HANERGY THIN FILM POWER GROUP LIMITED
漢能薄膜發電集團有限公司

(Incorporated in Bermuda with limited liability)

(Stock code: 566)

ANNOUNCEMENT OF 2018 RESULTS

The board of directors (the "**Board**") of Hanergy Thin Film Power Group Limited (the "**Company**") hereby announces the consolidated results of the Company and its subsidiaries (collectively the "Group") for the year ended 31 December 2018 with comparative figures in 2017 as follows:

CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME

For the year ended 31 December 2018

	Notes	**2018** ***HK$'000***	2017 *HK$'000*
Revenue from contracts with customers	*4*	**21,251,772**	6,147,385
Cost of sales		**(9,129,410)**	(3,472,144)
Gross profit		**12,122,362**	2,675,241
Other income and gains		**224,130**	76,470
Loss on disposal of subsidiaries, net		**–**	(5,568)
Selling and distribution expenses		**(854,160)**	(414,463)
Administrative expenses		**(2,250,896)**	(990,090)
Research and development costs		**(1,050,418)**	(621,678)
Other expenses		**(578,673)**	(214,449)
Finance costs		**(41,849)**	(59,339)
PROFIT BEFORE TAX	*5*	**7,570,496**	446,124
Income tax expense	*6*	**(2,377,428)**	(185,092)
PROFIT FOR THE YEAR		**5,193,068**	261,032

	Notes	2018 *HK$'000*	2017 *HK$'000*
OTHER COMPREHENSIVE (LOSS)/ INCOME TO BE RECLASSIFIED TO PROFIT OR LOSS IN SUBSEQUENT PERIODS:			
Exchange differences on translation of foreign operations		**(532,085)**	414,616
OTHER COMPREHENSIVE (LOSS)/INCOME FOR THE YEAR, NET OF TAX		**(532,085)**	414,616
TOTAL COMPREHENSIVE INCOME FOR THE YEAR		**4,660,983**	675,648
Profit/(loss) for the year attributable to:			
Owners of the parent		**5,193,017**	261,099
Non-controlling interests		**51**	(67)
		5,193,068	261,032
Total comprehensive income/(loss) for the year attributable to:			
Owners of the parent		**4,660,932**	675,715
Non-controlling interests		**51**	(67)
		4,660,983	675,648
		HK cents	*HK cents*
EARNINGS PER SHARE ATTRIBUTABLE TO OWNERS OF THE PARENT			
Basic	*7*	**12.32**	0.62
Diluted	*7*	**11.62**	0.60

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

As at 31 December 2018

	Notes	**2018** ***HK$'000***	2017 *HK$'000*
NON-CURRENT ASSETS			
Property, plant and equipment		**904,619**	581,302
Intangible assets		**72,725**	35,467
Available-for-sale financial investments		**–**	66,097
Equity investments designated at fair value through other comprehensive income		**63,058**	**–**
Restricted cash		**18,403**	4,104
Deferred tax assets		**30,810**	–
Other non-current assets		**58,971**	85,471
Total non-current assets		**1,148,586**	772,441
CURRENT ASSETS			
Inventories		**2,758,652**	1,689,670
Trade receivables	*8*	**3,934,877**	7,232,791
Tax recoverable		**2,639**	2,766
Gross amount due from contract customers	*9*	**–**	2,400,660
Contract assets	*9*	**12,100,913**	**–**
Other receivables	*10*	**4,101,976**	1,437,143
Bills receivable		**141,350**	27,363
Deposits and prepayments	*11*	**5,500,390**	3,369,336
Restricted cash		**46,275**	140,236
Cash and cash equivalents		**359,049**	2,496,760
Total current assets		**28,946,121**	18,796,725
CURRENT LIABILITIES			
Trade and bills payables	*12*	**5,172,070**	1,737,876
Other payables and accruals		**3,959,017**	7,073,562
Contract liabilities		**3,193,004**	–
Interest-bearing bank and other borrowings		**195,837**	597,610
Tax payable		**1,895,107**	1,005,374
Deferred income		**32,637**	20,447
Total current liabilities		**14,447,672**	10,434,869

	Notes	2018 ***HK$'000***	2017 *HK$'000*
NET CURRENT ASSETS		**14,498,449**	8,361,856
TOTAL ASSETS LESS CURRENT LIABILITIES		**15,647,035**	9,134,297
NON-CURRENT LIABILITIES			
Deferred tax liabilities		**1,975,262**	478,048
Interest-bearing bank and other borrowings		**490,956**	528,398
Other non-current liabilities		**9,440**	20,049
Total non-current liabilities		**2,475,658**	1,026,495
Net assets		**13,171,377**	8,107,802
EQUITY			
Equity attributable to the owners of the parent			
Issued capital		**105,364**	105,364
Reserves		**13,065,426**	8,001,902
		13,170,790	8,107,266
Non-controlling interests		**587**	536
Total equity		**13,171,377**	8,107,802

NOTES:

1. BASIS OF PREPARATION

These financial statements have been prepared in accordance with Hong Kong Financial Reporting Standards ("**HKFRSs**") (which include all Hong Kong Financial Reporting Standards, Hong Kong Accounting Standards ("**HKASs**") and Interpretations) issued by the Hong Kong Institute of Certified Public Accountants (the "**HKICPA**"), accounting principles generally accepted in Hong Kong and the applicable disclosure requirements of the Hong Kong Companies Ordinance.

As at 31 December 2018, the Group had cash and cash equivalents of HK$359,049,000 and its current assets were in excess of current liabilities by HK$14,498,449,000 which, as set out in notes 8 and 9 included trade receivables and contract assets with a total amount of HK$16,035,790,000.

The directors of the Company are considering measures to monitor and improve the cash flows of the Group, including but not limited to the collection of trade receivables due from its customers and to obtain adequate external financing to support its working capital and meet its obligations and commitments when they become due.

The Group has carried out a review of its cash flow forecast for the twelve months ending 31 December 2019. Based on such forecast, the directors believe that adequate sources of liquidity exist to fund the Group's working capital and capital expenditure requirements, and to meet its short term debt obligations and other liabilities and commitments as they become due in the twelve months ending 31 December 2019. In preparing the cash flow forecast, management has considered historical cash requirements of the Group, as well as other key factors, including anticipated cash collection from its customers and the external financing to be obtained in the twelve months ending 31 December 2019.

In light of the measures of the Group described above, the directors of the Company are of the view that the Group will have sufficient working capital to finance its operations and is able to meet with its liabilities as and when they fall due in the foreseeable future. Accordingly, the directors of the Company consider that it is appropriate to prepare these financial statements on a going concern basis.

2. CHANGES IN ACCOUNTING POLICIES AND DISCLOSURES

The Group has adopted the following new and revised HKFRSs for the first time for the current year's financial statements:

Amendments to HKFRS 2	*Classification and Measurement of Share-based Payment Transactions*
Amendments to HKFRS 4	*Applying HKFRS 9 Financial Instruments with HKFRS 4 Insurance Contracts*
HKFRS 9	*Financial Instruments*
HKFRS 15	*Revenue from Contracts with Customers*
Amendments to HKFRS 15	*Clarification to HKFRS 15 Revenue from Contracts with Customers*
Amendments to HKAS 40	*Transfers to Investment Property*
HK(IFRIC)-Int 22	*Foreign Currency Translation and Advance Consideration*
Annual Improvements 2014-2016 Cycle	*Amendments to HKFRS 1 and HKAS 28*

Other than as explained below regarding the impact of HKFRS 9, HKFRS 15 and Amendments to HKFRS 15, the adoption of the above revised standards has had no significant financial effect on these financial statements.

The nature and the impact of the new HKFRSs are described below:

(a) HKFRS 9 *Financial Instruments*

HKFRS 9 *Financial Instruments* replaces HKAS 39 *Financial Instruments: Recognition and Measurement* for annual periods beginning on or after 1 January 2018, bringing together all three aspects of the accounting for financial instruments: classification and measurement, impairment and hedge accounting.

(1) Classification and measurement

The following information sets out the impacts of adopting HKFRS 9 on the statement of financial position, including the effect of replacing HKAS 39's incurred credit loss calculations with HKFRS 9's expected credit losses ("ECLs").

A reconciliation between the carrying amounts under HKAS 39 and the balances reported under HKFRS 9 as at 1 January 2018 is as follows:

	Notes	HKAS 39 measurement Category	Amount HK$'000	Reclassification HK$'000	ECL HK$'000	HKFRS 9 measurement Amount HK$'000	Category
Financial assets							
Equity investments designated at fair value through other comprehensive income		N/A	–	66,097	–	66,097	FVOCI [1] (equity)
From: Available-for-sale financial investments	*(i)*			66,097	–		
Available-for-sale financial investments		AFS [2]	66,097	(66,097)	–	–	N/A
To: Equity investments designated at fair value through other comprehensive income	*(i)*			(66,097)	–		
Trade receivables	*(ii)*	L&R [3]	7,456,821	–	–	7,456,821	AC [4]
Financial assets included in other receivables and deposits		L&R	1,506,548	(321,791)	–	1,184,757	AC
To: Financial assets at fair value through other comprehensive income	*(iii)*			(321,791)	–		
Bills receivable		L&R	27,363	(27,363)	–		
To: Financial assets at fair value through other comprehensive income	*(iii)*			(27,363)	–		
Financial assets at fair value through other comprehensive income		N/A	–	349,154	–	349,154	FVOCI
From: Financial assets included in other receivables and deposits	*(iii)*			321,791	–		
From: Bills receivable	*(iii)*			27,363	–		
Restricted cash		L&R	144,340	–	–	144,340	AC
Cash and cash equivalents		L&R	2,496,760	–	–	2,496,760	AC
			11,697,929	–	–	11,697,929	
Other assets							
Contract assets	*(ii)*		2,819,524	–	–	2,819,524	
Total assets			20,212,060	–	–	20,212,060	

	Notes	HKAS 39 measurement Category	Amount HK$'000	Reclassification HK$'000	ECL HK$'000	HKFRS 9 measurement Amount HK$'000	Category
Financial liabilities							
Trade and bills payables		AC	1,737,876	–	–	1,737,876	AC
Financial liabilities included in other payables and accruals	*(ii)*	AC	832,516	–	–	832,516	AC
Interest-bearing bank and other borrowings		AC	1,126,008	–	–	1,126,008	AC
Other non-current liabilities		AC	20,049	–	–	20,049	AC
			3,716,449	–	–	3,716,449	
Other liabilities							
Deferred tax liabilities	*(ii)*		609,733	–	–	609,733	
Total liabilities			11,711,899	–	–	11,711,899	

[1] FVOCI: Financial assets at fair value through other comprehensive income

[2] AFS: Available-for-sale financial investments

[3] L&R: Loans and receivables

[4] AC: Financial assets or financial liabilities at amortised cost

Notes:

(i) This category only includes equity instruments, which the Group intends to hold for the foreseeable future and which the Group has elected the option to irrevocably classify upon initial recognition or transition. The Group classified its unquoted equity instruments as equity instruments at FVOCI with no recycling of gains or losses to profit or loss on derecognition. Equity instruments at FVOCI are not subject to an impairment assessment under HKFRS 9. Under HKAS 39, the Group's unquoted equity instruments were classified as available-for-sale financial investments and measured at cost less impairment losses. The reclassification is because these investments are held as long-term strategic investments that are not expected to be sold in the short to medium term. Since these investees were still under construction phase without any operation since the Group has invested in, therefore their fair values approximate to their costs as at 1 January 2018 without any fair value changes being recognised as at 1 January 2018.

(ii) The gross carrying amounts of the trade receivables, contract assets, financial liabilities included in other payables and accruals and the deferred tax liabilities under the column "HKAS 39 measurement – Amount" represent the amounts after adjustments for the adoption of HKFRS 15 but before the measurement of ECLs. Further details of the adjustments for the adoption of HKFRS 15 are included in note 2 (b).

(iii) These are debt instruments at FVOCI with recycling of gains or losses to profit or loss on derecognition. This category includes bills receivable and other receivables due from a third party with a business model whose objective is achieved by both collecting contractual cash flows until the bills and other receivables are matured and selling financial assets with endorsement to suppliers in order to settle the trade payables due by the Group or redeem the receivables before it is matured that meet the SPPI criterion.

(2) Impairment

HKFRS 9 requires an impairment on trade receivables, contract assets, other receivables and bills receivable that are not accounted for at fair value through profit or loss under HKFRS 9, to be recorded based on an expected credit loss model either on a twelve-month basis or a lifetime basis. The Group applied the simplified approach and recorded lifetime expected credit losses on its trade receivables and contract assets. The Group applied general approach and recorded twelve-month expected credit losses on its other receivables and bills receivables. The adoption of HKFRS 9 has had no significant impact on the impairment of the financial assets of the Group.

(b) HKFRS 15 *Revenue from Contracts with Customers*

HKFRS 15 and its amendments replace HKAS 11 *Construction Contracts*, HKAS 18 *Revenue* and related interpretations and it applies, with limited exceptions, to all revenue arising from contracts with customers. HKFRS 15 establishes a five-step model to account for revenue arising from contracts with customers. Under HKFRS 15, revenue is recognised at an amount that reflects the consideration to which an entity expects to be entitled in exchange for transferring goods or services to a customer. The principles in HKFRS 15 provide a more structured approach for measuring and recognizing revenue. The standards also introduces extensive qualitative and quantitative disclosure requirements, including disaggregation of total revenue, information about performance obligations, changes in contract asset and liability account balances between periods and key judgements and estimates. The disclosures are included in note 4. As a result of the application of HKFRS 15, the Group has changed the accounting policy with respect to revenue recognition in note 2.

The Group has adopted HKFRS 15 using the modified retrospective method of adoption. Under this method, the standard can be applied either to all contracts at the date of initial application or only to contracts that are not completed at this date. The Group has elected to apply the standard to contracts that are not completed as at 1 January 2018.

The cumulative effects of the initial application of HKFRS 15 was recognised as an adjustment to the opening balance of accumulated losses at 1 January 2018. Therefore, the comparative information was not restated and continues to be reported under HKAS 11, HKAS 18 and related interpretations.

Set out below are the amounts by which each financial statement line item was affected as at 1 January 2018 as a result of the adoption of HKFRS 15:

	Notes	**Increase/ (decrease)** *HK$'000*
Assets		
Trade receivables	*(1a)*	224,030
Contract assets	*(1a)*	2,819,524
Gross amount due from contract customers	*(1a)*	(2,400,660)
Total assets		642,894
Liabilities		
Contract liabilities	*(3)*	5,239,848
Other payables and accruals	*(1a), (3)*	(5,120,998)
Deferred tax liabilities	*(1a)*	131,685
Total liabilities		250,535
Equity		
Accumulated losses	*(1a)*	(392,359)

Set out below are the amounts by which each financial statement line item was affected as at 31 December 2018 and for the year ended 31 December 2018 as a result of the adoption of HKFRS 15. The adoption of HKFRS 15 has had no significant impact on other comprehensive income or on the Group's operating, investing and financing cash flows or the Group's earnings per share. The first column shows amounts recorded under HKFRS 15 and the second column shows what the amounts would have been had HKFRS 15 not been adopted:

Effects on the consolidated statement of profit or loss and other comprehensive income for the year ended 31 December 2018:

	Amounts prepared under		
	HKFRS 15	**Previous HKFRS**	**Increase/ (decrease)**
	HK$'000	*HK$'000*	*HK$'000*
Revenue from contracts with customers	21,251,772	20,849,315	402,457
Gross profit	12,122,362	11,719,905	402,457
Selling and distribution expenses	(854,160)	(666,448)	(187,712)
Profit before tax	7,570,496	7,355,751	214,745
Income tax expense	(2,377,428)	(2,344,274)	(33,154)
Profit for the year	5,193,068	5,011,477	181,591
	HK Cents	**HK Cents**	**Increase/ decrease**
EARNINGS PER SHARE ATTRIBUTABLE TO OWNERS OF THE PARENT			
EPS Basic	12.32	11.89	0.43
EPS Diluted	11.62	11.22	0.40

Effect on the consolidated statement of financial positions as at 31 December 2018:

		Amounts prepared under		
	Notes	**HKFRS 15**	**Previous HKFRS**	**Increase/ (decrease)**
		HK$'000	*HK$'000*	*HK$'000*
Trade receivables	(1a)	3,934,877	3,695,878	238,999
Gross amount due from contract customers	(1a)	–	11,937,455	(11,937,455)
Contract assets	(1a)	12,100,913	–	12,100,913
Total assets		30,094,707	29,692,250	402,457
Contract liabilities	(3)	3,193,004	0	3,193,004
Other payable and accruals	(1a), (3)	3,959,017	6,964,309	(3,005,292)
Deferred tax liabilities	(1a)	1,975,262	1,942,108	33,154
Total liabilities		16,923,330	16,702,464	220,866
Net assets		13,171,377	12,989,786	181,591
Retained profits	(1a)	1,948,611	1,767,020	181,591
Total equity		13,171,377	12,989,786	181,591

The nature of the adjustments as at 1 January 2018 and the reasons for the changes in the statement of financial position as at 31 December 2018 and the statement of profit or loss and other comprehensive income for the year ended 31 December 2018 are described below:

(1) Revenue recognition

Revenue is recognised when or as the control of the asset is transferred to the customer. Depending on the terms of the contract and the laws that apply to the contract, control of the asset may be transferred over time or at a point in time. Control of the asset is transferred over time if the Group's performance:

– provides all of the benefits received and consumed simultaneously by the customer;

– creates and enhances an asset that the customer controls as the Group performs; or

– do not create an asset with an alternative use to the Group and the Group has an enforceable right to payment for performance completed to date.

If control of the asset transfers over time, revenue is recognised over the period of the contract by reference to the progress towards complete satisfaction of that performance obligation. Otherwise, revenue is recognised at a point in time when the customer obtains control of the asset.

The progress towards complete satisfaction of the performance obligation is measured based on the Group's efforts or inputs to the satisfaction of the performance obligation, by reference to the contract costs incurred up to the end of reporting period as a percentage of total estimated costs for each contract.

(a) Accounting for revenue from construction contracts

The Group conducted several construction contracts both in Manufacturing segment to deliver turnkey production lines for the manufacturing of thin-film solar photovoltaic modules and in Downstream segment to construct a series of solar power stations for certain small to medium-sized enterprises and poverty alleviation projects.

Prior to the adoption of HKFRS 15, revenue from fixed price construction contracts is recognised using the percentage of completion method, measured by reference to the proportion of costs incurred to date to the estimated total cost of the relevant contract.

Upon adoption of HKFRS 15, the Group's performance creates or enhances an asset or work in progress that the customer controls as the asset is created or enhanced, thus the Group satisfies a performance obligation and continue to recognise revenue over time, by reference to completion of the specific

transaction assessed on the basis of the actual costs incurred up to the end of the reporting period as a percentage of total estimated costs for each contract. The adoption of HKFRS 15 has had the following impact on the opening accumulated losses as at 1 January 2018:

	Accumulated losses
	HK$'000
Closing balance as at 31 December 2017	(3,429,313)
Adjustment from adoption of HKFRS 15 on 1 January 2018 *(note)*	392,359
Opening balance as of 1 January 2018	(3,036,954)

Note:

The adjustment was arising from 1) the change of accounting for assurance type warranties for the construction of turnkey production lines which are previously accounted for as part of the total estimated budget costs under HKAS 11, whereas now are accounted for as deferred liabilities to be recorded in other payables according to HKAS 37 *Provisions, Contingent Liabilities and Contingent Assets*, and 2) the change of accounting for uninstalled materials for the construction of turnkey production lines which was previously accounted for as contract costs and included in the calculation of the percentage of completion, however now was excluded from the measurement of progress and was recognised as revenue to the extent of actual costs incurred for the uninstalled materials with no corresponding profit to be recognised. It is on the basis that the costs incurred for these uninstalled materials are not proportionate to the Group's progress in satisfying the performance obligation.

Besides the abovementioned changes arising from adoption of HKFRS 15, the Group provides service type warranties to customers that are distinct in the turnkey production line construction contracts. The customer simultaneously receives and consumes the benefits provided by the Group's performance as the Group provides such kind of service type warranties and thus revenue is to be recognised over time upon rendering of such kind of services. The Group determines to measure the progress of such stand-ready service type warranties according to actual costs incurred and if no cost incurred during the warranty period then the service type warranties will be recognised as revenue at the time upon the maturity of the warranty period rather than straight-line basis since the estimated service type warranties are minimal to the total contract amount of the turnkey production line construction in overall. The adoption of HKFRS 15 has had no impact on the Group's revenue recognition for the service type warranties that are separated from the turnkey production lines construction.

(b) Sale of goods

The Group's sale of goods include sales of solar PV panels and PV application products.

The Group's contracts with customer for the sale of goods generally include one performance obligation.

Under HKFRS 15, revenue is recognised at the point in time when control of the asset is transferred to the customer, generally on delivery of the goods. The adoption of HKFRS 15 has had no impact on the Group's revenue recognition for sale of goods.

(c) Sales to distributors

The Group sells rooftop solar power systems through distributors.

Under HKFRS 15, the Group assesses there are two distinct performance obligations for the sales to distributors: (i) sale of rooftop solar power systems is recognised at the point in time when control of the rooftop solar power systems have been transferred to the customers, generally upon the delivery of these systems; (ii) installation service is recognised as revenue upon completion of the installation considering the installation period is very short and limited within 3 to 10 days. The adoption of HKFRS 15 has had no impact on the Group's revenue recognition for sales to distributors.

(d) Sale of electricity

Under HKFRS 15, revenue from sale of electricity is recognised at the point in time upon transmission of electricity to the electricity purchasing companies or provincial grid companies. The adoption of HKFRS 15 has had no impact on the Group's revenue recognition for sale of electricity.

(2) Significant financing component

Generally, the Group receives short-term advances from its customers including both the turnkey production line construction contract customers and downstream distributors. Using the practical expedient in HKFRS 15, the Group does not adjust the promised amount of consideration for the effects of a significant financing component if it expects, at contract inception, that the period between the transfer of the promised good or service to the customer and when the customer pays for that good or service will be one year or less.

Meanwhile, when the Group constructs turnkey production lines for its customers, revenue is recognised over time with corresponding contract assets and trade receivables being recognised. The Group expects that full collection can be obtained from the customers within one year or less when the corresponding revenue is recognised for the turnkey production line construction contracts, and therefore, using the practical expedient in HKFRS 15, no significant financing component involving in the Group's execution of construction contracts is recognised.

(3) Advances received from customers

Prior to the adoption of HKFRS 15, the Group presented advances from customers in connection with the Group's turnkey production line construction contracts and downstream distributors under other payables and accruals in the consolidated statement of financial position.

Upon adoption of HKFRS 15, reclassifications have been made from other payables and accruals to contract liabilities for the outstanding balance of advances from customers. Advances from customers of HK$5,239,848,000 that previously classified under other payables and accruals has been reclassified to contract liabilities as at 1 January 2018.

(4) Gross amount due from contract customers

Prior to the adoption of HKFRS 15, where contract costs incurred to date plus recognized profits less recognized losses exceed progress billings, the surplus is treated as an amount due from contract customers. The Group's gross amount due from contract customers for contract work was related to the Group's construction of turnkey production lines, construction of solar power stations for certain small to medium-sized enterprises and poverty alleviation projects.

Upon adoption of HKFRS 15, reclassifications have been made from gross amount due from contract customers to contract assets. Gross amount due from contract customers of HK$2,400,660,000 has been reclassified to contract assets as at 1 January 2018.

3. OPERATING SEGMENT INFORMATION

The Group identifies operating segments and prepares segment information based on the regular internal financial information reported to the executive directors for their decisions about resource allocation to the Group's business components and for their review of the performance of those components. The business components in the internal financial information reported to the executive directors are determined according to the Group's major products and service lines.

For management purposes, the Group is organised into business units based on their products and services and has two reportable operating segments as follows:

– construction of turnkey production lines for the manufacture of both amorphous silicon-based and Copper Indium Gallium Selenide ("**CIGS**") thin film solar photovoltaic modules and the technological development and production of Gallium Arsenide ("**GaAs**") thin film power turnkey production lines ("**Manufacturing**");

– construction of solar farms, rooftop power stations, household systems, small to medium-sized enterprises ("**SME**") commercial systems etc., and sale of solar power stations, operation of rooftop power stations, sale of solar photovoltaic modules, photovoltaic application products and electricity, and provision of engineering service ("**Downstream**")

Management monitors the results of the Group's operating segments separately for the purpose of making decisions about resource allocation and performance assessment. Segment performance is evaluated based on reportable segment profit or loss, which is a measure of adjusted profit or loss before tax. The adjusted profit or loss before tax is measured consistently with the Group's profit or loss before tax except for certain of the interest income, finance costs as well as head office and corporate expenses are excluded from such measurement.

Segment assets exclude deferred tax assets, equity investments at fair value through other comprehensive income, and other unallocated head office and corporate assets as these assets are managed on a group basis.

Segment liabilities exclude deferred tax liabilities and other unallocated head office and corporate liabilities as these liabilities are managed on a group basis.

Intersegment sales and transfers are transacted with reference to the selling prices used for sales made to third parties at the then prevailing market prices.

Year ended 31 December 2018

	Manufacturing	Downstream	Total
	HK$'000	*HK$'000*	*HK$'000*
Segment Revenue (note 4)			
Sales to external customers	**19,551,539**	**1,700,233**	**21,251,772**
Segment Results	**10,329,707**	**(2,651,401)**	**7,678,306**
Including:			
Interest income	**8,527**	**26,128**	**34,655**
Finance costs	**(31,846)**	**(6,380)**	**(38,226)**
Research and development costs	**(865,891)**	**(184,527)**	**(1,050,418)**
Reconciliation of segment results:			
Segment results			**7,678,306**
Interest income			**37,267**
Unallocated other income and gains			**10,057**
Finance costs			**(3,623)**
Corporate and other unallocated expenses			**(151,511)**
Profit before tax			**7,570,496**

As at 31 December 2018

	Manufacturing	Downstream	Total
	HK$'000	*HK$'000*	*HK$'000*
Segment Assets	**29,483,927**	**3,739,099**	**33,223,026**
Reconciliation:			
Elimination of intersegment receivables			**(3,375,405)**
Equity investments at fair value through other comprehensive income			**63,058**
Deferred tax assets			**30,810**
Corporate and other unallocated assets			**153,218**
Total assets			**30,094,707**
Segment Liabilities	**14,381,438**	**3,795,159**	**18,176,597**
Reconciliation:			
Elimination of intersegment payables			**(3,375,405)**
Deferred tax liabilities			**1,975,262**
Corporate and other unallocated liabilities			**146,876**
Total liabilities			**16,923,330**

Year ended 31 December 2018

	Manufacturing	Downstream	Total
Other Segment Information			
Reversal of impairment of trade receivables	**–**	**(54,168)**	**(54,168)**
Impairment of trade receivables	**–**	**192,701**	**192,701**
Write-down of inventories to net realisable value	**38,684**	**93,274**	**131,958**
Reversal of inventories provision	**(32,624)**	**–**	**(32,624)**
Reversal of impairment of other receivable	**–**	**(11,684)**	**(11,684)**
Impairment of property, plant and equipment	**–**	**53,933**	**53,933**
Depreciation and amortisation	**55,639**	**60,111**	**115,750**
Reconciliation:			
Corporate and other unallocated depreciation and amortisation			**488**
Total depreciation and amortisation			**116,238**
Capital expenditure *	**328,000**	**236,199**	**564,199**
Reconciliation:			
Corporate and other unallocated capital expenditure			**1,893**
Total capital expenditure			**566,092**

* Capital expenditure consists of additions to property, plant and equipment and intangible assets.

For the year ended 31 December 2017

	Manufacturing	Downstream	Total
	HK$'000	*HK$'000*	*HK$'000*
Segment Revenue			
Sales to external customers	4,241,755	1,905,630	6,147,385
Segment Results	1,477,711	(965,260)	512,451
Including:			
Interest income	6,177	2,130	8,307
Finance costs	(53,112)	(6,227)	(59,339)
Research and development costs	(569,910)	(51,768)	(621,678)
Reconciliation of segment results:			
Segment results			512,451
Interest income			19,732
Unallocated other income and gains			55
Corporate and other unallocated expenses			(86,114)
Profit before tax			446,124

For the year ended 31 December 2017

	Manufacturing	Downstream	Total
	HK$'000	*HK$'000*	*HK$'000*
Segment Assets	16,898,967	5,328,399	22,227,366
Reconciliation:			
Elimination of intersegment receivables			(2,848,995)
Available-for-sale financial investments			66,097
Corporate and other unallocated assets			124,698
Total assets			19,569,166
Segment Liabilities	8,433,987	5,327,729	13,761,716
Reconciliation:			
Elimination of intersegment payables			(2,848,995)
Deferred tax liabilities			478,048
Corporate and other unallocated liabilities			70,595
Total liabilities			11,461,364

For the year ended 31 December 2017

	Manufacturing *HK$'000*	Downstream *HK$'000*	Total *HK$'000*
Other Segment Information			
Reversal of impairment of trade receivables	–	(1,399)	(1,399)
Impairment of property, plant and equipment	–	45,522	45,522
Impairment of trade receivables	–	934	934
Write-down of inventories to net realisable value	39,170	34,612	73,782
Reversal of inventory provision	(9,661)	(1,213)	(10,874)
Depreciation and amortisation	22,231	45,410	67,641
Reconciliation:			
Corporate and other unallocated depreciation and amortisation			396
Total depreciation and amortisation			68,037
Capital expenditure*	128,293	26,523	154,816
Reconciliation:			
Corporate and other unallocated capital expenditure			41
Total capital expenditure			154,857

* Capital expenditure consists of additions to property, plant and equipment and intangible assets.

Geographical information

(a) Revenue from external customers

	2018 ***HK$'000***	2017 *HK$'000*
Mainland China	**21,148,504**	6,110,236
United Kingdom	**1,801**	1,551
United States	**40,597**	30,355
Europe	**56,152**	4,234
Others	**4,718**	1,009
	21,251,772	6,147,385

The revenue information above is based on the locations to which the goods were delivered or the services were provided.

(b) Non-current assets

	2018	2017
	HK$'000	*HK$'000*
Mainland China	**494,615**	315,213
United States	**537,807**	365,272
Hong Kong	**1,962**	566
United Kingdom	**6,742**	10,254
Others	**13,592**	15,039
	1,054,718	706,344

The non-current asset information above is based on the locations of the assets and exclude equity instruments at fair value through other comprehensive income and deferred tax assets.

Information about major customers

2018

During the year ended 31 December 2018, there was no single external customer contributed revenue amounted to 10% or more to the Group's total revenue.

2017

Revenue of HK$2,463,821,000 was derived from sales by the Manufacturing segment to Shandong Zibo Hanergy Thin Film Power Ltd.

Revenue of HK$1,262,618,000 was derived from sales by the Manufacturing segment to Jingzhou Shunbai Solar Power Company Limited.

4. REVENUE FROM CONTRACTS WITH CUSTOMERS

(i) Disaggregated revenue information

Set out below is the disaggregation of the Group's revenue from contracts with customers and the reconciliation with the amounts disclosed in the segment information:

Year ended 31 December 2018 Segments	Manufacturing *HK$'000*	Downstream *HK$'000*	Total *HK$'000*
Type of goods or services			
Contract revenue of turnkey production lines	19,510,942	–	19,510,942
Contract revenue of solar power stations and poverty alleviation projects	–	536,809	536,809
Sale of solar photovoltaic modules	40,597	514,218	554,815
Sale of rooftop solar power systems	–	594,493	594,493
Sale of photovoltaic application products	–	28,021	28,021
Sale of electricity	–	26,692	26,692
Total revenue from contracts with customers	19,551,539	1,700,233	21,251,772
Geographical markets			
Mainland China	19,510,942	1,637,562	21,148,504
United Kingdom	–	1,801	1,801
United States	40,597	–	40,597
Europe	–	56,152	56,152
Others	–	4,718	4,718
Total revenue from contracts with customers	19,551,539	1,700,233	21,251,772
Timing of revenue recognition			
Construction contracts delivered over time	19,510,942	536,809	20,047,751
Goods or services transferred at a point in time	40,597	1,163,424	1,204,021
Total revenue from contracts with customers	19,551,539	1,700,233	21,251,772

Year ended 31 December 2017	
	HK$'000
Contract revenue	**4,845,660**
Sale of solar photovoltaic panels	**62,742**
Sale of rooftop power stations	**1,199,987**
Sale of photovoltaic application products	**7,751**
Sale of electricity	**31,245**
	6,147,385

The following table shows the amounts of revenue recognised in the current reporting period that were included in the contract liabilities at the beginning of the reporting period:

	2018 *HK$'000*
Revenue recognised that was included in contract liabilities at the beginning of the reporting period:	
Contract revenue of turnkey production lines	2,711,214
Sale of rooftop solar power systems	340,285
	3,051,499

(ii) Performance obligations

Information about the Group's performance obligations is summarised below:

Construction contracts

The Group conducted various construction contracts both in Manufacturing segment to deliver turnkey production lines for the manufacturing of thin-film solar photovoltaic modules and in Downstream segment to construct a series of solar power stations for certain small to medium-sized enterprises and poverty alleviation projects.

The Group's performance obligation is satisfied over time, as the Group creates or enhances an asset or work in progress that the customer controls as the asset is created or enhanced. The payment is generally due within 3 days to 90 days from the date of billing.

Sale of goods

The Group's sale of goods include sales of solar photovoltaic panels and photovoltaic application products. The performance obligation is satisfied upon delivery of the goods. The payment is generally due within 3 days to 180 days from the date of billing.

Sales to distributors

The Group sells rooftop solar power systems through distributors. The Group assesses there are two distinct performance obligations for the sales to distributors: (i) the performance obligation of sale of rooftop solar power systems is satisfied upon the delivery of these systems; (ii) the performance obligation of installation service is satisfied upon completion of the installation considering the installation period is very short and limited within 3 to 10 days. The Group usually receives payment in advance from distributors, except for certain distributors with significant amount of transactions, where payment is generally due within 7 days to 14 days from the date of billing.

Sale of electricity

The performance obligation is satisfied upon transmission of electricity to the electricity purchasing companies or provincial grid companies. The payment is generally due within 30 days from delivery.

There are unsatisfied performance obligations resulting from the fixed-price turnkey production lines construction contracts. The aggregated transaction price allocated to these unsatisfied performance obligations as at 31 December 2018 is HK$37,051,021,000.

There are unsatisfied performance obligations resulting from the fixed-price construction contracts of certain solar power stations and poverty alleviation projects. The aggregated transaction price allocated to these unsatisfied performance obligations as at 31 December 2018 is HK$351,585,000.

Management expects that the majority of the above disclosed transaction price of these unsatisfied contracts as of 31 December 2018 will be recognised as revenue in 2019 and 2020.

5. PROFIT BEFORE TAX

The Group's profit before tax is arrived at after charging/(crediting):

	2018	2017
	HK$'000	*HK$'000*
Bank interest income	**(42,008)**	(11,761)
Other interest income	**(29,914)**	(16,278)
Loss on disposal of subsidiaries	**–**	5,568
Auditors' remuneration		
Audit service	**29,703**	16,300
Others	**13,233**	6,470
Amortisation of intangible assets	**7,959**	1,489
Depreciation of items of property, plant and equipment	**108,279**	66,548
Employee benefit expenses**:		
Salaries, allowances and benefits in kind	**1,556,816**	816,403
Employment termination benefits included in administrative expenses	**169**	18
Pension schemes	**127,692**	43,254
Equity-settled share option expenses	**10,233**	19,475
Sub-total	**1,694,910**	879,150
Research and development costs	**1,050,418**	621,678
Foreign exchange (gains)/losses, net	**(17,872)**	1,802
Impairment of property, plant and equipment*	**53,933**	45,522
Loss on disposal of items of property, plant and equipment*	**1,400**	464
Write-down of inventories to net realisable value	**131,959**	73,782
Reversal of inventories provision	**(32,624)**	(10,874)
Impairment of financial and contract assets, net:		
Impairment of trade receivables *(note 8)**	**192,701**	934
Reversal of impairment of trade receivables *(note 8)**	**(54,168)**	(1,399)
Reversal of impairment of other receivables *(note 10)**	**(11,684)**	–
Sub-total	**126,849**	(465)
Minimum lease payments under operating leases:		
Land and buildings	**338,589**	252,738
Equipment	**5,851**	3,975
Product warranty provision	**261,609**	38,468

* These items are included in "other expenses" on the face of the consolidated statement of profit or loss and other comprehensive income of the Group.

** This item include the directors' and chief executive's remuneration and key management emoluments of the Group.

6. INCOME TAX

The Company is incorporated in Bermuda and conducts its principle activities through its subsidiaries in the PRC and other countries. The Company, under the current laws of Bermuda, is not subject to tax on income or capital gains. The Hong Kong profits tax rate was 16.5% (2016: 16.5%) during the year reported. The Company's Hong Kong subsidiaries have both Hong Kong-sourced and non-Hong Kong-sourced income. The latter is not subject to Hong Kong profits tax and the related expenses are non-tax-deductible. No provision for Hong Kong profits tax was made as such operations did not generate any assessable profits arising in Hong Kong during the year. Furthermore, there are no withholding tax in Hong Kong on the remittance of dividends.

Effective from 1 January 2008, the PRC's statutory corporate income tax ("**CIT**") rate is 25%. Certain of the Group's subsidiaries in the PRC were designated as "High New Technology Enterprises" and were entitled to a preferential CIT rate of 15%. The Company's other PRC subsidiaries are subject to income tax at 25% on their respective taxable income as calculated in accordance with the CIT Law and its relevant regulations except for Apollo Precision (Kunming) Yuanhong Limited ("**Apollo Kunming**"). In 2013, Apollo Kunming received written confirmations from the local tax bureau that Apollo Kunming was taxed on a deemed profit method based on the deemed profits at the 25% statutory tax rate. The deemed profit was determined at 10% of the sales of Apollo Kunming. The Company's subsidiary in Sweden is subject to income tax at a rate of 22%. The Company's subsidiary in the United Kingdom is subject to income tax at a rate of 19%. The Company's subsidiaries in the United States are subject to income tax at a rate of ranging from 27% to 29.84%. The Company's subsidiaries in Germany are subject to corporation tax at a rate of 15.825% and trade tax at the rates ranging from 12.6% to 20.3%. Taxes on profits assessable elsewhere have been calculated at the rates of tax prevailing in the jurisdictions in which the Group operates. No provision for income tax was made for the overseas subsidiaries as there were no assessable profits during the year.

Under the prevailing CIT Law and its relevant regulations, any dividends paid by the Company's PRC subsidiaries from their earnings derived after 1 January 2008 to the Company's Hong Kong subsidiary are subject to a 5% or 10%, depending on the applicability of the Sino-Hong Kong tax treaty, PRC dividend withholding tax. For the Group, the historical applicable rate is 5%. Pursuant to the <Notice Regarding Certain Issues of "Beneficial Owner" in Tax Treaty> issued by the State Administration of Taxation on 6 February 2018 and effective from 1 April 2018, there are certain adverse factors against the Group to be entitled with a 5% lower withholding tax rate for future distribution based on management's current best estimation. Accordingly, lack of solid supportive evidence to be entitled with the 5% lower withholding tax rate, the Group has changed to apply 10% in current year to provide for withholding taxes on retained profits generated since 1 January 2008 by its PRC subsidiaries.

The major components of income tax expense in the consolidated statement of profit or loss and other comprehensive income are:

	2018	2017
	HK$'000	*HK$'000*
Current tax:		
The PRC		
Income tax expense for the year	**1,036,764**	107,489
Deferred tax charge:		
Current year	**1,340,664**	77,603
Total tax charge for the year	**2,377,428**	185,092

7. EARNINGS PER SHARE ATTRIBUTABLE TO OWNERS OF THE PARENT

The calculation of the basic earnings per share amount is based on the profit for the year attributable to owners of the parent and the weighted average number of ordinary shares of 42,145,676,000 (2017: 41,866,989,000) in issue during the year.

The Group had share options and subscription rights outstanding which could potentially dilute basic earnings per share in the future. The calculation of the diluted earnings per share amount in 2018 and 2017 is based on the profit for the year attributable to the owners of the parent without any adjustment. The weighted average number of ordinary shares used in the calculation is the number of ordinary shares in issue during the year, as used in the calculation of basic earnings per share plus the weighted average number of ordinary shares assumed to have been issued at no consideration on the deemed exercise of subscription rights into ordinary shares. In 2018, no adjustment has been made to the weighted average number of ordinary shares regarding the outstanding options as they had an anti-dilutive effect on the basic earnings per share amount presented.

When calculating the diluted earnings per share, an estimated share prices of 2018 and 2017 were used which was calculated by market value of 100% equity interest of the Company (the "**Market Value**") divided by total outstanding shares as at each valuation date. The Market Value was estimated by an independent valuer (the "**Valuer**") as the trading of the Company's shares had been suspended since 20 May 2015. The Valuer adopted the market approach, which is basically a comparison method which estimates market value from analysing sales and financial data and ratios of comparable public companies. The Market Value was derived after a discount of lack of marketability.

The calculations of basic and diluted earnings per share are based on:

	2018	2017
	HK$'000	*HK$'000*
Earnings for the year		
Profit attributable to owners of the parent, for the purpose of basic and diluted earnings per share calculation	**5,193,017**	261,099

	Number of shares	
	2018	2017
	HK$'000	*HK$'000*
Shares		
Weighted average number of ordinary shares in issue during the year used in the basic earnings per share calculation	**42,145,676**	41,866,989
Effect of dilution-weighted average number of ordinary shares:		
Assumed issue at no consideration on deemed exercise of all share options outstanding during the year	**–**	78,587
Deemed exercise by Hanergy Holding Group Limited ("Hanergy Holding") of all outstanding subscription rights	**2,530,781**	1,831,592
Weighted average number of ordinary shares in issue during the year used in the diluted earnings per share calculation	**44,676,457**	43,777,168

8. TRADE RECEIVABLES

	2018	2017
	HK$'000	*HK$'000*
Trade receivables:		
– Due from Hanergy Affiliates	**–**	2,283,175
– Due from third parties	**4,138,278**	5,009,089
	4,138,278	7,292,264
Less: Impairment of amounts due from third parties	**(203,401)**	(59,473)
	3,934,877	7,232,791

Based on the invoice date, the ageing analysis of the Group's trade receivables and net of loss allowance is as follows:

	2018	2017
	HK$'000	*HK$'000*
Within 3 months	**873,548**	2,771,724
3 to 6 months	**15,817**	111,839
6 months to 1 year	**1,694,231**	735,433
More than 1 year	**1,351,281**	3,613,795
	3,934,877	7,232,791

The movements of the loss allowance for impairment of trade receivables are as follows:

	2018	2017
	HK$'000	*HK$'000*
At 1 January	**59,473**	57,930
Impairment losses recognised *(note 5)*	**192,701**	934
Reversal during the year *(note 5)*	**(54,168)**	(1,399)
Exchange realignment	**5,395**	2,008
At 31 December	**203,401**	59,473

Impairment under HKFRS 9 for the year ended 31 December 2018

The Group applies the simplified approach to provide for expected credit losses prescribed by HKFRS 9. To measure the expected credit losses, trade receivables have been grouped based on shared credit risk characteristics and the days past due. As at 31 December 2018, credit loss of HK$203,401,000 was made against the gross amount of trade receivables.

Subsequent to 31 December 2018 and up to 29 March 2019 (the date when the financial statements were approved for issuance), the Group has received a total of HK$2,427,602,000 from the turnkey production line customers. In the opinion of the management of the Company, the expected credit loss rate for trade receivables due from turnkey production line customers whose trade receivables as of 31 December 2018 have been substantially collected was immaterial.

Impairment under HKAS 39 for the year ended 31 December 2017

Included in the above provision of trade receivables, which was measured based on incurred credit losses under HKAS 39, as at 31 December 2017 was a provision for individually impaired trade receivables of HK$59,473,000 with a carrying amount before provision of HK$59,473,000.

The individually impaired trade receivables relate to customers that were in financial difficulties or were in default in principal payments and none of the receivables is expected to be recovered.

The ageing analysis of the net trade receivables as at 31 December 2017 that were not individually nor collectively considered to be impaired under HKAS 39 is as follows:

	2017 *HK$'000*
Neither past due nor impaired	2,013,826
Less than 3 months past due	797,308
3 to 6 months past due	715,585
6 months to 1 year past due	1,568,700
More than 1 year past due	2,137,372
	7,232,791

Receivables that were neither past due nor impaired related to a large number of diversified customers for whom there was no recent history of default.

Receivables that were past due but not impaired related to a number of independent customers that had a good track record with the Group. Based on past experience, the management of the Company were of the opinion that no provision for impairment under HKAS 39 was necessary in respect of these balances as there had not been a significant change in credit quality and the balances were still considered fully recoverable.

9. CONTRACT ASSETS/GROSS AMOUNT DUE FROM CONTRACT CUSTOMERS

(i) Contract assets

	31 December 2018 ***HK$'000***	1 January 2018 *HK$'000*
Contract assets arising from:		
Construction contracts of turnkey production lines	**12,100,913**	2,819,524
	12,100,913	2,819,524
Impairment	**–**	–
	12,100,913	2,819,524

Contract assets are initially recognised for revenue earned from the construction of turnkey production lines for the manufacturing of thin-film solar photovoltaic modules and construction of a series of solar power stations for certain small to medium-sized enterprises and poverty alleviation projects as the receipt of consideration is conditional on successful completion of the construction work. Included in contract assets for construction contracts are retention receivables. Upon completion of the construction and acceptance by the customer, the amounts recognised as contract assets are reclassified to trade receivables. The increase in contract assets in 2018 was the result of the increase in the ongoing delivery of construction contracts at the end of the year.

In the opinion of the management of the Company, the expected credit loss rates for contract assets are the same as those trade receivables as of 31 December 2018 for the same types of contracts and is minimum.

Management expects that the majority of the above disclosed contract assets as at 31 December 2018 will be recovered or settled in 2019.

(ii) Gross amount due from contract customers

	2017 *HK$'000*
At 1 January	1,547,405
Contract costs incurred plus recognised profits less recognised losses	5,366,670
Progress billings	(4,708,435)
Exchange realignment	195,020
At 31 December	2,400,660

10. OTHER RECEIVABLES

	2018 ***HK$'000***	2017 *HK$'000*
Other receivables:		
– Due from Hanergy Holding	**664**	194,879
– Due from Hanergy Affiliates	**6,375**	4,210
– Due from third parties	**4,107,076**	1,262,590
	4,114,115	1,461,679
Less: Impairment	**(12,139)**	(24,536)
	4,101,976	1,437,143

The movements in provision for impairment of other receivables are as follows:

	2018 ***HK$'000***	2017 *HK$'000*
At 1 January	**24,536**	22,923
Reversal *(note 5)*	**(11,684)**	–
Exchange realignment	**(713)**	1,613
At 31 December	**12,139**	24,536

The Group applies the general approach to provide for expected credit losses prescribed by HKFRS 9. As at 31 December 2018, credit loss of HK$12,139,000 (2017: HK$24,536,000) was made against the gross amount of other receivables.

11. DEPOSITS AND PREPAYMENTS

	Notes	**2018**	2017
		HK$'000	*HK$'000*
Deposits		**137,272**	69,405
Prepayments paid to:			
– Hanergy Affiliates	*(i)*	**82,359**	112,665
– Third parties		**5,325,456**	3,232,179
		5,407,815	3,344,844
Less: impairment		**(44,697)**	(44,913)
		5,500,390	3,369,336

Included in the above assets, HK$370,006,000 (2017: HK$441,379,000) of the prepayments are aged over 1 year, whereas all the remaining deposits and prepayments are aged less than 1 year.

Except for those prepayments already impaired and prepayments paid to Hanergy Affiliates, assets included in the above balance are related to prepayments for certain uncompleted purchase contracts.

Note:

(i) The balances mainly represented the prepayments for the purchase of photovoltaic ("**PV**") modules under the master agreement signed with Hanergy Holding on 11 April 2012. The master agreement was effective for three years from 1 January 2012 to 31 December 2014. During 2013, the Company's subsidiaries entered into several PV module purchase subcontracts ("**Subcontracts**") with Hanergy Affiliates, nominees of Hanergy Holding, to purchase PV modules with a total capacity of 677.9 MW for construction of the downstream photovoltaic power generation projects. According to the terms of the Subcontracts, approximately 50% of the total contract amounts have been paid by the Company's subsidiaries on the placement of the orders in 2013. As of 31 December 2013, a total of 58.5 MW PV modules have been delivered by Hanergy Affiliates.

The delay of delivery of the PV modules was mainly due to the production arrangement by Hanergy Affiliates, which has caused the delay in the construction of the photovoltaic power generation projects by the Group. Accordingly, the Group reached mutual agreement with Hanergy Affiliates to return the prepayments of HK$1,262,629,000 before 31 December 2014 in relation to a total capacity of 459.4 MW PV modules and terminate these Subcontracts simultaneously.

During 2014, the Company's subsidiaries also entered into several new PV module purchase Subcontracts with Hanergy Affiliates to purchase PV modules with a total capacity of 558 MW for the construction of the downstream photovoltaic power generation projects. According to the terms of the Subcontracts, approximately 50% of the total contract amounts have been paid by the Company's subsidiaries on the placement of the orders in 2014.

A total of 28.8 MW PV modules have been delivered by Hanergy Affiliates in 2014. As of 31 December 2014, there were a total capacity of 689.2 MW PV modules have not been delivered by Hanergy Affiliates.

On 20 January 2015, the Company entered into a supplemental agreement to the 150 MW PV modules supply contract signed on 23 December 2013 with Hanergy Holding on the settlement of the prepayments made in 2013 by offsetting this with the payables of delivered PV modules under the 150MW PV modules supply contract, and the original total capacity of 150 MW was reduced to 80.9 MW.

The Company and Hanergy Holding entered into a PV module supply agreement on 30 April 2015 for the purchase of PV modules for the year ended 31 December 2015.

During 2015, the Company's subsidiaries aforementioned entered into several new Subcontracts with Hanergy Affiliates under the PV module supply agreement to purchase PV modules with a total capacity of 57.7 MW for the construction of the downstream photovoltaic power generation projects. According to the terms of the Subcontracts, approximately 50% of the total contract sum have been paid by the Company's subsidiaries on the placement of the orders in 2015.

PV modules with a total of 315 MW PV modules have been delivered by Hanergy Affiliates in the year 2015. As of 31 December 2015, PV modules with a total capacity of 362.8 MW had not been delivered by Hanergy Affiliates.

During 2016, the Company signed certain new purchase orders with Hanergy Affiliates for PV modules with a total capacity of 1.2 MW. PV modules with a total capacity of 136.0 MW had been delivered by Hanergy Affiliates in 2016. As at 31 December 2016, a total capacity of 228.0 MW PV modules had not been delivered by Hanergy Affiliates.

On 31 December 2017, the Group reached two mutual agreements with Hanergy Affiliates. One was to return the prepayments of HK$6,939,000 in relation to PV modules with a total capacity of 10MW and to terminate the Subcontract simultaneously. The other was to net off the prepayments of HK$225,925,000 with trade payables in relation to the purchase of the PV modules from Hanergy Affiliates before 31 December 2017 and the undelivered PV modules under the subcontract would still be delivered in the future.

During 2017, the Company did not sign any new purchase contracts with Hanergy Affiliates. A total capacity of 64.6 MW PV modules had been delivered by Hanergy Affiliates in 2017. As of 31 December 2017, PV modules with a total capacity of 153.4 MW PV modules had not been delivered by Hanergy Affiliates.

On 26 March 2018, the Company reached a mutual agreement ("Settlement Agreement") with Hanergy Holding. Pursuant to the agreement, the parties mutually agreed that if Hanergy Affiliates could not deliver the PV modules to the Group before 31 December 2018, Hanergy Affiliates are not entitled to call for repayment of the trade payables and other payables to the extent of the other receivables due from Hanergy Affiliates and prepayments made to Hanergy Affiliates that are outstanding before 31 December 2018.

On 28 March 2019, the Company reached a supplementary agreement with Hanergy Holding. Pursuant to the agreement, the parties mutually agreed to extend the settlement agreement to 31 December 2019.

During 2018, the Company did not sign any new purchase contracts with Hanergy Affiliates. PV modules with a total capacity of 35.7 MW have been delivered by Hanergy Affiliates in this year. As of 31 December 2018, PV modules with a total capacity of 117.7 MW have not been delivered by Hanergy Affiliates.

12. TRADE AND BILLS PAYABLES

	2018	2017
	HK$'000	*HK$'000*
Trade and bills payables due to:		
– Related parties	184,654	268,708
– Third parties	4,987,416	1,469,168
	5,172,070	1,737,876

Based on the invoice date, the ageing analysis of the Group's trade and bills payables is as follows:

	2018	2017
	HK$'000	*HK$'000*
0 – 30 days	215,714	583,185
31 – 60 days	40,302	102,969
61 – 90 days	196,211	51,916
Over 90 days	4,719,843	999,806
	5,172,070	1,737,876

The trade payables are non-interest-bearing and the credit terms are normally 60 days.

EXTRACT OF INDEPENDENT AUDITOR'S REPORT

The Company's independent auditor has expressed a qualified opinion in its auditor's report on the Group's consolidated financial statement for the year end 31 December 2018, an extract of which is as follows:

Qualified opinion

We have audited the consolidated financial statements of Hanergy Thin Film Power Group Limited (the "Company") and its subsidiaries (the "Group"), which comprise the consolidated statement of financial position as at 31 December 2018, and the consolidated statement of profit or loss and other comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, except for the possible effects of the matter described in the *Basis for qualified opinion* section of our report, the consolidated financial statements give a true and fair view of the consolidated financial position of the Group as at 31 December 2018, and of its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with Hong Kong Financial Reporting Standards ("HKFRSs") issued by the Hong Kong Institute of Certified Public Accountants ("HKICPA") and have been properly prepared in compliance with the disclosure requirements of the Hong Kong Companies Ordinance.

Basis for qualified opinion

As at 31 December 2018, included in the Group's trade receivables and contract assets were amounts due from a third-party customer amounting to HK$1,084,607,000 (2017: HK$1,816,927,000) and HK$1,218,724,000 (2017: HK$865,448,000) respectively. We were unable to obtain sufficient appropriate audit evidence about the recoverability of the Group's trade receivables and contract assets due from the aforesaid third-party customer of HK$2,303,331,000. Consequently, we were unable to determine whether any provisions are required for these amounts. Any provision for the expected credit loss of these balances would reduce the net assets of the Group as at 31 December 2018 and decrease the Group's net profit for the year ended 31 December 2018.

We conducted our audit in accordance with Hong Kong Standards on Auditing ("HKSAs") issued by the HKICPA. 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 HKICPA's *Code of Ethics for Professional Accountants* (the "Code"), and we have fulfilled our other ethical responsibilities in accordance with the Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our qualified opinion.

MANAGEMENT DISCUSSION AND ANALYSIS

Business Model

Hanergy Thin Film Power Group Limited (the "Company") is a high-tech new energy enterprise listed on the Hong Kong Stock Exchange. It has been engaged in the thin film solar energy business since 2009. Its principal activities include (i) the research and development, design, assembling, sales and delivery of production equipment and turnkey production lines for thin-film solar energy cells/modules as well as the provision of related technical services; (ii) the research and development, design, sales and delivery of thin-film solar energy power generation systems and products of mobile energy applications; and (iii) provision of technical services and support, construction and maintenance to upstream production lines and downstream applications and products.

The Group has been actively involved the investment, research and development of globally advanced thin-film solar energy technologies, and has deployed research and development teams of scientists at various locations around the globe, including the United States, Germany, Sweden as well as China for continuous improvements in the conversion rates of thin-film cells and technological research and development capabilities. Currently, the Group has acquired the most advanced technologies in the world such as copper indium gallium selenium (CIGS), gallium arsenide (GaAs) and high efficiency silicon hetero junction (SHJ) technologies, and by continues improvement of the conversion rates of thin film cells and technological research and development capabilities, it has established a unique competitive advantage.

The Group has continued to maintain its position as the world's advanced high-tech energy company in the field of thin-film power generation. To capture the opportunity of economic transformation and upgrade, the Group has established close cooperative relationships with a number of "mobile energy industrial parks" in recent years, delivering high-end equipment and production-line "turnkey" solutions. For the downstream solar energy applications, the Group continued to adopt the mature business model of key customers and distributors, and actively explored market potential by developing overseas distributors at the same time. Meanwhile, the Group took advantage of its own innovative technological edge, focused on applying thin-film solar energy technology to daily life, and developed various types of products with cutting-edge thin-film applications. Satisfactory results were also achieved in distributed energy and mobile energy solutions.

The Group enjoys indisputable recognitions of its leading position and brand influence in the industry. At the end of 2017, it was selected by Thomson Reuters, a multinational media and consultancy company, as one of the "Top 100 Global Energy Leaders", and listed among the top 25 in the area of renewable energy. We were the only Chinese thin-film solar energy company on the list.

FINANCIAL REVIEW

For the financial year ended 31 December 2018, the Group recorded a revenue of HK$21,251,772,000, representing a strong growth of approximately 246% increase as compared with 2017, of which revenue from upstream business and downstream business took up 92% and 8% of the Group's revenue, respectively. The gross profit for the year increased from HK$2,675,241,000 in 2017 to HK$12,122,362,000.

The Group recorded a profit of HK$5,193,068,000 in 2018, compared to HK$261,032,000 last year, representing a 20 times increase. It was mainly attributable to a number of factors including major technological breakthrough of the Group, the great support of state policies for industries in thin-film power generation, mobile energy, high-end equipment production, new energies and new materials, as well as the excellent development in industrial parks, which helped the Company achieve relatively great progress in the upstream business during the period.

In recent years, the Group has been committed to exploring multiple sources of income and businesses, and has been substantially reducing its reliance on connected transactions with Hanergy Mobile Energy Holding Group Co. Ltd., Hanergy Hydropower Group (previously known as Hanergy Holding Group) and its affiliates ("Hanergy Affiliates"). The secured debts owed by Hanergy Affiliates to the Group were fully repaid before the end of March 2018, which was one and a half years earlier than scheduled.

BUSINESS REVIEW

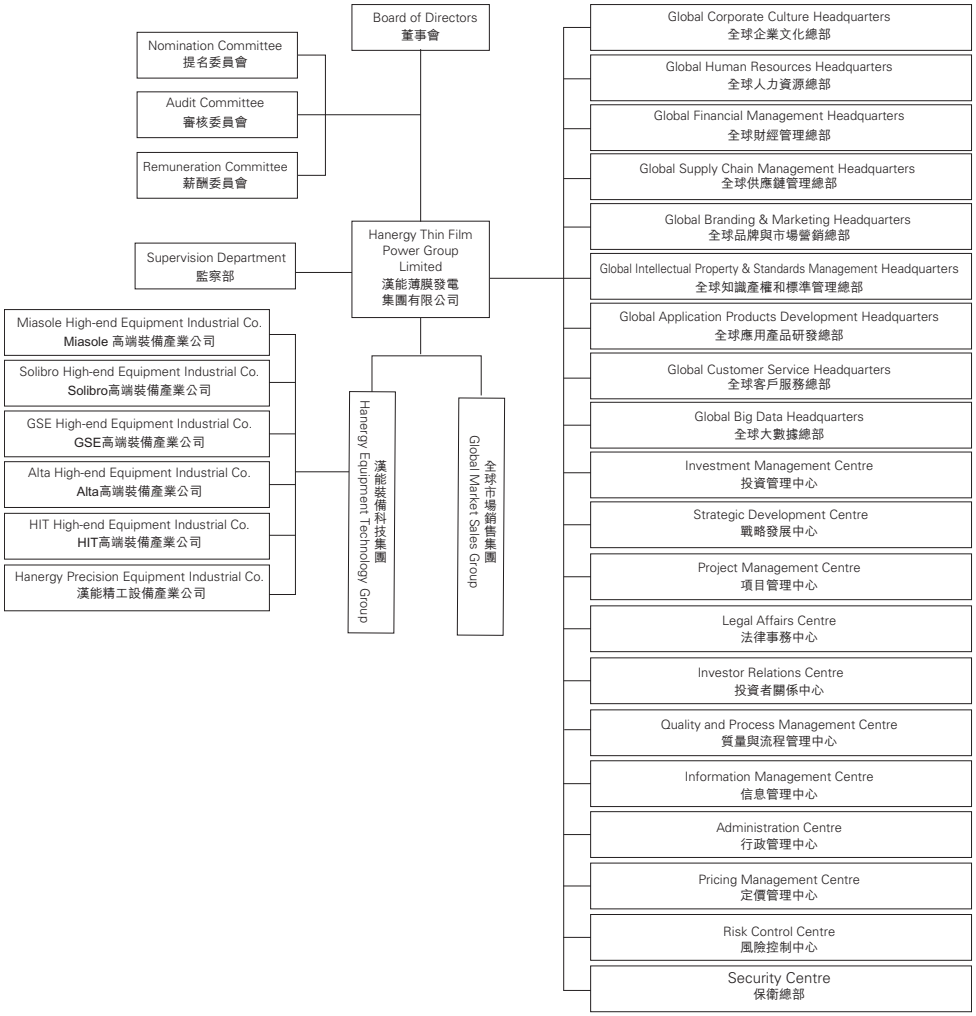
With the support of national policies and the increasing voice of the society for the protection of green environment, the proportion of clean energy consumption has been increasing, and solar energy power generation, with its growth following an upward trend, has become one of the fastest growing renewable energy markets in the world and in China. While the National Energy Administration of China issued "the Notice on Matters Related to Photovoltaic Power Generation in 2018" on 31 May to reduce photovoltaic subsidies and regulate the development of distributed photovoltaics, thus putting the production side under pressure, but the National Energy Administration subsequently emphasised that "the direction of developing photovoltaics and the state's support for the photovoltaic industry are unwavering." It is clear that the purpose of the policy is to rectify the problem of the traditional photovoltaic energy enterprises that are confined in a single development model and relying on subsidies, so as to promote healthier and more orderly development of the photovoltaic industry. Looking back on 2018, China's solar energy power generation industry was still able to maintain steady and healthy growth despite the introduction of the 531 new policy. The cumulative installed capacity of solar power in the country reached 174GW, representing an increase of 34% year-on-year, and newly installed capacity was approximately 44GW.

The Group insists to use thin-film solar energy as its core technology and have not relied too much on state subsidies, and as such it is less affected by the new regulation. During the year of industrial transformation and upgrading, the Group continued to focus strategically on upstream core technology research and development, production equipment delivery, and downstream diversified applications of thin film solar energy to create a mobile energy ecosystem and provide solutions for an "ecological city". During the year, new industrial park customers were added to the upstream business, and new downstream, subversive green building materials and application products such as "HanWall", single glass "HanTile" and multi-functional umbrella "Humbrella" were introduced. Among them, "HanWall" is the world's first "Green System Solution with Power Generation Walls", which combines safety and power generation efficiency. Meanwhile, the Group also actively expanded its application sales business, which contributed to the steady progression during the year.

A. Organization Structure:

The Group carried out an organizational restructuring during the year to optimize the corporate structure of internal governance on a continuous basis, and to promote the upstream and downstream business development. To fit in to the Group's global business deployment, the upstream and downstream marketing headquarters are differentiated by application products in order to create a more efficient structure, which includes the downstream products HanTile, HanWall, HanRoad, HanCar, HanPaper, HanPack, Humbrella, distributed/EPC, as well as the upstream marketing of production lines. These are consolidated into a "Global Market Sales Group". At the same time, the Group also added the "Pricing Management Centre" and "Risk Control Centre" to meet the needs of business operation as well as to further optimize the organizational structure of the Company.

The organization structure of the Group as at 31 December 2018 is as follows:



B. Upstream Business:

The upstream business of the Group mainly includes the research and development, design, sales and delivery of thin-film solar energy cells/modules production equipment and whole production lines, as well as the provision of supporting technical services. On the backdrop of the vigorous promotion of energy structure transformation by Chinese government, the Group cooperated with multiple mobile energy industrial parks, actively promoting the turnkey projects and large-scale localisation of production lines for the thin-film solar energy module production equipment.

In 2018, the Group continued to focus on industrial park projects by designing and assembling the turnkey solution production lines of thin-film solar energy cells and modules. For the financial year ended 31 December 2018, the Group's upstream business recorded a revenue of approximately HK$19.55 billion, contributed by the research and development, design and sales of high-end equipment production lines for thin-film solar energy, including MiaSolé, Solibro, Global Solar Energy (GSE), Alta Devices and SHJ.

Our Thin-film Solar Technology Hits New High

The Group has been focusing on technological breakthroughs and innovative research and development for many years. It has set up professional research and development teams at various locations around the globe, including the United States, Germany, Sweden and China for the enhancement of various technologies.

In 2018, the conversion efficiency of the Group's thin-film solar energy modules reached another new high. In particular, Solibro's top mass production of winner glass-based CIGS modules of the Group reached a conversion efficiency of 18.72% and Solibro's modules obtained TUV SUD product certification in October 2018; the conversion efficiency of MiaSolé flexible cell modules reached 19.4%; GSE's third-generation cell modules obtained the highest level 6 certification on salt spray of IEC, with its R&D conversion efficiency enhanced from 18.7% to 19.3%, while the conversion efficiency of the top mass production of the winner modules reached 16.3% and a certificate was awarded, representing the first of such honour in the industry's certification.

The mass production efficiency of Alta Devices' GaAs single junction modules reached 25.1%, and obtained the Fraunhofer ISE CalLab solar energy modules certification on 14 November 2017. In June 2018, the single junction efficiency reached 28.9%, and obtained the U.S. National Renewable Energy Laboratory (NREL) certification, refreshing the world's single junction record it had already held. By optimizing the cells, the efficiency of the new samples reached 29.1% during the test by Fraunhofer-ISE in Germany in November 2018, further refreshing the world single junction record it held as shown on the NREL's research and development efficiency chart in December this year; the R&D

efficiency of the Group's SHJ cell was as high as 24.23%, which was certified by Japan Electrical Safety and Environment Technology Laboratories (JET). This demonstrated the constant technology advancement of the Group in the past year and the recognition of our leading technological advantages in the industry.

Actively Promoting the Strategic Development of Industrial Park Projects

In recent years, the Chinese government has been promoting energy transformation, low-carbon development, as well as strategic public-private partnerships (PPP). One of the most representative case of these is mobile energy industrial park. As the industrial park project companies have commenced mass production of thin film modules with the support of local governments, combined with the increasing demand for thin-film solar energy products, the Group believes that it will generate considerable sales revenue to the industrial park projects.

In 2018, Hanergy Thin Film Power, continued to provide the industrial parks being the purchaser of equipment and technology, with a series of turnkey production lines, including CIGS, GaAs and high-efficiency silicon hetero junction (SHJ). During the year, the Group's major customers of industrial park projects included Mianyang Industrial Park, Datong Industrial Park and Zibo Industrial Park, as well as the newly added Anhui Bengbu Jinneng Mobile Energy Industrial Park, all contributing to the regional economic development and transformation.

During the period, the delivery of contracted projects was carried out and part of the payments was received. The Group is currently in negotiation with more industrial parks, including those in foreign countries. It is expected that similar industrial park projects will be contracted in the future. This will contribute to the results in the next few years.

Anhui Bengbu Jinneng Mobile Energy Industrial Park Project

In June 2018, Hanergy Affiliates entered into a sales contract with Bengbu Jinneng Mobile Energy ("Bengbu Jinneng") Project Company through a distributor for the provision of a 300MW GSE CIGS thin film solar cell and module production line and a 300MW CIGS thin film solar cell and three-curved single-glass HanTile production line to Anhui Bengbu Jinneng at a total price of RMB3.635 billion. In June 2018, Bengbu Jinneng Mobile Energy Co., Ltd. entered into another sales contract with Hanergy Affiliates. Pursuant to the terms and conditions of the contract, the authorised distributors of Hanergy Affiliates will provide technical services for the 300MW GSE CIGS thin-film solar cell and 300MW HanTile production lines to Bengbu Jinneng Mobile Energy Co., Ltd. at a consideration of RMB669 million.

Bengbu Jinneng is a new energy company focusing on and developing towards the research and development, production, manufacturing and sales services of solar cells and modules, semiconductor chips and building materials. The project complies with the national industrial policy and development strategy, and is in line with the industrial development direction of Bengbu City, Anhui Province. By taking advantage of the existing comprehensive industrial systems of mechanical, chemical, electronics, building materials and other industries, we can assist a number of electromechanical automation equipment companies to become the supplier of this project, so as to facilitate to form an industrial cluster of localised semiconductor and solar energy equipment.

The preliminary planning and design of Bengbu Jinneng Industrial Park project was completed on 14 December 2018. The civil work of the plant was commenced on 18 December 2018, and will be ready for equipment move-in by middle of May 2019.

Sichuan Mianyang Industrial Park Project

On 18 May 2017, Mianyang Fucheng district government and Hanergy Affiliates entered into a cooperation agreement in relation to a mobile energy industrial park project ("Mianyang Industrial Park Project"), pursuant to which investment will be made for the construction and installation of CIGS and GaAs thin film solar energy modules production lines in Fucheng District, Mianyang City, Sichuan Province. Mianyang Industrial Park Project comprises four phases, of which phase I involves 600MW CIGS thin film solar energy modules and 20MW flexible GaAs thin film solar energy modules production lines, with the total investment amount of RMB6.6 billion. In June 2017, the Group entered into a sales contract with the Mianyang Industrial Park project company, to provide the 600MW GSE CIGS thin-film production lines to Mianyang Industrial Park at an aggregate price of approximately RMB3.755 billion, including a former contract of approximately RMB3.491 billion and latter contract of approximately RMB263.5 million.

Currently, 26% of the commenced 300MW production line equipment has been delivered. For the financial year ended 31 December 2018, revenue generated from the contract amounted to approximately HK$964 million.

Shanxi Datong Industrial Park Project

In July 2017, Datong municipal government of Shanxi Province, Datong Coal Mine Group Co., Ltd. and Hanergy Mobile Energy Holding Co., Ltd., (a Hanergy Affiliate) entered into a strategic cooperation agreement in relation to a mobile energy industrial park project ("Datong Industrial Park Project"), to invest in the construction and installation of CIGS thin-film solar power modules production lines in Datong, Shanxi Province. As of 31 December 2018, all of the 250 MW glass-based CIGS thin film module production line equipment of phase I project has been moved into the plant, and all the equipment of the 50MW flexible CIGS thin film module production line has been completely installed.

For the financial year ended 31 December 2018, revenue generated from the contract amounted to approximately HK$145 million.

Shandong Zibo Industrial Park Project

In December 2014, Zibo municipal government of Shandong Province entered into a cooperation framework agreement in relation to a solar energy industrial park project ("Zibo Industrial Park Project") with Hanergy Holding (now renamed as "Hanergy Hydropower"), to invest in the construction and installation of 3GW CIGS thin film solar energy modules production lines in Zibo, Shandong Province. In October 2017, Hanergy Hydropower transferred 57% equity interests of Zibo Industrial Park Project Company to Dongteng Investment Group Co., Ltd. (formerly known as "Huafengyuan Investment (Beijing) Co., Ltd.").

In January 2016, the Group entered into a sales contract with Zibo Industrial Park Project Company to sell the 300MW MiaSolé CIGS thin film solar energy production line to Zibo Industrial Park Project Company at the price of US$390 million. On 27 April 2017, the Group entered into another sales contract with Zibo Industrial Park Project Company, to sell the 300MW Solibro CIGS thin film solar energy production line to Zibo Industrial Park Project Company at the price of US$390 million.

For the financial year ended 31 December 2018, the construction of the 300MW MiaSolé CIGS thin film solar energy production line has been completed, and the 300MW Solibro production line is in the process of trial production. The total revenue generated from the contracts in relation to the above two production lines amounted to approximately HK$1.745 billion during the year.

Proactively Exploring New Major Customers to Diversify the Upstream Business

The Group took an active approach in exploring major third-party customers in order to diversify our upstream business. In 2018, our major customers' projects mainly included Jingzhou Shunbai Project, Chengdu Dongteng (previously known as "Huafengyuan") Project, Nanjing Yineng Project, Heilongjiang Yineng Project and Dezhou Yineng Project.

Jingzhou Shunbai Project

In May 2017, the Group entered into a 300MW amorphous silicon BIPV thin film modules production line sales contract and the corresponding technical support and services agreement with Jingzhou Shunbai Solar Power Company Limited ("Jingzhou Shunbai") for the provision of 300MW amorphous silicon BIPV thin film production line and corresponding technical support and services at the prices of US$57 million and US$156 million respectively. The equipment has been delivered and is now under installation, and the stage payments will be made subject to the progress of delivery. For the financial year ended 31 December 2018, revenue from the contracts was approximately HK$185 million.

In September 2017, the Group entered into a 150MW Solibro CIGS thin film modules production line sales contract and the corresponding technical support and services agreement with Jingzhou Shunbai Industrial Park Project Company for the provision of Solibro 150MW CIGS thin film production line and the corresponding technical services at the prices of RMB$619.2 million and RMB$333.4 million respectively. Part of the equipment has been delivered and is now under installation, and the stage payments will be made subject to the progress of delivery. For the financial year ended 31 December 2018, revenue from the contracts was approximately HK$629 million.

In January 2018, the Group entered into a 150MW MiaSolé CIGS thin film modules production line sales contract and a services and technical support agreement with Jingzhou Shunbai Industrial Park Project Company, at an aggregate price of RMB746.9 million. Part of the equipment has been delivered and is now under installation. The stage payments will be made subject to the progress of the delivery. For the financial year ended 31 December 2018, revenue from the contracts was approximately HK$287 million.

Chengdu Dongteng Thin Film Solar (formerly known as Chengdu Huafengyuan) Project

On 26 October 2017, the Group entered into a 600MW SHJ thin film modules production line sales contract with Huafengyuan (Chengdu) New Energy Technology Co., Ltd. ("Chengdu Huafengyuan") to install and develop its SHJ thin film modules production lines for agricultural solar energy applications in Chengdu, the PRC. Pursuant to the contract, the Group shall provide 600MW SHJ thin film solar power modules production lines to Chengdu Huafengyuan at the price of approximately RMB1.4 billion.

The Group entered into the corresponding technical support and service agreements with Chengdu Dongteng Thin Film Solar Energy Co., Ltd. ("Chengdu Dongteng Thin Film", formerly known as Huafengyuan (Chengdu) New Energy Technology Co., Ltd.) on 27 October 2017 and 23 March 2018, respectively, for the provision of technical service to 120MW and 480MW SHJ production lines, at an aggregate price of RMB932.6 million.

In March 2018, the first production line of 120MW was commissioned for pilot test. Currently, it is in the process of ramping up its capacity, with the output of 7.245MW for the year 2018. Totally 394MW of the 480MW production line has been delivered with the equipment delivery rate of 82%. As at the financial year ended 31 December 2018, accumulated revenue from the above production lines and technical services contracts was approximately HK$1.662 billion.

On 2 May 2018, the Group entered into a sales contract and a technical support and service agreement with Chengdu Dongteng Thin Film, for the provision of 150MW MiaSolé CIGS thin film modules production line and the corresponding technical support and service, at a total price of RMB893 million. For the financial year ended 31 December 2018, the revenue generated from the contracts was approximately HK$116 million.

Nanjing Yineng Project

By 12 June 2018, the Group entered into a 300MW Solibro CIGS thin film modules product line sales contract and a technical support and services agreement with Huaxia Yineng (Nanjing) New Energy Co., Ltd ("Nanjing Yineng") for the provision of 300MW Solibro CIGS thin film modules production line and the corresponding technical support and services to Nanjing Yineng at the prices of RMB1.24 billion and RMB667 million respectively. Positive progress has been made in project delivery. Part of the equipment is now under installation, and stage payments will be made subject to the progress of the delivery. For the financial year ended 31 December 2018, revenue generated from this contract was approximately HK$1.653 billion.

Heilongjiang Yineng Project

In 2017, the Group entered into a sales contract and a technical support and services agreement with Heilongjiang Huaxia Yineng New Energy Technology Limited ("Heilongjiang Yineng") for the provision of 300MW Solibro CIGS thin film solar energy modules production lines and the corresponding technical support and services. Positive progress has been made in project delivery. Part of the equipment is now under installation, and the stage payments will be made subject to the progress of the delivery. For the financial year ended 31 December 2018, revenue generated from the contract was approximately HK$1.193 billion.

Dezhou Yineng Project

In 2017, the Group entered into a sales contract and a technical support and services agreement with Dezhou Yineng New Energy Technology Co., Ltd. ("Dezhou Yineng") for the provision of 300MW Solibro CIGS thin film solar power modules production line and technical support and services. Positive progress has been made in project delivery. Part of the equipment is now under installation, and stage payments will be made subject to the progress of the delivery. For the financial year ended 31 December 2018, revenue generated from the contract was approximately HK$1.179 billion.

C. Downstream Business

The downstream business of the Group mainly includes development, design, integration and sales of thin film solar power generation systems, mobile energy application products as well as provision of related services, including: (i) sales of distributed power generation systems, which consist of household rooftop power generation systems, industrial/commercial rooftop power generation systems, building-integrated solar energy (BIPV) systems and solar energy agricultural application systems; (ii) sales of mobile energy application products; (iii) provision of construction and maintenance services of solar power stations; and (iv) EPC work.

The Group has introduced four types of household distributed thin film power generation systems, including (1) standard product series designed for household use; (2) small-scale industrial/commercial product series which utilize idle rooftops of industrial/commercial buildings for small power stations; (3) solar shed series applicable to sunshades and gazebos; and (4) HanTile series power generation modules which take the shape of the arched roof tiles used in the traditional Chinese architecture for general roofing.

With the core technology of the Group, its thin-film solar products have been widely recognized by the market. For the financial year ended 31 December 2018, the downstream business recorded a revenue of approximately HK$1.70 billion.

Green Buildings Powered by New Energy

New energy buildings represent the development trend of the global construction industry and are also trendy and fashionable architecture. The Group focuses on solar energy applications in construction has launched innovative HanWall, HanTile and BIPV projects, taking full advantages of thin film solar energy.

HanWall

In September 2018, the Group launched HanWall, an innovative epoch-making thin film solar energy product. HanWall innovatively "implants" the cutting-edge thin-film solar technology into glass using the most advanced glass-based CIGS thin film solar technology in the world, to turn ordinary glass into new high-tech green power generation building materials. Featured by both safety and power generation efficiency, it is the first "green power generation wall system solution" in the world, enabling buildings to actively produce energy without emissions and reducing impact on the environment, thus realizing a revolutionary breakthrough in the application of solar energy in construction.

There are two types of HanWall: the lightproof "power generation wall" and the light-transmitting "power generation window", with power generation capacity of 140W each piece. As of September 2018, more than 700 patents and patent applications were produced during the development of HanWall products. 3C certification in China and other certifications of authorities from six countries and regions around the world were applied and awarded for HanWall. As a building material, HanWall is adaptive to extreme variation of temperature ranging from -40°C to 85°C, and can function normally under various extreme conditions. It also comes with a 10-year warranty, ensuring that power output will not be less than 85% in 25 years.

Since its debut in the market, HanWall has attracted great attention from all over the world. The Group and Environmental Technology Solutions in Australia entered into a sales agreement for the sale of HanWall, opening a way to HanWall for the access of international markets.

Case: HanWall BIPV Project for Overseas Chinese Town in Heyuan, Guangdong Province

The BIPV project for Overseas Chinese Town in Heyuan, Guangdong Province, being the first project of practical application for Hanergy's HanWall, has a total installation area of approximately 2,648m^2 and installed capacity of 236.7KW. Its average daily power output can meet almost 30% electricity demand of the building, and it is the largest HanWall project in terms of installed capacity of a single building. The contract sum of the project is RMB26 million.

Upon the implementation of the project, a demonstration project combining HanWall power generation system and construction will be established, which will showcase a model for HanWall products, especially the applications for constructions in cities, demonstrating the best form of representation of HanWall products in the utilisation of solar power generation in cities - BIPV. In addition, such practical application can also accumulate lots of practical experience and data for HanWall modules, which will be of great significance to the continuous development and expansion of HanWall products. A building becomes a veritable green building by integrating with HanWall modules, realizing energy conservation and emission reduction, which is a perfect combination of economic benefits, social benefits and ecological benefits.

HanTile

Following the introduction of double glass HanTile in 2017, the Group has further launched a series of innovative products this year, including a new generation of single glass triple-curved tiles, colored HanTiles and tubular tiles, which are lighter and thinner than double glass HanTiles. They also have the benefits of high-efficiency power generation and high level of building safety, realizing a perfect combination of thin-film solar technology and traditional architecture, thus creating significant commercial and environmental values to the application of construction materials.

So far, HanTile has been applied to various architectural designs, including Swedish villas, nursing homes in Jilin, Shunyi folk houses in Beijing, Sixian folk houses in Anhui and buildings of Naxi Race in Lijiang, Yunnan, and was officially introduced to the European markets in the first half of 2018. During the year, the Group entered into a HanTile pre-sale agreement with Forest Global Stage (FGS) International Group in Japan, and also launched HanTile demonstration projects in Hong Kong villas for further expansion in the market.

Case: The HanTile Demonstration Project of Hong Lok Yuen Villa in Tai Po, Hong Kong

The HanTile Demonstration Project of Hong Lok Yuen Villa in Tai Po, Hong Kong adopts the new generation of single glass "HanTile" with an installed capacity of 8KW. The project is the first HanTile demonstration project in Hong Kong, which has a good demonstration effect as it is located at the main thoroughfare of the mid- to high-end villa community in Tai Po, Hong Kong.

Case: The HanTile Project of Taikoo Li Sanlitun in Beijing

In 2018, the Group completed the HanTile project of Taikoo Li Sanlitun in Beijing, with an installed capacity of 15KW. After the installation of "HanTile" on the rooftop, Taikoo Li Sanlitun in Beijing is not only environmental-friendly and energy-saving, but has also become a local commercial landmark with great demonstration significance.

Established in 1972, Swire Properties Hong Kong has been committed to the development and management of commercial, retail, hotel and residential properties, with the development strategy focusing on the development of superstructure complexes at major transportation interchanges. Swire Properties has five large-scale development projects in Beijing, Shanghai, Guangzhou and Chengdu, of which Taikoo Li Sanlitun and The Opposite House Hotel in Chaoyang District, Beijing are the most prominent.

Building-Integrated Photovoltaic

Through the installation of thin film solar power generation systems in form of solar energy tile roofs, solar energy sunroofs, solar energy curtain walls, solar energy railings, solar energy sunshades and solar energy parking sheds, BIPV projects utilise solar energy resource to provide clean and free electricity for the building, and provide one-stop solutions for product development, product supply, system design, installation and operation and maintenance. This is a way to achieve a combination of practical functions in power generation and aesthetics architecture through the construction of thin film solar power generation buildings.

Case: Solar Energy Sunroof System in the Atrium of Shanxi National Power Generation Dispatching Complex Building

With the installation area amounting to 800 square meters, the solar energy sunroof system in the atrium of Shanxi National Power Generation Dispatching Complex Building adopts large-size hollow BIPV sunroofs. In this way, it does not only maintain its attractive appearance, but also achieve energy conservation and environmental protection, with the size of a single module of approximately 8 square meters. This is a demonstration project of the national grid. Using modules with high photoelectric conversion efficiency, the project effectively utilizes the solar energy irradiated on the surface of the building. By virtue of the material properties of the dualsilver-layer glass, which ensures high light transmittance while reducing heat transfer coefficient by 21%, amply reducing indoor temperature and reducing the temperature difference between the northern and southern sides of buildings. Air-conditioning power consumption is expected to reduce by 15%. Currently, the cell panels and electrical installation are basically completed, and the project is now under pilot test for the overall grid connection.

Roof-top Distributed Solar Power Generation Market

The Group continues to devote great efforts to the development and sales of roof-top power generation systems, taking advantage of rooftop areas for the construction of power stations using thin-film power generation modules, and providing green energy solutions. In 2018, the sales of rooftop power stations contributed revenue of HK$594 million to the Group.

Case: "China Zun Building" Project in the Core Area of Beijing CBD

Located in the core area of Beijing Central Business District, China Zun Building is the highest landmark in Beijing, with 108 storeys and a height of 528 meters. The project utilizes 640 pieces of the Group's Solibro modules, occupying the rooftops projection areas of approximately 900 square meters with total installed capacity of 92.8KW. In order to improve the wind loading capacity and prevent the impact of extreme weather on the thin film solar power generation systems, the Company innovatively adopted a rail mounting method of installation, ensuring that the system would be safer and more reliable without affecting the overall appearance of the building.

On 27 December 2018, the installation project of China Zun Building was completed, and has become the highest thin-film solar power station in Beijing City.

Case: Yancheng Haiwaihai Motor City Project in Jiangsu

In April 2018, the Group entered into a 3MW sales contract with Yancheng Huanghai New Energy Development and Operation Co., Ltd. (鹽城黃海新能源開發運營有限公司), in relation to the Yancheng Haiwaihai Motor City project in Jiangsu with a contract sum of approximately RMB52.6 million, out of which, the amount of RMB15.78 million has already been received. The project adopts the 240W flexible thin-film cell modules from MiaSole, a R&D center of Hanergy in Silicon Valley, the USA. This is the largest distributed flexible thin-film solar power plant project of Hanergy in the world. The installation was completed and connected to the grid at the end of December 2018.

Yancheng Haiwaihai Motor City, being the largest automotive after-sales service market in northern Jiangsu, occupies an area of 260 acres and offers comprehensive services including purchase and sales of used cars, auto supplies, auto beauty and repairs, financial insurance, cultural exhibitions, auto e-commerce and others.

Case: Solar Power Flower Umbrellas Project in the International Pavilion at the Beijing International Horticultural Exhibition

The International Horticultural Exhibition 2019, Beijing, China (referred to as "Beijing IHE") is one of the international exhibitions organized by the Chinese government (as the organizer) and Beijing City. As one of the three core buildings within the exhibition and the largest stadium construction, the International Pavilion has a GFA of approximately 22,000 square meters. Leveraging the "flower umbrellas" as its basic elements, it connects steel bollards with overhanging steel beams to create 94 "flower umbrellas" which connect with each other on the top, presenting a rooftop clustering with "flowers". The "flower umbrellas" consist of 6 aluminum veneers in the shape of leaves. By setting the Group's MiaSolé flexible solar energy modules on top of the aluminum veneers, the combination becomes flakes of solar energy flowers with total installed capacity of 10KW. According to the estimation, after installing Hanergy's flexible modules, one flower umbrella can generate around 10,100 kWh of electricity each year, reducing standard coal consumption of 3.23 tones and carbon emissions of 9.41 tones, which are equivalent to planting 514 trees. This result fully echoes the theme of "Green life • Beautiful Home" of Beijing IHE.

Hong Kong Ushers in Solar Energy Development

To promote the development of renewable energies in Hong Kong, Hong Kong Government signed a Scheme of Control Agreement for a term of 15 years with two local power companies which came into effect in 2018. Pursuant to the Agreement, Hong Kong Government requires the two power companies to purchase electricity generated by renewable energies from residential/industrial/commercial users which are connected to the public grid at subsidized on-grid tariff. With the implementation of this plan, the number of residential/industrial/commercial users installing solar power generation systems in Hong Kong has been gradually increasing.

In 2018, the Group completed several rooftop power station projects at various location in the New Territories, Hong Kong, such as the Sha Tau Kok farm project, container house MARKBOX project in Pat Heung, Yuen Long and small village house projects in Yuen Long were completed in the first half of 2018. In the second half of the year, several projects including the Sha Tin Rural Committee project, the warehouse project in Pat Heung, Yuen Long and HanTile and SHJ projects in Tai Po Hong Lok Yuen were launched. The Group will continue to expand its solar energy application business in Hong Kong aggressively through the cooperation with distributors and partners.

Case: The 40KW Project in Sha Tau Kok, Hong Kong

In 2018, the 40KW Sha Tau Kok project in Hong Kong was formally completed. The project adopts Hanergy's MiaSole flexible thin-film modules with an installed capacity of 40KW. As the project is categorised as a system with an installed capacity ranging from 10KW to 200KW, the project owner can sell the electricity at HK$4 per kWh of electricity to the power companies according to the Scheme of Control Agreement, and enjoy a stable revenue stream for 15 years.

Case: The Demonstration Project of SHJ Product at Tai Po Hong Lok Yuen Villas, Hong Kong

The SHJ demonstration project at Tai Po Hong Lok Yuen villas in Hong Kong adopts SHJ high-efficiency solar modules with an installed capacity of 9.3KW. The project, being adjacent to the HanTile demonstration project, is the first SHJ high-efficiency solar energy demonstration project in Hong Kong, and together they demonstrate remarkable attraction.

Case: The HanTile and SHJ Demonstration Project at Tai Po Constellation Cove Villas in Hong Kong

The HanTile and SHJ demonstration project at Tai Po Constellation Cove villas in Hong Kong adopts both "HanTile" and SHJ high-efficiency solar energy modules with an installed capacity of 6.9KW. By using two types of innovative green building materials - "HanTile" and SHJ high-efficiency solar energy modules, the products are shown to the mid- to high-end residential communities with a forward-looking demonstration effect.

Entering the New Era of Mobile Energy

The new era of mobile energy is a result of the constant development and progress of thin film solar technology. Mobile energy is characterised by decentralisation, better energy utilisation, and improved efficiency compared with traditional centralised power stations. In 2018, the Group continued to make breakthroughs in several mobile energy markets including green transportation, aerospace and consumer goods.

Green Transportation to Create a Low Carbon City

Green Transportation solution aims to ease the tension of energy supply for transportation and change the overall layout of energy supply in the transportation system. The thin film solar energy technology can be applied to new energy vehicles, intelligent bus station platforms, parking shed signaling systems, lighting, highway energy, cruise port and others. Electricity is generated during day-time and supplied through night to bring down power supply requirement for urban transportation and reduce energy consumption and pollution.

In 2018, the Group signed a product strategic cooperation agreement with China FAW Group Corporation ("FAW"), a giant state-owned automobile manufacturer directly under the Central Government. Pursuant to the agreement, the parties commenced multi-directional strategic cooperation on the theme of "Green Energy and Energy Conservation", and push for the mass production of green vehicles through joint-development, with an aim to make innovative breakthroughs in the passenger vehicle market. In addition, the Group also launched a project with Ruichi Automobile Systems Co., Ltd. in the cooperation of low-speed electric vehicles, marking a new milestone in green transportation development driven by thin film solar car roof panels.

Case: Low-Speed Electric Vehicle Project of Ruichi

In May 2018, the Group entered into a sales contract with Ruichi Automobile Systems Co., Ltd. ("Ruichi Auto") in relation to the installation of thin-film solar roof panels for 100 Ruichi Ruiyi electric vehicle samples for trial. Subsequently, the Group and Ruichi Auto entered into another strategic cooperation agreement totaling approximately RMB100 million to provide solar energy solutions for a total of 49,300 units of six vehicle models with same car roof areas. A total of 100 Ruichi Ruiyi electric vehicle samples have already been delivered in June 2018.

Ruichi Automobile Systems Co., Ltd. is mainly engaged in the research and development and manufacturing of new energy vehicle-related products. Taking advantage in its research and development capability and product quality, it is ranked among the top five low-speed electric vehicle enterprises in China. The addition of Hanergy's thin-film solar roof panels introduces a new element for Ruichi, and the thin-film solar roof panel represents a "solar energy range extender" to vehicles, which will help drive up sales and enhance brand influence. This is a representative and exemplary low-speed electric vehicle project in China.

Aerospace: A New Breakthrough in Thin Film Technology Applications

Solar-powered aerial vehicles mainly include drones, spacecrafts, hot air balloons and airships, among which, drones are the most typical applications widely used in the military, civilian and commercial markets. In 2018, by making full use of the thin-film solar chip technology, the Group has commenced several projects with aerospace giants including the National Aeronautics and Space Administration (NASA) and Boeing Company of the United States, making remarkable progress in solar energy applications in the aerospace field.

Case: Solar-Powered Unmanned Aircraft Project Launched by Boeing

Alta Devices, the US subsidiary of the Group, supported Aurora Flight Sciences, a subsidiary of the aviation industry giant Boeing Company in the USA, in introducing a solar-powered unmanned aircraft - Odysseus. Odysseus has a wingspan of 74 meters, covered with Hanergy's Gallium Arsenide (GaAs) thin film solar cells, which enable it to fly infinitely powered by solar energy, and it has the largest payload capacity of long-lasting solar aviation at present.

Odysseus is currently in the process of ground testing, upon the completion of which, it will be delivered to Puerto Rico for flight testing by the end of February 2019, and is scheduled to commence flight operations in April this year, with an aim to fly for three consecutive months nonstop.

Case: NASA Conducts A Test on the Group's GaAs Thin Film Solar Technology

Based on the years of cooperation with the engineers from Hanergy's Alta Devices, Marshall Space Flight Center (MSFC) of the National Aeronautics and Space Administration (NASA) selected the GaAs thin film solar cells of Hanergy's Alta Devices to participate in the mission of The International Space Station Data Experiment (MISE-X) in November 2018 and conducted a test to assess whether it can be used in NASA's low-Earth orbit missions in future, including powering CubeSats.

Working jointly with NASA's scientists and suppliers, the Group's engineers developed nine pieces of flexible GaAs solar cell modules using innovative packaging materials. Upon completion of production in the first half of 2018, these cells were delivered to NASA for testing. In August, the integration of solar cells and sample carriers was carried out at the Alpha space facility in Houston, the U.S.A. On 17 November, the experiment project was transported by NG-10 Antares rocket to the International Space Station, with the Group's solar cells installed on the top side of the International Space Station. This test will last for one year, after which the solar cells will be sent back to NASA and the Group for evaluation. Both parties have developed scientific models to simulate the situation of solar cells in orbit. The final sample evaluation will facilitate the research team to improve their models and enhance the accuracy of solar cells and packaging efficiency during long missions in the future.

Diversified and Innovative Applications to Meet the Huge Consumer Market

Through continuous technological breakthroughs and innovative research and development, the Group has developed a series of mobile solar energy products applicable for consumer use, to meet the demand for mobile energy solutions in different markets. In the past few years, the Group has introduced the portable thin-film solar energy-powered backpack "HanPack", thin-film solar energy-powered paper "HanPaper", portable thin-film solar energy emergency power box, thin-film solar energy clothing, etc. by applying solar energy power

generation to daily life. In 2018, the Group launched "Humbrella", the first multi-functional umbrella based on flexible thin-film solar power generation technology in the world. It also launched the Humbrella charity project "Lighting Africa", providing local areas with mobile energy solutions through donation of "Humbrella" to the African regions.

For the convenience of the customers in making purchases of the Group's thin film power products, the Group has established its own dedicated network of channels for the sale of its products. These include the self-operated official online shop website "Hanergy Shop", the online flagship store Tmall, the online flagship store JD.com, other major e-commence platform franchise stores, network distributor channel, online agent channel as well as vertical industries and website channels. The objective is to establish a multifaceted sales channel platform with online and offline, nation-wide coverage. In 2018, sales of PV application products contributed a revenue of approximately HK$28 million to the Group.

Precise Poverty Alleviation to Promote Economic Development

In 2018, the Group continued to respond to the national policy of "precision poverty alleviation", by making full use of the land resources of rural poor households to help realize precision poverty alleviation. The poor households who participated in precise poverty alleviation not only can have the ownership of solar energy-powered equipment, but can also enjoy the economic benefits from feeding the excess power generated to the grid after their own use.

During the year, the Group continued to focus on solar precision poverty alleviation projects and completed the installation of PV systems for 21 villages in the 615KW PV poverty alleviation project of Boli County, Qitaihe City, Heilongjiang Province, which has been connected to the grid for power generation. The estimated annual income per poor household was approximately RMB3,000, practically helping to realize poverty alleviation for the villages.

Case: PV Poverty Alleviation Project of Guangshan County, Xinyang City, Henan Province

The PV Poverty Alleviation Project of Guangshan County, Xinyang City, Henan Province was completed by Henan Company of the Group jointly with Henan Wanyilian Environmental Technology Co., Ltd. (河南萬意連環境科技有限公司), which was the first PV poverty alleviation demonstration project in Xinyang City, Henan. The project has an installed capacity of 6MW with contract amount of RMB45 million, which has been completed and connected to the grid. The estimated annual power generation capacity will be reaching 9 million kWh. It is planned to help each documented poverty-stricken household in sustainable poverty alleviation with every 5KW PV power station, ensuring that each corresponding poor household of the power station will have an annual income of approximately RMB3,000, and helping the poor to realize precision poverty alleviation in the region.

D. Delivery of Production Lines to Hanergy Hydropower Group (formerly known as "Hanergy Holdings Group")

Apollo Precision (Fujian) Limited ("Fujian Apollo", a subsidiary of the Company) entered into two master sales contracts (each of them "Master Sales Contract") with Hanergy Hydropower in 2010 and 2011, to sell equipment and entire production line for the manufacturing of thin film solar energy modules to Hanergy Hydropower, its subsidiaries and its affiliates ("Hanergy Hydropower Group"). Details of those contracts are set out in the circulars dated 8 July 2010 and 14 November 2011 respectively.

As at 31 October 2013, Fujian Apollo entered into supplementary sales contracts of two Master Sales Contracts with Hanergy Hydropower. Details of those supplementary sales contracts are set out in the circular dated 12 December 2013.

	Master Sales Contract entered into in 2010 (as supplemented in 2013)	Master Sales Contract entered into in 2011 (as supplemented in 2013)
Total purchase capacity as stipulated in the sales contracts	3,000 MW	7,000 MW
Purchase capacity of module equipment and production lines committed by Hanergy Hydropower Group as at 31 December 2018	0 MW	0 MW
	HK$'mil	*HK$'mil*
Total contract sum	25,800	61,270
Total cumulative advance payment made by Hanergy Hydropower Group as at 31 December 2018	0	0
Contract revenue recognised in:		
For the year ended 31 December 2010	2,310	0
For the year ended 31 December 2011	1,446	1,009
For the year ended 31 December 2012	0	2,756
For the year ended 31 December 2013	0	3,243
For the year ended 31 December 2014	3,102	2,853
For the year ended 31 December 2015	134	(88)
For the year ended 31 December 2016	39	865
For the year ended 31 December 2017	628	434
For the year ended 31 December 2018	0	0

FUTURE OUTLOOK

Global Solar Energy Market

The year 2018 was a year of changes for the solar energy industry. In early 2018, the U.S. government declared a 30% tariff on imported solar panels. On 31 May 2018, the "Notice on Matters in Relation to Photovoltaic Power Generation in 2018" ("531 Notice") was issued by the Chinese government, which provided regulatory measures for the developmental pace of the solar power generation industry and attracted the global attention. The 531 Notice stimulated the active sales efforts made by domestic solar power generation companies to sell excessive inventories to the overseas market. Coupled with the issue of overcapacity, the global solar energy cost was reduced by 12%. Due to lower cost of equipment, the total investment in the global solar energy industry was approximately US$130.8 billion in 2018, representing a decrease of 24% year-on-year.

Despite the policy changes, the global solar energy market continued to grow in 2018, driven by the markets in various countries. According to Energy Trend, an international market research institution, newly installed capacity of solar energy amounted to 103GW in 2018 globally. China remains the country which has the largest newly installed capacity of PV in the world, followed by the United States and India.

The market remains optimistic about the prospect of solar power generation industry around the globe. IHS Markit expects that the global installed capacity of PV will increase to 123GW in 2019, representing an increase of 18% as compared with the estimated newly installed capacity in 2018. PV Infolink, a photovoltaic research institution, also believes that the global solar market will recover in 2019. The global PV installed capacity is expected to increase to 112GW. In particular, the demand in China is expected to reach 40GW or above, and the India and US markets will also see accelerated growth. The increase is mainly driven by the diversified pattern of the global solar power generation market. As the geographical coverage of the PV industry has become more extensive, the PV installed capacity will gradually increase around the world, especially in emerging markets. Meanwhile, positive factors including the gradual decrease of overcapacity, strong growth in the demand overseas and the declining PV power generation cost, have all contributed to the growth of global solar power generation in 2019.

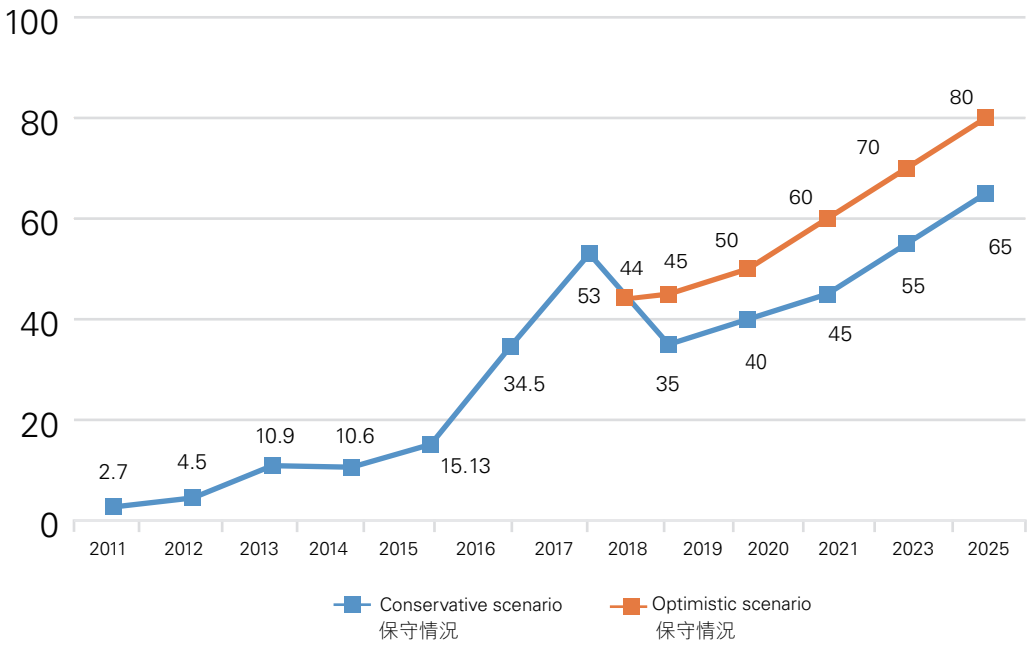
The Solar Energy Market in China

In 2018, China continued to take the leading position in the world in terms of the newly installed capacity and cumulative installed capacity of solar power generation. According to the statistics of the Chinese National Energy Administration (NEA), the cumulative installed capacity of solar power generation in China reached 174GW, representing a year-on-year increase of 34%; the newly installed capacity was more than 44GW, of which, 23GW was attributable to PV power stations and 21GW was attributable to distributed PV.

According to the estimates of China Photovoltaic Industry Association (CPIA), with gradual improvement of solar power curtailment and electricity consumption, and the advancement of the industry reform, the newly installed capacity of PV in the country is expected to reach 40GW or more in 2019, which is likely to rank first in the world again.

Chart 1:

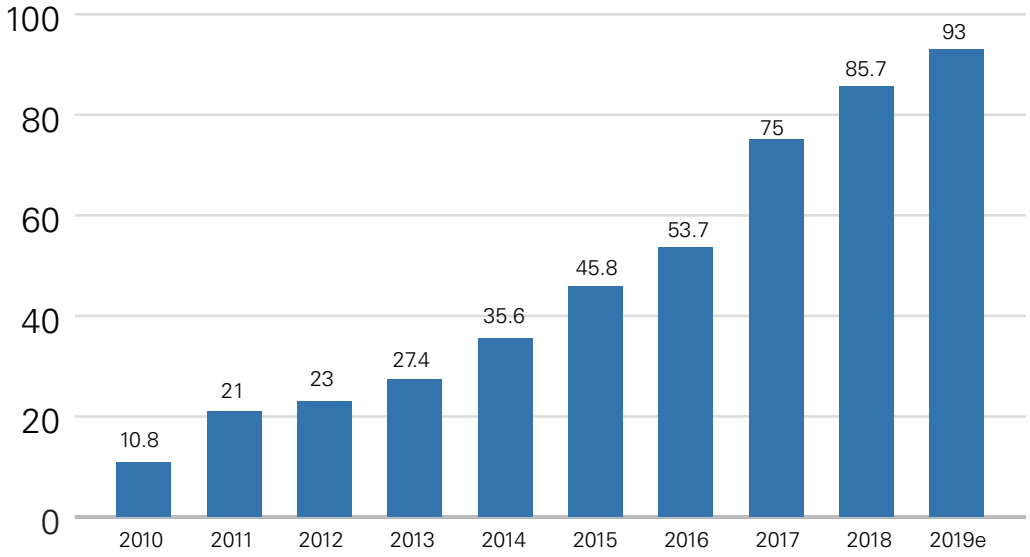
Annual newly installed capacity of PV in 2011-2018 and newly capacity forecasts for 2019-2025 in China (GW)



Source: CPIA

Currently, as modules have been gradually produced domestically with increasing conversion efficiency, the production cost of modules continued to decline, and production output continued to increase. The national production output of modules was 85.7GW in 2018, representing a year-on-year growth of 14%. The production output is expected to continue to increase in 2019.

Chart 2: The production of solar energy modules in China for 2010-2019 (GW)



Source: CPIA

Relevant Policies in China

Action Plan for the Development of Intelligent Photovoltaic Industry (2018-2020)

"The Action Plan for the Development of Intelligent Photovoltaic Industry (2018-2020)" issued by six authorities, including the Ministry of Information and Technology and NEA on 19 April 2018 expressively states the acceleration of the development of advanced manufacturing industry, the enhancement of intelligent manufacturing of solar energy industry, the promotion of profound integration of internet, big data and artificial intelligence with the solar energy industry, the encouragement of solar energy intelligent applications in distinctive industry and the facilitation for the development of China's solar energy industry towards the middle and high end of global value chain.

Notice on Matters Concerning Easing Burden of Enterprises in Renewable Energy Sector

In April 2018, NEA issued the "Notice on Matters Concerning Easing Burden of Enterprises in Renewable Energy Sector", which requires the stringent compliance of the Renewable Energy Law to ensure the healthy development of the renewable energy sector; the optimisation of investment environment to reduce the development cost of renewable energy exploitation; implementation of the initiative of "simplified procedures, supervision enhancement and service optimisation" for public services in a bid to stimulate market. The notice provides favorable conditions in respect of market consumption and grid connections, land use measures, financial supports and enhancement of government services and functions for the renewable energy industry, which will ease the investment and operational burden of enterprises in the renewable energy sector, and lead to further cost reduction of renewable energy.

Notice on Matters in Relation to Photovoltaic Power Generation in 2018

On 31 May 2018, the "Notice on Matters in Relation to Photovoltaic Power Generation in 2018" was jointly issued by NDRC, the Ministry of Finance and NEA, which stated that no planned capacity projects for general solar energy power stations construction is arranged for 2018, and 10GW capacity is constructed for the distributed solar energy projects, reducing the on-grid tariff.

As stated in the Notice, the policy aims to promote the healthy and sustainable development of the photovoltaic industry. Notwithstanding that the 531 Notice reduces the subsidy level and regulates the newly constructed capacity of PV power generation, the Chinese government's long-term planning for the solar power generation industry and the support of distributed solar power generation will continue in promoting the development of solar energy industry in China. The Group believes that the release of the notice will motivate the transformation and innovation of enterprises and optimize the layout of solar energy industry.

Notice on Matters Concerning the Grant of Incentives to Leading Bases of PV Power Generation

On 16 October 2018, the General Department of NEA issued a letter requesting opinions on the "Notice on Matters Concerning the Grant of Incentives to Leading Bases of PV Power Generation" from relevant NDRC (NEA) agencies in relation to the grant of incentives to leading bases as stated in Guo Neng Fa Xin Neng [2017] No. 54.

The notice states that priority or bonus points, if applicable, shall be given to the bases which strictly comply with the requirements, produce as scheduled with output passing the inspection for acceptance (including the second phase). Three incentives of construction capacity totaling 1.5 million KW are granted to the leading bases of PV power generation in 2017.

The Company's Vision on Future Development

Implement the "One Base and Two Fronts" Strategy and Expand Diversified Customer Base

The Group will continue to adopt the strategic deployment of "One Base and Two Fronts" in the coming year, that is, based on the continuous innovation of thin film solar technology, and with 'turnkey' solutions for manufacturing equipment and production lines on the left front, and solutions for distributed energy and mobile energy on the right front, it will firmly grasp the opportunities arising from the extensive changes of global energy structure and the rapid development of the thin film solar industry, focusing on the upstream business of equipment production lines, and the downstream business of distributed and mobile energy.

In terms of upstream business, the Group will continue to invest in the research and development of thin film solar technology, and accelerate the localisation of thin film solar equipment production lines, in an effort to achieve 100% localisation rate of equipment production lines of all technology lines of the Group. It will also continue to promote the industrialization, marketization and popularization of thin film solar technology through the cooperation with mobile energy intelligent manufacturing bases in different regions.

Regarding downstream business, in addition to the traditional household and industrial and commercial rooftop power generation systems, the Group will continue to focus on new energy green buildings and mobile energy applications, to build an ecosphere of mobile energy and provide solutions for "Eco-City" through a comprehensive layout of energy in cities. In addition, with the national new energy development strategy, the Group has actively engaged in precision poverty alleviation, by making full use of the land resources of rural poor households to help the poor to realize precision poverty alleviation with additional income.

Continuous Innovation and Research and Development to Make Further Breakthroughs

In response to the global trend of low-carbon, green and clean energy, the Group has continued to innovate products by leveraging on its innovative scientific research capabilities. In 2018, significant progress in research and development of thin film solar energy application products was made. In April, the Group launched an innovative product, a new generation of HanTile and "Humbrella", the first multi-functional umbrella based on flexible thin film solar technology in the world. Its first batch of production was donated to Tanzania for the charity project "Lighting Africa". New mobile energy applications such as HanPack and HanPaper were also introduced in June, attracting a lot of market attention. In September, we launched another disruptive new product - "HanWall", which is characterizd by its safety and power generation efficiency, and has become the first "green power generation wall system solution" in the world. Since the launch of such new products, we have immediately attracted collaboration from Australia and Japan, demonstrating that the Group has been recognised by customers around the world through product innovation and quality.

Looking forward to 2019, the Group will continue to put more resources in the research and development of product innovation, focusing on three major areas including housing, usage and transportation, constantly develop and introduce new thin-film solar energy solutions, in response to both domestic and international market demand and in line with green buildings and travel trends, and provide users with more comprehensive and convenient mobile power using experience, so as to further consolidate the Group's leading position in the high-tech thin film solar industry.

Focus on Mobile Solar Energy Development and Strengthen the Leading Position in Technology

In recent years, through continuous technological breakthroughs and innovative research and development, the Group has focused on the development of innovative thin-film solar mobile energy applications, including foldable thin-film solar power generation paper, power generation pack, power generation umbrella and other portable mobile energy products to satisfy the market needs. Hanergy has endeavored to expand the application of thin-film solar technology in more fields, and has applied thin-film solar cells in various mobile transportations, including shared bicycles, logistics fleets, unmanned aircrafts, solar-powered vehicles and low-speed electric vehicles. With the energy reform, a new way of life is forming and an exosphere of mobile energy is being created to provide solutions for "Eco-City".

In 2018, the Group entered into a product strategic cooperation agreement with China FAW Group, to commence multi-directional strategic cooperation on the theme of "Green Energy and Energy Conservation". This is an innovative breakthrough in the area of passenger vehicle with the first solar energy sunroof. In addition, since the Group's high-efficiency thin-film solar chip technology has been favored by the National Aeronautics and Space Administration (NASA) and Boeing Company, the giant in the US aviation industry, various projects have been carried out through the cooperation between the Group and NASA and Boeing Company, promoting the in-depth application and further expansion of solar energy technology in the aerospace sector. The robust development of mobile solar energy contributes to energy conservation, emission reduction, environmental protection and cutting-edge applications. The Group also intends to expand the business and cooperation in this sector in the future.

Looking forward to 2019, the Group will, leveraging on its high-tech R&D capabilities and economies of scale, continue to push forward the turnkey projects of thin film solar production lines for mobile energy industrial parks and other new clients in respect of our upstream business, and expand the solar energy applications in areas including distributed power and mobile energy for downstream business, by actively exploring the diversified applications of thin-film solar energy for the pursuit of further innovations. Meanwhile, the Group will continue to capture the opportunity arising from the state's favourable policies on clean energies and ride on the global trend of solar energy power generation, by actively expanding domestic and overseas businesses, and further capitalizing on its leading role as a provider of high-tech thin-film solar energy solutions, in order to bring thin film solar energy power generation to a bigger market for unlimited number of applications!

SUSPENSION OF TRADING

Trading in the Company's shares has been suspended with effect from 10:40 a.m. on 20 May 2015. The Company received a letter from the Securities and Futures Commission ("SFC") dated 15 July 2015 in relation to the Rule 8(1) direction of Stock Market Rules, in which SFC directed the Stock Exchange to suspend trading in the securities of the Company. As of 31 December 2018, the shares of the Company remained suspended. A separate announcement on further information, if any, will be made in due course to inform the shareholders and potential investors of the Company.

Amendments to the delisting framework under the Rules Governing the Listing of Securities (the "Listing Rules") on The Stock Exchange of Hong Kong Limited (the "Stock Exchange") have been made, with the effect from 1 August 2018 ("Effective Date"). The transitional arrangements for the amendments to the delisting framework will apply to the Company. As the shares of the Company have been suspended from trading for more than 12 months, in accordance with Rule 6.01A(2)(b)(ii) of the Listing Rules, the Stock Exchange may cancel the Company's listing if trading in the shares has remained suspended for 12 consecutive months from the Effective Date. The 12-month period will expire on 31 July 2019. If the Company fails to resume trading in the shares of the Company by 31 July 2019, the Listing Department of the Stock Exchange will recommend the Listing Committee of the Stock Exchange to proceed with the cancellation of the Company's listing. This is subject to the Stock Exchange's right to impose a shorter specific remedial period under Rule 6.10 of the Listing Rules where appropriate.

DIVIDEND

The Board does not recommend to declare a final dividend for the year ended 31 December 2018 (2017: Nil).

The dividend policy of the Company will be disclosed in the annual report for the year ended 31 December 2018 in compliance with the Listing Rules.

LIQUIDITY AND FINANCIAL RESOURCES

As at 31 December 2018, the Group had interest-bearing bank and other borrowings of HK$686,793,000 (31 December 2017: HK$1,126,008,000) while the cash and cash equivalents amounted to approximately HK$359,049,000 (31 December 2017: approximately HK$2,496,760,000). Gearing ratio (total debt less cash and cash equivalent, tax payable, deferred income, other noncurrent liabilities and deferred tax liabilities ("Net Debt") over adjusted capital and net debt) as at 31 December 2018 was 49.00% (31 December 2017: 47.86%).

TREASURY POLICIES AND EXCHANGE & OTHER EXPOSURES

The Group's monetary transactions and deposits continued to be in the form of US dollars, Renminbi and Hong Kong dollars. The Group expected that the exposure to exchange rates fluctuation was not significant and therefore had not engaged in any hedging activities.

CONTINGENT LIABILITIES

The Group did not have any significant contingent liabilities as at 31 December 2018 (31 December 2017: Nil).

PERSONNEL

The number of employees of the Group as at 31 December 2018 was 6,542 (31 December 2017: 4,250) of whom 3,334 (31 December 2017: 695) were office administration staff. Remuneration of employees and directors are determined according to individual performance and the prevailing trends in different areas and reviewed on an annual basis. The Group has also contributed mandatory provident fund, retirement funds and provided medical insurance to its employees. Bonuses are awarded based on individual performance and overall Group performance, and are made to certain employees of the Group.

ANNUAL GENERAL MEETING AND CLOSURE OF REGISTER OF MEMBERS

To ascertain the entitlement to attend and vote at the AGM to be held on Wednesday, 12 June 2019, the register of members of the Company will be closed from Friday, 7 June 2019 to Wednesday, 12 June 2019 (both dates inclusive) during which period no transfer of shares will be registered. In order to qualify for attending and voting at the AGM, all properly completed transfer forms accompanied by the relevant share certificates must be lodged with the Company's branch share registrar and transfer office in Hong Kong, Tricor Tengis Limited, at Level 22, Hopewell Centre, 183 Queen's Road East, Wanchai, Hong Kong not later than 4:30 p.m. on Thursday, 6 June 2019.

PURCHASE, SALE OR REDEMPTION OF LISTED SECURITIES

Neither the Company nor any of its subsidiaries purchased, redeemed or sold any of the Company's listed securities for the year ended 31 December 2018.

MODEL CODE FOR SECURITIES TRANSACTIONS BY DIRECTORS OF THE COMPANY

The Company has adopted a code of conduct (the "**Model Code**") regarding securities transactions by the Directors on terms no less exacting than the required standard set out in Appendix 10 to the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited ("**Stock Exchange**") (the "**Listing Rules**"). Having made specific enquiry to all Directors, the Directors confirmed that they had complied with the required standard set out in the Model Code and the code of conduct regarding securities transactions by Directors adopted by the Company.

COMPLIANCE WITH THE CORPORATE GOVERNANCE CODE

The Company has complied with the code provisions of the Corporate Governance Code as set out in Appendix 14 of the Listing Rules during the year ended 31 December 2018.

REVIEW OF FINANCIAL STATEMENTS

The audit committee of the Company, comprising Professor Zhang Qiusheng (Chairman of Committee), Mr. Lo Man Tuen. G.B.S. JP, Professor He Xiaofeng and Mr. Wang Dan, has reviewed with management and approved the consolidated financial statements of the Company for the year ended 31 December 2018.

PUBLICATION OF ANNUAL REPORT

The annual report of the Company for the year ended 31 December 2018 containing all information required by the Listing Rules will be despatched to the Company's shareholders and published on the website of the Stock Exchange and the website of the Company in due course in compliance with the Listing Rules.

On behalf of the Board
Hanergy Thin Film Power Group Limited
Yuan Yabin
Chairman

Beijing, the PRC, 29 March 2019

As at the date of this announcement, the executive directors of the Company are Mr. Yuan Yabin (Chairman), Dr. Lam Yat Ming Eddie (Vice Chairman), Mr. Si Haijian (Chief Executive Officer), Mr. Huang Songchun (Financial Controller), Mr. Xu Xiaohua and Mr. Zhang Bin; and the independent non-executive directors of the Company are Mr. Lo Man Tuen, G.B.S., JP, Professor He Xiaofeng, Professor Zhang Qiusheng and Mr. Wang Dan.