asset is credit-impaired when one or more events that have a detrimental impact on the estimated future cash flows of that financial asset have occurred.

Write-off Policy

A financial asset is written-off when there is information indicating that the counterparty is in severe financial difficulty and there is no realistic prospect of recovery, e.g. when the counterparty has been placed under liquidation or has entered into bankruptcy proceedings. Any recoveries made on a financial asset previously written-off are recognized in profit or loss.

Measurement and Recognition of Expected Credit Losses

The measurement of expected credit losses is a function of the probability of default (PD), loss given default (LGD) and the exposure at default (EAD). CGIF generates point-in-time PDs by considering unbiased and probability weighted scenarios. The Credit Cycle Projection Overlay from S&P Global Market Intelligence (SPGMI) is used in generating these PDs. CGIF uses forecasted or forward-looking values of macroeconomic scenarios with corresponding probability weights. LGD is currently set at 50%. However, for stage 3, assumptions are revised to reflect additional information and realistic assumptions reflective of the default position. As for EAD, for financial assets, this is represented by the gross carrying amount of the assets at reporting date. For financial guarantee contracts, the exposure is the sum (i) of the nominal value of the bond (or debt instrument) guaranteed translated into USD at the reporting date's exchange rate, (ii) one coupon payment, and (iii) past due coupons and administrative cost of recovery (if in stage 3).

Derecognition of Financial Assets

CGIF derecognizes a financial asset only when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another party.

When an FVTOCI is derecognized or disposed of, the unrealized gains or losses previously recognized in accumulated other comprehensive income will be recognized in the Statement of Net Income.

Guarantee Liability

Guarantee liabilities recorded in the Statement of Financial Position represents the unamortized balance of the total present value of the guarantee fees received or expected to be received under the terms of the guarantee. Subsequently, the guarantee liabilities are measured at the higher of the unamortized balance of the amount initially recognized less, when appropriate, cumulative amortization recognized in accordance with IFRS 15, and the amount of loss allowance determined in accordance with the ECL model.

Revenue Recognition for Guarantee Fee

Guarantee fees are recognized upon performance of services and is amortized over the term of the guarantee obligation in accordance with the terms and conditions of the agreement.

Leases

Before 1 January 2019, CGIF's lease are classified as operating lease. Effective 1 January 2019 CGIF recognizes a right of use asset and a lease liability. The right of use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before commencement date, plus any initial direct costs incurred and any estimated costs of dismantling and the cost of any removal and restoration of the underlying asset, less any lease incentives received.

Right of use asset is subsequently depreciated using the straight-line method from the commencement date to the earlier of the end of useful life of the asset or the end of the lease term. In addition, the right of use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease. The lease liability is subsequently measured by increasing the carrying amount to reflect interest on the lease liability (using the effective interest method) and by reducing the carrying amount to reflect the lease payments made. It is remeasured when there is a change in discount rate, or if there is a change on CGIF's decision to extend or terminate the lease contract based on assessment.

Furniture, Fixtures and Equipment

All furniture, fixtures and equipment are stated at historical cost less accumulated depreciation and impairment losses. Historical cost includes expenditures that are directly attributable to the acquisition of the asset and bringing it to its working condition.

Subsequent costs incurred for the purpose of enhancement or improvement shall be added to the carrying amount of the asset when it is probable that the expenditure will cause additional future economic benefit to CGIF. Other subsequent costs like maintenance, repairs and minor betterments are charged to expense.

Depreciation is recognized so as to write off the cost or valuation of assets less their residual values over their useful lives, using straight-line method. The estimated useful lives, residual values and depreciation method are reviewed regularly with the effect of any changes in estimate accounted for on a prospective basis.

The estimated useful lives by asset class are as follows:

Asset Class	Useful Life
Office Furniture and Equipment	
Furniture	7-10 years
Other Office Equipment	4 years
IT and Communication	
Computer	3-4 years
Server	4-5 years
Network	4 years
Communication	7 years
Others	4 years
Leasehold Improvement	Over the lease period

An item of furniture, fixtures, and equipment is derecognized upon disposal. Any gain or loss arising on the disposal of an item of furniture, fixtures, and equipment is determined as the difference between the sales proceeds and the carrying amount of the asset, and is recognized in Statement of Net Income.

Intangible Assets

Intangible assets are composed of acquired information system software licenses that are capitalized on the basis of costs incurred to acquire and bring to use the specific software. These are amortized over a period of 4 years and are carried at cost less accumulated amortization and accumulated impairment losses.

Impairment of Tangible and Intangible Assets

On regular basis, CGIF reviews the carrying amounts of its tangible and intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss. The recoverable amount is the higher of asset's fair value less costs of disposal and the value in use. In assessing the value in use, the estimated future cash flows are discounted to their present value using a discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset is estimated to be less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount. Impairment losses are recognized immediately in profit or loss.

When an impairment loss subsequently reverses, the carrying amount of the asset is increased to the revised estimate of the recoverable amount but only to the extent of the carrying amount of the asset had no impairment loss been recognized in prior years. A reversal of the impairment loss is recognized immediately in the profit or loss.

Offsetting Arrangements

Financial assets and financial liabilities are offset and the net amount presented in the statement of financial position when there is a legally enforceable right to set off the recognized amounts and there is an intention to either settle on a net basis or to realize the asset and settle the liability simultaneously. A right to set-off must be available at the end of the reporting period rather than being contingent on a future event and must be exercisable by any of the counterparties, both in the normal course of business and in the event of default, insolvency or bankruptcy.

Subscribed Capital

Each contributor subscribed by depositing with the Trustee a duly completed Instrument of Acceptance. Contributions are included in the financial statements at historical cost from the date of the signing of the Instrument of Acceptance.

The increase in the authorized capital of CGIF pursuant to Article 4.2 of the AoA was approved by the MOC. Instrument of Subscription (IOS) submitted to the Board Secretary, who acts on behalf of the Trustee, formally confirms the Contributor's intention to subscribe the number of shares specified. The additional subscription will be effective from the date the Board Secretary notifies the subscribing Contributor that the Instrument of Subscription has been received.

Segment Reporting

CGIF is a credit guarantee and investment facility established to develop and strengthen local currency and regional bond markets, so that creditworthy corporations can access those markets and avoid currency and maturity mismatches. CGIF's products and services are unique and are structured and distributed in a uniform manner to its clients. Based on CGIF's operations, CGIF has only one reporting segment.

Fair Value of Financial Instruments

IFRS 13, Fair Value Measurements, defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is market-based measurement, not an entity-specific measurement. A fair value measurement assumes that the transaction to sell the asset or transfer the liability takes place either in the principal market, or in the absence of principal market, in the most advantageous market for the asset or liability.

Functional and Presentation Currency

CGIF's members are from ASEAN+3 and ADB with the subscriptions and redemptions of the shares denominated in the United States dollars (USD). The primary activity of CGIF is guaranteeing bonds that are denominated in local currencies and issued by creditworthy ASEAN+3 corporations in the ASEAN+3 region. The performance of CGIF is measured and reported to the Contributors in USD. The USD is considered as the currency that most faithfully represents the economic effects of the underlying transactions, events and conditions. The financial statements are presented in USD, which is CGIF's functional and presentation currency.

Translation of Currencies

CGIF adopts the use of daily exchange rates for accounting and financial reporting purposes. This allows transactions denominated in currencies other than USD to be translated to the reporting currency using the exchange rates applicable at the time of transactions. Contributions included in the financial statements during the period are recognized at applicable exchange rates as of the respective dates of commitment. At the end of each accounting period, translations of asset and liabilities which are not denominated in USD are adjusted using the applicable rates of exchange at the end of the reporting period. These translation adjustments are accounted for as unrealized foreign exchange gains or losses and are charged to operations in the Statement of Net Income.

Critical Accounting Judgements and Key Sources of Estimation Uncertainty

In the application of CGIF's accounting policies, which are described above, management is required to make judgements, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Since the estimates are based on judgment and available information, actual results may differ and might have a material impact on the financial statement.

The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the financial statements are included in Notes 5, 6, and 7. This includes fair value measurements and valuation processes.

As explained in accounting policies above, ECL are measured as an allowance equal to 12-month ECL for stage 1 assets, or lifetime ECL for stage 2 or stage 3 assets. An asset moves to stage 2 when its credit risk has increased significantly since initial recognition. IFRS 9 does not define what constitutes a significant increase in credit risk. In assessing whether there is a significant increase in credit risk, CGIF takes into account qualitative and quantitative reasonable and supportable forward-looking information.

Furthermore, in calculating the loss allowance, CGIF uses the Credit Cycle Projection Overlay from SPGMI to generate the point in time probabilities of default (PIT-PD). Unbiased and probability weighted scenarios are considered in generating these PIT-PDs. For stage 3, PD will be 100%. LGD shall be set at 50% for stages 1 and 2. For stage 3, LGD shall follow the same guidelines as stage 2, but with revised assumption to reflect additional information and realistic assumptions reflective of the actual position on default.

NOTE 4—RISK MANAGEMENT

In CGIF, risk management and internal control go hand-in-hand, and are representations of each other. Internal control and risk management are intended to facilitate the implementation of effective and efficient operations, attainment of business objectives, management of risks, and the safeguarding of CGIF's Contributors' investment in CGIF.

Risk management in CGIF covers all perceived risk exposures, particularly exposures to credit risk, market risk, liquidity risk, and operational risk. These risks are managed pursuant to Operational Policies, and Risk Management Framework (RMF), approved by CGIF's Board of Directors. The Board's Internal Control and Risk Management Committee and Risk Management Department (RMD) cause the functional units to identify, measure, monitor, control and report risks. The Board, management's Guarantee and Investment Committee, and the CEO oversee and regulate both risk taking and risk management. Appetite for risk taking as expressed in operational controls and risk exposure limits emanates from the Board.

CGIF endeavors to conform to international best practices in risk management. CGIF subscribes to the idea that informed risk-taking presents opportunities. CGIF takes risks that offer commensurate rewards. Risk-taking roles are independent of risk management roles. A positive risk management culture is fostered – the system clarifies what conduct and procedures are acceptable, and which ones are not; encourages initiatives that improve the management of risks; promotes transparency, individual responsibility and accountability.

Categories of Financial Instruments

Categories of financial instruments at gross carrying amount as of 31 December 2019 and 2018 are as follows (in $'000):

	2019	2018
Financial assets		
FVTOCI	1,055,212	845,262
Financial assets at amortized cost	199,030	111,852
Financial liabilities		
Financial liabilities at amortized cost	2,644	1,956
Lease liabilities	167	-

Credit Risk

As per CGIF's Treasury Risk Management Guidelines, CGIF's long term investments are restricted to those with the international ratings of AA- or better, with the exception of investments in contributor countries' government-related securities that may be rated as low as A+. Short-term investments should be rated no lower than A-1. Credit risk in these investments is considered low.

Credit concentration of investments are controlled by policy limits on exposure per issuer, per type of issuer, and per country rating grade. CGIF controls the concentration of investment per country of issuer. The lower the country sovereign rating grade, the lower the investment concentration limit – 0% of CGIF capital for countries rated A or lower; up to 30% of CGIF capital for countries rated AAA, except for the US where the investment concentration limit is 100% of CGIF capital. Investments in short-term money market instruments are excluded in reckoning country concentration against country limits.

CGIF only considers for credit guarantee bond issuers that hurdle a policy maximum acceptable risk rating. Acceptable borrowers undergo a stringent due diligence review. Guarantee Underwriting Proposals (GUPs) require approval of management's Guarantee and Investment Committee (GIC) and of the Board of Directors (Board). In aid of informed decisions on GUPs, the Board is furnished with credit review notes from CGIF's RMD and from an external advisor to the Board. As of 31 December 2019, CGIF's guarantee portfolio had a weighted average risk rating of BB.

CGIF controls concentrations of credit risk. Guarantee exposure to any country and to any currency is capped at 20% and 40%, respectively, of CGIF's Maximum Guarantee Capacity (MGC), where MGC is the product of (a) total paid-in capital of CGIF plus retained earnings, less credit loss reserves and foreign exchange loss reserves, less all illiquid investments and (b) the maximum leverage ratio of 2:5:1. CGIF's maximum leverage ratio, currently 2.5:1, is determined by the MOC on the recommendation of the CGIF Board. Aggregate guarantee exposure to any single Intermediate Jurisdiction (i.e., a country outside of the ASEAN+3 where a guaranteed borrower is registered) and aggregate exposure to all Intermediate Jurisdictions are limited to 20% and 40%, respectively, of CGIF's MGC. Aggregate guarantee exposure to any sector and to any industry is limited to 40% and 20%, respectively, of MGC. In any country, exposure to any industry may not exceed 10% of MGC. Single borrower exposures, and single group exposures, may not exceed 20% of CGIF's paid-in capital. CGIF's leverage ratio and concentration ratios are reported quarterly to the CGIF Board.

The carrying amount of financial assets recorded in the financial statements and the guarantee obligations disclosed in Note 6 represent CGIF's maximum exposure to credit risk.

A reinsurance treaty whereby CGIF cedes to a consortium of reinsurers agreed portions of credit risk from bond issuers reduces CGIF's exposure to credit risk from its guarantee portfolio. Please refer to Note 18.

Market Risk

Market risk represents the potential loss that could result from adverse market movements. The main components of market risk for CGIF are interest rate risk and foreign exchange risk.

Interest rate risk is primarily the exposure of income on assets to fluctuation in interest rates. An objective of interest rate risk management in CGIF is the generation of overall interest income that is not overly sensitive to changes in interest rates, but yet responsive to general market trends.

CGIF's Treasury Risk Management Guidelines restrict CGIF's investment portfolio duration to no more than 5 years. The duration of CGIF's portfolio is the market value-weighted average of effective duration of all outstanding investments. As of 31 December 2019, CGIF's investment portfolio had remaining maturities of up to 9.84 years (5.75 years - 31 December 2018), with duration of 3.08 years (2.61 years - 31 December 2018). CGIF's investments are sensitive to interest rate movements. For CGIF's fixed income portfolio at 31 December 2019, it is estimated that a 100 basis points upward/downward parallel shift in the yield curve would cause an unrealized loss/gain of about $36.2 million ($23.7 million - 31 December 2018).

The following tables presents CGIF's foreign exchange exposure of monetary assets and liabilities (in '000) as at the end of the reporting period:

	2019			
	Asset		Liabilities	
	Local Currency	USD Equivalent	Local Currency	USD Equivalent
VND	839,101,505	36,210	-	-
SGD	12,953	9,564	-	-
THB	91,548	3,035	683	23
PHP	155,260	3,055	13,478	265
MYR	44	11	-	-
IDR	1,281	-	-	-
LAK	539	-	-	-
TOTAL		51,875		288

	2018			
	Asset		Liabilities	
	Local Currency	USD Equivalent	Local Currency	USD Equivalent
PHP	236,739	4,469	4,415	83
MYR	44	11	42	10
CNY	-	-	14	2
THB	123,072	3,777	2,490	77
SGD	2,509	1,829	3	2
VND	422,592,072	18,160	-	-
LAK	548	-	-	-
TOTAL		28,246		174

CGIF is exposed to foreign exchange risk underlying foreign currency payables and receivables relating mostly to CGIF's guarantee operation. Until November 2017, CGIF policy required the hedging of foreign exchange risk relating to guarantee fee receivables to the extent possible. Subject to the availability of hedge markets, transaction costs and administrative cost, some foreign exchange risk exposure were left without hedge. Since November 2017, the hedging of foreign exchange risk on guarantee fee receivables is no longer required and is done on a case-by-case basis. Accordingly, the foreign exchange exposure limit was removed. For CGIF's foreign exchange exposure at 31 December 2019, it is estimated that a 10% adverse change in FX rates in the relevant foreign currency exposure will cause an instant loss of $4.70 million ($2.81 million - 31 December 2018).

Counterparty Risks

As CGIF may utilize derivative instruments to hedge risk exposure, CGIF may be exposed to counterparty risk, i.e., the risk that counterparties to derivatives transactions may be unable to meet its obligation to CGIF. Given the nature of CGIF's operations, it is not possible to eliminate counterparty credit risk. However, CGIF minimizes this risk by executing transactions only with eligible counterparties pursuant to CGIF's RMF, Treasury Risk Management Guidelines.

In as much as offsetting arrangements are concerned, CGIF has in place a number of ISDA Master Agreements [and Global Master Repurchase Agreements] with financial institutions that are supported by industry legal opinions confirming the enforceability of the close-out netting provisions included in such agreements.

Liquidity Risk

Liquidity risk can arise if CGIF is unable to provide funds to meet its financial and operational commitments. CGIF maintains adequate liquidity resources to meet the cash requirements and potential calls on the guarantees issued. CGIF assesses and monitors the availability of its liquid assets on a quarterly basis. CGIF conducts quarterly tests of its liquidity under stress scenarios where CGIF has to meet lumpy obligations related to claims on guarantees, and raise funds from various sources. A liquidity stress test conducted on CGIF's guarantee portfolio as of 31 December 2019 and 2018 indicates that CGIF can generate the liquidity that will be required to meet payment obligations in the event of guarantee claims on CGIF.

The following table details (in $'000) the maturity profile of financial instruments. The maturity analysis is based on the remaining period from the end of the reporting date to the contractual maturity date or the expected date the financial asset will be realized and the financial liability will be settled.

	2019					
	Less than 1 month	1 to 3 months	More than 3 months to 1 year	More than 1 year to 5 years	More than 5 years	Total
Financial assets						
FVTOCI	20,003	-	45,034	776,153	214,022	1,055,212
Financial assets at amortized cost	10,882	57,888	72,864	43,294	14,102	199,030
Total financial assets	30,885	57,888	117,898	819,447	228,124	1,254,242
Financial liabilities						
Financial liabilities at amortized cost	227	432	1,724	261	-	2,644
Lease liability	14	27	126	-	-	167
Total financial liabilities	241	459	1,850	261	-	2,811
Net maturity gap	30,644	57,429	116,048	819,186	228,124	1,251,431

	2018					
	Less than 1 month	1 to 3 months	More than 3 months to 1 year	More than 1 year to 5 years	More than 5 years	Total
Financial assets						
FVTOCI	33,982	29,992	53,780	640,213	87,295	845,262
Financial assets at amortized cost	66,864	1,874	8,319	30,502	4,293	111,852
Total financial assets	100,846	31,866	62,099	670,715	91,588	957,114
Financial liabilities						
Financial liabilities at amortized cost	159	657	886	254	-	1,956
Total financial liabilities	159	657	886	254	-	1,956
Net maturity gap	100,687	31,209	61,213	670,461	91,588	955,158

Capital Resources

CGIF's capital resources comprise of capital stock, retained earnings and reserves. The primary objective in the management of capital resources is to protect CGIF's capital by maintaining a conservative exposure to market risk, credit risk and liquidity risk. CGIF strives to maximize returns on the invested asset portfolio while minimizing volatility of investment income. CGIF's capital resources are placed with the Trustee, ADB.

Capital Adequacy

CGIF deems that it has adequate capital to underwrite credit guarantees for as long as its capital exceeds total capital charge; alternatively, for as long as the capital-to-capital charge ratio – capital adequacy ratio (CAR) – exceeds 1.1. CGIF's CAR at 31 December 2019 was at 3.96 (4.01 – 31 December 2018).

Operating Risk

CGIF manages operating risks through quarterly risk and control self-assessments (RCSAs) by each department of the enterprise. Through RCSAs, CGIF's operating units are directed to identify their operating risks, and assess the significance of each of these. The significance of an identified operating risk is a function of two attributes – the likelihood and the impact of occurrence of the operating risk event. Measurable risk indicators, and corresponding control limits, are assigned to each operating risk. Results of RCSAs are reported to the CEO and to the Board's Internal Control and Risk Management Committee.

NOTE 5—INVESTMENTS

This account is composed of the following (in $'000):

	2019	2018
Certificates of Deposit	45,000	-
Time Deposits	76,000	59,293
FVTOCI		
Government-related-entity or government-guaranteed obligations (GGO)	946,055	741,686
Corporate obligations	109,157	103,576
Total FVTOCI	1,055,212	845,262
Total Investment	1,176,212	904,555

ADB, as the Trustee, manages capital resources in accordance with CGIF's Treasury Risk Management Guidelines prepared in consultation with ADB and approved by the CGIF Board of Directors.

ADB follows the same process and internal controls to value the investment securities as ADB's portfolio. The data management unit in ADB's treasury department is responsible for providing the valuation in accordance with the business process. In instances where ADB relies primarily on prices from third party pricing information, there are procedures in place to validate the appropriateness of those values in determining the hierarchy levels. This involves evaluating the nature of prices provided by third party pricing sources to determine if they are indicative or binding prices.

The annualized rate of return on the average investments held during the period ended 31 December 2019, based on the portfolio held at the beginning and end of each month without the effect of change in fair value was 2.34% (2.07% - 31 December 2018)

The estimated fair value and amortized cost of the investments by contractual maturity as of 31 December 2019 and 2018 are as follows (in $'000):

	2019		2018	
	Estimated Fair Value	Amortized Cost	Estimated Fair Value	Amortized Cost
Due in less than one year	186,036	186,132	177,046	177,499
Due in one to five years	776,153	764,089	640,214	650,149
Due more than five years	214,023	210,688	87,295	87,465
TOTAL	1,176,212	1,160,909	904,555	915,113

Fair Value Disclosure

The fair value of the investments as of 31 December 2019 and 2018 are as follows (in $'000):

	2019	Fair Value Measurements		
		Level 1	**Level 2**	**Level 3**
Certificates of Deposits	45,000	-	45,000	-
Time Deposits	76,000	-	76,000	-
Government-related-entity or GGO	946,055	916,604	29,451	-
Corporate obligations	109,157	109,157	-	-

	2018	Fair Value Measurements		
		Level 1	**Level 2**	**Level 3**
Time Deposits	59,293	-	59,293	-
Government-related-entity or GGO	741,686	741,686	-	-
Corporate obligations	103,576	103,576	-	-

If available, active market quotes are used to assign fair values to investment securities. These include government-related-entity/government-guaranteed obligations and corporate obligations. For investments where active market quotes are not available, investments are categorized as Level 2 or Level 3, and valuation is provided by independent valuation services. Time deposits and certificates of deposits are reported at cost, which approximates fair value.

There were no inter-level transfers during the years ended 31 December 2019 and 2018.

Impairment Losses

For purposes of impairment assessment, the FVTOCI in CGIF's portfolio are considered to have low credit risk as the counterparties of these investments have a minimum A+ credit rating for government related bonds of Contributor countries and AA- for all others. Accordingly, the loss allowance for these financial instruments is measured at an amount equal to 12-month ECL.

Impairment losses do not reduce the carrying amount of the debt instruments at FVTOCI in the statement of financial position, which remains at fair value. The balance at the end of the year reflected below is included in the Accumulated other comprehensive income.

The movements in the credit loss allowance are as follows (in $'000):

	2019	2018
Balance at beginning of the year	17	11
Loss allowance recognized in profit or loss under impairment losses during the year on:		
Assets originated	14	7
Reversals	(2)	(1)
Change in credit risk	5	-
	17	6
Balance at end of the year	34	17

Accrued Interest Income

The details of accrued interest income from investments as of 31 December 2019 and 2018 are as follows (in $'000):

	2019	2018
FVTOCI	6,650	5,008
Certificates of Deposits	338	-
Time Deposits	204	116
TOTAL	7,192	5,124

NOTE 6 – GUARANTEES

As of 31 December 2019, CGIF has issued guarantees covering bonds denominated in Thai Baht, Singapore Dollar, Vietnamese Dong and Philippine Peso. The total outstanding amount of the guarantees issued under the related bonds was $2,090 million as of 31 December 2019 ($1,410 million – 31 December 2018). The guarantees are inclusive of coupon payments.

Below is the summary of the outstanding guarantees by currency (in '000):

31 December 2019				
	Local Currency			USD Equivalent
	Principal	Coupon	Total Obligation	of Total Obligation
VND	15,718,000,000	7,257,415,977	22,975,415,977	991,473
SGD	695,000	135,491	830,491	613,225
THB	9,100,000	1,031,104	10,131,104	335,912
PHP	6,600,850	1,009,670	7,610,520	149,740
				2,090,350

	31 December 2018			
	Local Currency			USD Equivalent
	Principal	Coupon	Total Obligation	of Total Obligation
VND	9,700,000,000	3,720,901,251	13,420,901,251	576,747
SGD	475,000	96,597	571,597	416,585
THB	6,880,000	917,338	7,797,338	239,300
PHP	6,979,600	1,268,175	8,247,775	155,698
IDR	300,000,000	9,198,000	309,198,000	21,211
				1,409,541

As of 31 December 2019, a guarantee liability of $73.2 million ($44.4 million - 31 December 2018) was reported on the Statement of Financial Position. The unamortized balance of guarantee liabilities is compared vs the required ECL on a per instrument basis. As of 31 December 2019 and 2018, and the reported liability is composed of the following (in $'000):

	2019	2018
Unamortized balance of present value of total guarantee fees	70,500	44,358
Additional provision for ECL	2,704	-
TOTAL	73,204	44,358

As of 31 December 2019, additional provision for ECL was provided for one account that was classified into stage 2. The total amount of loss allowance for guarantee obligations determined through ECL amounted to $7.8 million as of 31 December 2019 ($3.2 million – 31 December 2018).

The reported guarantee fee receivable of $65.6 million represents the present value of the stream of total guarantee fees expected to be received for the guarantee outstanding as of 31 December 2019 ($39.9 million – 31 December 2018) net of allowance for credit losses.

As of 31 December 2019 and 2018, all of CGIF's future guarantee fee receivables are classified as Level 3 within the fair value hierarchy.

The Finance Department is responsible for determining and reporting the fair value of guarantees reported in the Statement of Financial Position. Future guarantees are stated at discounted present value using significant unobservable inputs such as discount rates applicable to individual guarantee contracts that are internally determined and are classified under Level 3. The valuation technique and significant unobservable quantitative inputs for guarantee receivables classified as Level 3 as of 31 December 2019 and 2018 were summarized below:

	Valuation Technique	Unobservable Input	Range 2019	Range 2018
Guarantee receivable	Discounted cash flows	Discount rates	3.15% to 9.70%	3.15% to 10.02%

There were no inter-level transfers during the year ended 31 December 2019 and 2018.

Impairment Losses

The movements in the credit loss allowance for guarantee fees receivable are as follows (in $'000):

	2019	2018
Balance at beginning of the year	164	128
Loss allowance recognized in profit or loss under impairment losses during the year on:		
Assets originated	128	48
Reversals	(31)	(20)
Additions	19	8
	116	36
Balance at end of the year	280	164

NOTE 7—LEASES

As of 31 December 2019, only CGIF's office rental contract with ADB qualifies under the new lease accounting. CGIF recognized right of use- lease asset. This is initially measured at cost and is subsequently depreciated on a straight-line basis for two years. The estimated life of the asset is based on the terms of the lease contract. The details of the amount presented in the Statement of Financial Position are as follows:

Gross amount	317
Accumulated depreciation	(145)
NET Balance at 31 December 2019	172

Depreciation – ROU Lease Asset charged for the period is reported under administrative expenses in the Statement of Net Income.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date. The lease payment includes fixed payment and in-substance fixed payments for the amortization of alteration cost. The discount rate used is the latest bank average domestic lending rate (annual) published by the Central Bank of the Philippines (BSP) upon date of commencement. Lease liability is subsequently measured by increasing the carrying amount to reflect interest on the lease liability (using the effective interest method) and by reducing the carrying amount to reflect the lease payments made. Interest expense is reported under financial expenses in the Statement of Net Income.

NOTE 8—FURNITURE, FIXTURES AND EQUIPMENT - NET

The details of this account are as follows (in $'000):

	Office Furniture and Equipment	IT and Communications	Building Improvement	TOTAL
Cost				
1 January 2018	300	272	5	577
Additions	-	36	-	36
Disposals	(4)	(42)	-	(46)
31 December 2018	296	266	5	567
Additions	56	83	-	139
Disposals	(3)	-	-	(3)
31 December 2019	349	349	5	703
Accumulated Depreciation/Amortization				
1 January 2018	(179)	(190)	(5)	(374)
Depreciation	(37)	(39)	-	(76)
Amortization	-	-	-	-
Disposals	4	42	-	46
31 December 2018	(212)	(187)	(5)	(404)
Depreciation	(36)	(49)	-	(85)
Amortization	-	-	-	-
Disposals	3	-	-	3
31 December 2019	(245)	(236)	(5)	(486)
NET, 31 December 2019	104	113	-	217
NET, 31 December 2018	84	79	-	163

Depreciation is reported under administrative expenses in the Statement of Net Income.

NOTE 9—INTANGIBLE ASSETS - NET

Intangible assets are composed of Information systems software that is capitalized. The details of this account are as follows (in $'000):

	Information Systems Software
Cost	
1 January 2018	1,185
Additions	6
Disposals	(221)
31 December 2018	970
Additions	2
Disposals	-
31 December 2019	972
Accumulated Depreciation/Amortization	
1 January 2018	(882)
Amortization	(153)
Disposals	221
31 December 2018	(814)
Amortization	(128)
Disposals	-
31 December 2019	(942)
NET, 31 December 2019	30
NET, 31 December 2018	156

The amortization is reported under administrative expenses in the Statement of Net Income.

NOTE 10—OTHER ASSETS

Other assets pertain to commission receivable from reinsurance, advances made by CGIF for staff benefits, prepaid expenses, subscriptions and licenses as well as security deposit.

NOTE 11—ACCOUNTS PAYABLE AND ACCRUED EXPENSES

This account consists of accruals for reinsurance expenses, the corresponding unamortized portion of the commission income from reinsurance, and accounts payable and accrual of administrative and operating expenses incurred but not yet paid.

NOTE 12—RELATED PARTY TRANSACTIONS

CGIF utilizes certain services from ADB including treasury service as may be agreed with the Chief Executive Officer from time to time.

Provision for ADB's administration fee, amounting to $0.97 million ($0.84 million – 2018), recorded in other miscellaneous expense was accrued in other liabilities. ADB's administration fee is equivalent to 10 bps of contributions received. The amount of $0.97 million pertaining to ADB's administration fee for 2019 will be settled subsequently in April 2020. Key management personnel total compensation of short-term employee benefits for 2019 amounted to $2.88 million ($2.78 million – 2018).

NOTE 13—PAID-IN CAPITAL

The increase in CGIF's authorized capital to 12,000 shares from 7,000 shares at $100,000 per share was approved by the Contributors on 6 December 2017 per Resolution No. 2017-S-01. Each Contributor shall pay in full or in installments for the number of shares by the date indicated in the IOS. However, in case where payment cannot be made by a Contributor during the subscription payment period, the subscription is renounced and forfeited after one hundred and twenty (120) days following the last due date indicated in the IOS or the end of 2023, as applicable, or such later date as the Board may determine.

The authorized capital stock of CGIF as of 31 December 2019 and 2018 are as follows (in $'000):

	2019	2018
Authorized capital (12,000 shares)	1,200,000	1,200,000
Subscribed	1,149,000	1,098,200
Unsubscribed	51,000	101,800
Total authorized capital	1,200,000	1,200,000
Subscribed capital comprises:		
Amounts received	1,077,600	859,200
Amounts not yet due	71,400	239,000
Total subscribed capital	1,149,000	1,098,200

The AoA prescribe that shares shall be allocated to Contributors only after full payment has been received. Therefore, only paid-in capital shall be taken into account when calculating each Contributor's voting rights.

The details of CGIF capital as of 31 December 2019 and 2018 are as follows (in $'000 except for number of shares):

	31 December 2019			
Contributor	No. of shares	Subscribed	Amount received	Amount not yet received
Asian Development Bank	1,800	180,000	180,000	-
ASEAN Member Countries				
Brunei Darussalam	56	5,600	5,600	-
Cambodia	2	200	200	-
Indonesia	216	21,600	12,600	9,000
Lao People's Democratic Republic	2	200	200	-
Malaysia	176	17,600	12,600	5,000
Myanmar, Republic of the Union of	1	100	100	-
Philippines	216	21,600	21,600	-
Singapore	216	21,600	21,600	-
Thailand	216	21,600	12,600	9,000
Viet Nam	19	1,900	1,100	800
	1,120	112,000	88,200	23,800
Others (non-ASEAN Member Countries)				
China, People's Republic of	3,428	342,800	342,800	-
Japan Bank for International Cooperation	3,428	342,800	342,800	-
Korea, Republic of	1,714	171,400	123,800	47,600
	8,570	857,000	809,400	47,600
Total	11,490	1,149,000	1,077,600	71,400

	31 December 2018			
Contributor	No. of shares	Subscribed	Amount received	Amount not yet received
Asian Development Bank	1,300	130,000	130,000	-
ASEAN Member Countries				
Brunei Darussalam	56	5,600	5,600	-
Cambodia	2	200	200	-
Indonesia	216	21,600	12,600	9,000
Lao People's Democratic Republic	2	200	100	100
Malaysia	176	17,600	12,600	5,000
Myanmar, Republic of the Union of	1	100	100	-
Philippines	216	21,600	19,900	1,700
Singapore	216	21,600	21,600	-
Thailand	216	21,600	12,600	9,000
Viet Nam	11	1,100	1,100	-
	1,112	111,200	86,400	24,800

Contributor	No. of shares	Subscribed	Amount received	Amount not yet received
Others (non-ASEAN Member Countries)				
China, People's Republic of	3,428	342,800	200,000	142,800
Japan Bank for International Cooperation	3,428	342,800	342,800	-
Korea, Republic of	1,714	171,400	100,000	71,400
	8,570	857,000	642,800	214,200
Total	10,982	1,098,200	859,200	239,000

Of the $218.4 million increase in paid-in capital in 2019, $167.6 million was from the additional subscription in previous years and $50.8 million was from additional subscription in 2019.

NOTE 14— RESERVE

The allocation of 2018 net income in retained earnings to Reserve was approved by the Contributors at the 16 May 2019 Meeting of Contributors, per Resolution No. 2019-A-04.

NOTE 15— INTEREST INCOME

Interest income for the period is composed of (in $'000):

	2019	2018
FVTOCI	21,747	16,692
Time Deposits	2,473	1,927
Guarantee	1,594	1,088
Certificates of Deposits	339	-
Others	24	35
	26,177	19,742

NOTE 16—MISCELLANEOUS INCOME

Miscellaneous income includes reimbursements of legal and out of pocket expenses, gain/loss from disposal of fixed assets, commission from reinsurer and other income which is not related to the normal operations of CGIF. Total miscellaneous income for 2018 includes Fair value changes – derivatives which was previously reported as a separate line item (none in 2019).

NOTE 17— ADMINISTRATIVE AND OPERATIONAL EXPENSE

Administrative and operational expense for the period is composed of (in $'000):

	2019	2018
Staff Related Expenses	6,771	5,707
Financial and Legal Services	1,444	980
Short Term Staff Consultants	890	374
Business Travel	363	369
Recruitment Expense	335	116
Depreciation and Amortization – Fixed Assets	213	229
Depreciation – ROU Assets	145	-
MOC and BOD Expenses	185	157
Rental Expense	12	133
Others	464	381
	10,822	8,446

NOTE 18— REINSURANCE

CGIF has entered into a quota share reinsurance treaty with a consortium of reinsurers effective 1 October 2016. Under the reinsurance treaty, CGIF's outstanding guarantees as of 1 October 2016 and new guarantees issued from then to end-2017 were ceded to the consortium up to the agreed portion. For guaranteed bonds with long tenors, special approvals from the consortium may be required for inclusion in the treaty.

The reinsurance treaty was renewed on 7 December 2017 and shall apply to Guarantees issued during the 12-month period commencing on 1 January 2018 and expiring on 31 December 2018. It was further renewed on 3 January 2019 and was applied to the 12-month period covering 1 January 2019 to 31 December 2019. Before end – 2019, another renewal of treaty was signed to cover the 1-year period of 2020.

Reinsurance expense includes the quota share of the premium to be ceded to the consortium of reinsurers based on the reinsurance treaty. These expenses are accrued in the books over the period it covers. Quarterly statements of account (SOA) for the premium to be ceded are issued within 30 days from the end of each quarter and payments for such are due 15 days after the issuance of SOA.

By the end of 2019, the commission from reinsurance reported in the statement of profit and loss represents the commission income of 27.5% for the premium ceded and profit commission on the annual profit derived from all the fees ceded under a treaty. CGIF recognized profit commission of 20% on the first treaty.

In March 2019, CGIF has entered into a risk sharing agreement with KEXIM in relation to one guarantee account. KEXIM's proportion is equal to 50% of the guaranteed amount and as such, participation fee amounting to 50% of the guarantee fees will be ceded. The participation fee is paid to KEXIM at the same day CGIF receives the guarantee fee from the account.

NOTE 19— WRITE-OFF EXPENSE

Write-off expense represents a write-off of the withholding tax receivables that were deducted from guarantee fee payments of clients pending the clarification of tax exempt status. As management judged tax exemption was not applicable to these receivables, these accounts were directly written-off in the statement of financial position at the end of the year. There were no accounts written-off as of 31 December 2019 ($0.12 million – 31 December 2018).

NOTE 20— SUBSEQUENT EVENTS

Based on CGIF Management's assessment, COVID-19 pandemic outbreak may adversely affect some accounts in CGIF guarantee portfolio. However, the magnitude of the financial impact will depend on how the outbreak evolves, which remains uncertain as of the date of the report.

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