HUANENG POWER INTERNATIONAL INC
Form 20-F
April 17, 2017
HUANENG POWER INTERNATIONAL, INC.

Annual Report On Form 20-F
2016

As filed with the Securities and Exchange Commission on April 17, 2017

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

_____

FORM 20-F
(Mark One)
REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934
OR
ANNUAL REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2016
OR
TRANSITION REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934
OR
SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
Date of event requiring this shell company report
For the transaction period form _____to _____
Commission file number: 1-13314

HUANENG POWER INTERNATIONAL, INC.
(Exact name of Registrant as specified in its charter)

PEOPLE'S REPUBLIC OF CHINA
(Jurisdiction of incorporation or organization)
HUANENG BUILDING
6 FUXINGMENNEI STREET, XICHENG DISTRICT, BEIJING, PEOPLE'S REPUBLIC OF CHINA
(Address of principal executive offices)
Mr. Du Daming
HUANENG BUILDING,
6 FUXINGMENNEI STREET, XICHENG DISTRICT, BEIJING, PEOPLE'S REPUBLIC OF CHINA
Tel: +86 (10) 6322 6999 Fax: +86 (10) 6322 6888
(Name, Telephone, Email and/or Facsimile number and Address of Company Contact Person)
Securities registered or to be registered pursuant to Section 12(b) of the Act.

Title of Each Class	Name of each exchange on which registered
American Depositary Shares Each Representing 40 Overseas Listed Shares	New York Stock Exchange
Overseas Listed Shares with Par Value of RMB1.00 Per Share	New York Stock Exchange*

Securities registered or to be registered pursuant to Section 12(g) of the Act.
NONE
(Title of Class)

_____

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act.
NONE
(Title of Class)

_____

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report:

Domestic A Shares with Par Value of RMB1.00 Per Share	10,500,000,000
Overseas Listed Shares with Par Value of RMB1.00 Per Share	4,700,383,440

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
Yes No
If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.
Yes No
Note - Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 from their obligations under those Sections.
Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer Accelerated filer Non-accelerated filer

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP International Financial Reporting Standards as issued by the International Accounting Standards Board Other

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow.

Item 17 Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

(APPLICABLE ONLY TO ISSUERS INVOLVED IN BANKRUPTCY PROCEEDINGS DURING THE PAST FIVE YEARS)

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Sections 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court.

Yes No

---

* Not for trading, but only in connection with the registration of American Depositary Shares

TABLE OF CONTENTS

INTRODUCTION

We maintain our accounts in Renminbi Yuan ("Renminbi" or "RMB"), the lawful currency of the People's Republic of China (the "PRC" or "China"). References herein to "US$" or "U.S. dollars" are to United States Dollars, references to "HK$" are to Hong Kong Dollars, and references to "S$" are to Singapore Dollars. References to ADRs and ADSs are to American Depositary Receipts and American Depositary Shares, respectively. Translations of amounts from Renminbi to U.S. Dollars are solely for the convenience of the reader. Unless otherwise indicated, any translations from Renminbi to U.S. Dollars or from U.S. Dollars to Renminbi were translated at the average rate announced by the People's Bank of China (the "PBOC Rate") on December 31, 2016 of US$1.00 to RMB6.9370. No representation is made that the Renminbi or U.S. Dollar amounts referred to herein could have been or could be converted into U.S. Dollars or Renminbi, as the case may be, at the PBOC Rate or at all.

References to "A Shares" are to common tradable shares issued to domestic shareholders.

References to the "central government" refer to the national government of the PRC and its various ministries, agencies and commissions.

References to the "Company", "we", "our" and "us" include, unless the context requires otherwise, Huaneng Power International, Inc. and the operations of our power plants and our construction projects.

References to "HIPDC" are to Huaneng International Power Development Corporation and, unless the context requires otherwise, include the operations of the Company prior to the formation of the Company on June 30, 1994.

References to "Huaneng Group" are to China Huaneng Group.

References to "local governments" in the PRC are to governments at all administrative levels below the central government, including provincial governments, governments of municipalities directly under the central government, municipal and city governments, county governments and township governments.

References to "our power plants" are to the power plants that are wholly owned by the Company or to the power plants in which the Company owns majority equity interests.

References to the "PRC Government" include the central government and local governments.

References to "provinces" include provinces, autonomous regions and municipalities directly under the central government.

References to "Singapore" are to the Republic of Singapore.

References to the "State Plan" refer to the plans devised and implemented by the PRC Government in relation to the economic and social development of the PRC.

References to "tons" are to metric tons.

Previously, the Overseas Listed Foreign Shares were also referred to as the "Class N Ordinary Shares" or "N Shares". Since January 21, 1998, the date on which the Overseas Listed Foreign Shares were listed on The Stock Exchange of Hong Kong Limited by way of introduction, the Overseas Listed Foreign Shares have been also referred to as "H Shares".

GLOSSARY

actual generation	The total amount of electricity generated by a power plant over a given period of time.
auxiliary power	Electricity consumed by a power plant in the course of generation.
availability factor	For any period, the ratio (expressed as a percentage) of a power plant's available hours to the total number of hours in such period.
available hours	For a power plant for any period, the total number of hours in such period less the total number of hours attributable to scheduled maintenance and planned overhauls as well as to forced outages, adjusted for partial capacity outage hours.
capacity factor	The ratio (expressed as a percentage) of the gross amount of electricity generated by a power plant in a given period to the product of (i) the number of hours in the given period multiplied by (ii) the power plant's installed capacity.
demand	For an integrated power system, the amount of power demanded by consumers of energy at any point in time.
dispatch	The schedule of production for all the generating units on a power system, generally varying from moment to moment to match production with power requirements. As a verb, to dispatch a plant means to direct the plant to operate.
GW	Gigawatt. One million kilowatts.
GWh	Gigawatt-hour. One million kilowatt-hours. GWh is typically used as a measure for the annual energy production of large power plants.
installed capacity	The manufacturers' rated power output of a generating unit or a power plant, usually denominated in MW.
kV	Kilovolt. One thousand volts.
kW	Kilowatt. One thousand watts.
kWh	Kilowatt-hour. The standard unit of energy used in the electric power industry. One kilowatt-hour is the amount of energy that would be produced by a generator producing one thousand watts for one hour.
MVA	Million volt-amperes. A unit of measure used to express the capacity of electrical transmission equipment such as transformers.
MW	Megawatt. One million watts. The installed capacity of power plants is generally expressed in MW.
MWh	Megawatt-hour. One thousand kilowatt-hours.
peak load	The maximum demand on a power plant or power system during a specific period of time.

planned generation	An annually determined target gross generation level for each of our operating power plants used as the basis for determining planned output.
total output	The actual amount of electricity sold by a power plant in a particular year, which equals total generation less auxiliary power.
transmission losses	Electric energy that is lost in transmission lines and therefore is unavailable for use.

v

PART I

ITEM 1 Identity of Directors, Senior Management and Advisers

Not applicable.

ITEM 2 Offer Statistics and Expected Timetable

Not applicable.

ITEM 3 Key Information

A. Selected financial data

Our consolidated data of financial position as of December 31, 2016 and 2015 and the consolidated income statement and cash flow data for each of the years in the three-year period ended December 31, 2016 are derived from the historical financial statements included herein. Our consolidated data of financial position as of December 31, 2014, 2013 and 2012 and consolidated income statement and cash flow data for each of the years in the two-year period ended December 31, 2013, are derived from the historical financial statements not included herein. The Selected Financial Data should be read in conjunction with the consolidated financial statements and "Item 5 Operating and Financial Reviews and Prospects". The financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board. The Selected Financial Data may not be indicative of future earnings, cash flows or financial position.

	Year Ended December 31,				
	2012	2013	2014	2015	2016
RMB in thousands except per share data	(RMB)	(RMB)	(RMB)	(RMB)	(RMB)
Consolidated Income Statement Data					
Operating revenue	133,966,659	133,832,875	125,406,855	128,904,873	113,814,236
Tax and levies on operations	(672,040)	(1,043,855)	(932,485)	(1,157,760)	(1,177,818)
Operating expenses	(116,337,679)	(108,677,981)	(99,199,728)	(98,604,187)	(94,258,678)
Profit from operations	16,956,940	24,111,039	25,274,642	29,142,926	18,377,740
Interest income	175,402	170,723	159,550	160,723	147,063
Financial expenses, net	(9,063,875)	(7,693,363)	(7,823,606)	(7,970,070)	(7,067,602)
Other investment income	187,131	224,908	80,580	115,238	1,070,034
(Loss)/Gain on fair value changes of financial assets/liabilities	(1,171)	(5,701)	42,538	(16,742)	(12,986)
Share of profits less losses of associates and joint ventures	622,358	615,083	1,315,876	1,525,975	1,298,889
Profit before income tax expense	8,876,785	17,422,689	19,049,580	22,958,050	13,813,138
Income tax expense	(2,510,370)	(4,522,671)	(5,487,208)	(5,698,943)	(3,465,151)
Net profit	6,366,415	12,900,018	13,562,372	17,259,107	10,347,987
Attributable to:					
Equity holders of the Company	5,512,454	10,426,024	10,757,317	13,651,933	8,520,427
Non-controlling interests	853,961	2,473,994	2,805,055	3,607,174	1,827,560
Basic earnings per share	0.39	0.74	0.76	0.94	0.56
Diluted earnings per share	0.39	0.74	0.76	0.94	0.56

	As of December 31,				
RMB in thousands	2012 (RMB)	2013 (RMB)	2014 (RMB)	2015 (RMB)	2016 (RMB)
Consolidated Financial Position Data					
Current assets	36,086,261	34,186,911	37,865,284	33,565,403	36,966,616
Property, plant and equipment	177,013,627	181,415,181	188,379,057	219,673,070	223,061,809
Available-for-sale financial assets	3,052,822	3,111,164	4,333,377	5,077,863	3,406,032
Investments in associates and joint ventures	14,596,771	16,678,694	17,626,910	19,745,192	19,632,113
Land use rights and other non-current assets	9,316,455	9,593,252	10,636,352	14,384,078	14,524,284
Power generation license	4,084,506	3,837,169	3,720,959	3,679,175	3,849,199
Deferred income tax assets	532,387	652,358	884,274	1,064,391	1,263,957
Goodwill	14,417,543	12,758,031	11,725,555	11,677,182	12,135,729
Total assets	259,100,372	262,232,760	275,171,768	308,866,354	314,839,739
Current liabilities	(93,594,320)	(98,978,845)	(104,846,121)	(123,836,633)	(130,196,251)
Non-current liabilities	(99,545,710)	(88,060,941)	(85,542,941)	(83,336,032)	(82,456,751)
Total liabilities	(193,140,030)	(187,039,786)	(190,389,062)	(207,172,665)	(212,653,002)
Total equity	65,960,342	75,192,974	84,782,706	101,693,689	102,186,737

	Year Ended December 31,				
RMB in thousands except per share data	2012 (RMB)	2013 (RMB)	2014 (RMB)	2015 (RMB)	2016 (RMB)
Consolidated Cash Flow Data					
Purchase of property, plant and equipment	(15,474,614)	(17,691,382)	(19,858,216)	(24,191,285)	(20,144,903)
Net cash provided by operating activities	26,928,082	40,239,429	33,320,067	42,362,708	31,510,824
Net cash used in investing activities	(15,309,604)	(19,054,250)	(19,470,813)	(33,015,012)	(17,649,646)
Net cash used in financing activities	(9,816,900)	(22,240,088)	(10,894,180)	(14,140,659)	(13,601,850)
Other Company Data					
Dividend declared per share	0.21	0.38	0.38	0.47	0.29
Number of ordinary shares ('000)	14,055,383	14,055,383	14,420,383	15,200,383	15,200,383

B. Capitalization and indebtedness

Not applicable.

C. Reasons for the offer and use of proceeds

Not applicable.

D. Risk factors

Risks relating to our business and the PRC's power industry

Government regulation of on-grid power tariffs and other aspects of the power industry may adversely affect our business

Similar to electric power companies in other countries, we are subject to governmental and electric grid regulations in virtually all aspects of our operations, including the amount and timing of electricity generations, the setting of on-grid tariffs, the performance of scheduled maintenance, and the compliance with power grid control and dispatch directives as well as environment protection regulations. There can be no assurance that these regulations will not change in the future in a manner which could adversely affect our business.

The on-grid tariffs for our planned output are subject to a review and approval process involving the NDRC and the relevant provincial government. Since April 2001, the PRC Government has been implementing an on-grid tariff-setting mechanism based on the operating terms of power plants as well as the average costs of comparable power plants. Pursuant to the NDRC circular issued in June 2004, the on-grid tariffs for our newly built power generating units commencing operation from June 2004 have been set on the basis of the average cost of comparable units adding tax and reasonable return in the regional grid. Any future reductions in our tariffs, or our inability to raise tariffs (for example, to cover any increased costs we may have to incur) as a result of the new on-grid tariff-setting mechanism, may adversely affect our revenue and profits.

In addition, the PRC Government started a program in 1999 to effect power sales through competitive bidding in some of the provinces where we operate our power plants. The on-grid tariffs for power sold through competitive bidding are generally lower than the pre-approved on-grid tariffs for planned output. In the more recent few years, power sales through competitive bidding only accounted for a small portion of our overall power sales. Nevertheless, the PRC Government is seeking to expand the program. Any increased power sales through competitive bidding may reduce our on-grid tariffs and may adversely affect our revenue and profits.

Furthermore, the PRC Government started in 2009 to promote the practice of direct power purchase by large power end-users. Pursuant to the circular jointly issued by NDRC, the State Electricity Regulatory Commission ("SERC") and China National Energy Administration in June 2009, the direct transaction price shall be freely determined through negotiation between the power generation company and the large power end-user. The price of direct power purchase shall be subject to the supply and demand in the power market. Furthermore, the scale and mode of the transaction are also subject to the structure and level of development of local economy. In terms of power generation companies engaged in direct power purchase, direct power sales constitute a portion of the total power sales and the on-grid power tariffs for this portion are generally lower than the benchmark tariff of each region, thus affecting the on-grid power sales of the Company. For the past few years, the PRC Government continued the reform in the area of direct power purchase by large power end-users. In 2013, China National Energy Administration officially launched the direct power purchase program in seven provinces where we have power plants and the program has been steadily rolled out in other provinces, Although the direct power purchase may act as an alternative channel for our power sales, there is uncertainty as to the effect of the practice of direct power purchase over our operating results.

The on-grid tariff-setting mechanism is evolving with the reforming of the PRC electric power industry. The PRC government announced a number of development and reform plans for the power market in 2016, covering areas including laws and regulations, power transmission and distribution prices and supply side dynamics. There is no assurance that it will not change in a manner which could adversely affect our business and results of operations. See "Item 4 Information of the Company – B. Business Overview – Pricing Policy".

If our power plants receive less dispatching than planned generation, the power plants will sell less electricity than planned

Our profitability depends, in part, upon each of our power plants generating electricity to meet the planned generation, which in turn will be subject to local demand for electric power and dispatching to the grids by the dispatch centers of the local grid companies.

The dispatch of electric power generated by a power plant is controlled by the dispatch center of the applicable grid companies pursuant to a dispatch agreement with us and to governmental dispatch regulations. In each of the markets we operate, we compete against other power plants for power sales. No assurance can be given that the dispatch centers will dispatch the full amount of the planned generation of our power plants. A reduction by the dispatch center in the amount of electric power dispatched relative to a power plant's planned generation could

have an adverse effect on the profitability of our operations. However, we have not encountered any such event in the past.

In August 2007, the General Office of the State Council issued a notice, promoting the energy saving electricity dispatch policy, which provides dispatching priority to electricity generated from renewable resources over electricity generated from unrenewable resources. For past years, the government made continuous effort to improve energy saving, emission reduction and resources allocation. In 2015, the NDRC and China National Energy Administration jointly issued Guidelines on Improving Electric Power Operations and Deepening Clean Energy Generation confirming a system ensuring the full-priced purchasing of renewable energy, and requests furthering the electric power differentiation system on coal-fired units. In 2016, the NDRC and China National Energy Administration issued three official documents, namely Notice on Issuing the Measures for the Administration of the Guaranteed Buyout of Electricity Generated by Renewable Energy Resources, Directive on the Measures for the Administration of the Guaranteed Buyout of Electricity Generated by Solar and Wind Energy Resources and Provisionary Measures for Priority Dispatch of Renewable Peaking Power Generation Units, to further develop the system ensuring the full-priced purchasing of renewable energy and to encourage renewable energy producers to join the market for peaking power supplies. We cannot assure that such implementation will not result in any decrease in the amount of the power dispatched by any of our power plants.

The power industry reform may affect our business

The PRC Government in 2002 announced and started to implement measures to further reform the power industry, with the ultimate goal of creating a more open and fair power market. As part of the reform, five power generation companies, including Huaneng Group, were created or restructured to take over all the power generation assets originally belonging to the State Power Corporation of China. In addition, two grid companies were created to take over the power transmission and distribution assets originally belonging to the State Power Corporation of China. An independent power supervisory commission, the SERC, was created to regulate the power industry. There might be further reforms, and it is uncertain how these reform measures and any further reforms will be implemented and impact our business.

In December 2012, the PRC Government issued a notice to further reform the coal pricing mechanism, which mandated (1) the termination of all key coal purchase contracts between power generation companies and coal suppliers, and the abolition of national guidance of the railway transportation capacity plan, and (2) the cancellation of the dual-track coal pricing system, effective from January 1, 2013. For a detailed discussion of the reform, see "Item 4 Information on the Company – B. Business overview – Pricing policy". There can be no assurance that such coal pricing reform will not adversely affect our results of operation. In 2013, the PRC Government continued the reform in power industry. In July 2013, China National Energy Administration issued the Notice on Direct Purchases between Power End-users and Power Generation Companies, which officially implemented the direct purchases programs by large end-users.

On March 15, 2015, the Opinions of CPC Central Committee and State Council Regarding Further Deepening Reform of the Electricity System was released, according to which the reform will be focused and directed to orderly liberalize the tariff of the competitive markets other than electricity transmission and distribution, gradually allow investment from private investors in power distribution and selling businesses, consistently open the power generation market other than those for non-profit purpose or under regulation, push for independent and regulated operation of the parties involved in electricity transactions, continue the study of regional power grid construction and the transmission and distribution system suitable for China, further strengthen government regulations for enhanced power coordination and planning, and further improve safe and efficient operation of electricity and reliable power supply. These reforms will have a profound impact on the business models of power generation enterprises and may intensify the competition which may adversely affect our business.

In November 2015, the NDRC and China Energy Administration issued six official documents regarding electricity system reform, namely Opinions on Deepening Electricity Price Reform, Opinions on Furthering Electricity Market Development, Opinions on Establishing and Institutionalizing Electricity Purchasing Organizations, Opinions on Orderly Open Up Electricity Generation and Consumption, Opinions on Deepening Electricity Sales Reform and Guidelines on Fortifying and Institutionalizing the Management of Coal-fired Power Plants, further confirming the direction of the newest round of reforms of the electricity system.

In 2016, the PRC Government implemented various measures to further reform the power industry on many fronts, including (i) seeking public comments on the proposed amendment to the electric power law of the People's Republic of China, (ii) implementing structural reform pilot programs in nineteen provinces; (iii) establishing national electricity exchanges in Beijing and Guangzhou, (iii) setting up independent third party credit rating system for market players, (iv) promulgating rules governing the price and method of direct power purchase/competitive bidding programs as well as the market entrance and exit mechanism, and (v) furthering reform on the pricing mechanism for power transmission and distribution prices. These reform actions will have profound impact on the operations of power generation companies and may intensify competition, which may negatively impact our company.

We are effectively controlled by Huaneng Group and HIPDC, whose interests may differ from those of our other shareholders

Huaneng Group, directly or indirectly holds 13.83% of our total outstanding shares, and HIPDC directly holds 33.33% of our total outstanding shares. As Huaneng Group is HIPDC's parent company, they may exert effective control over us acting in concert. Their interests may sometimes conflict with those of our other minority shareholders. There is no assurance that Huaneng Group and HIPDC will always vote their shares, or direct the directors nominated by them to act in a way that will benefit our other minority shareholders.

Disruption in coal supply and its transportation as well as increase in coal price may adversely affect the normal operation of our power plants

A substantial majority of our power plants are fueled by coal. The coal supply for our power plants is arranged through free negotiation between power companies, coal suppliers, and railway authorities. Thus, any material disruption in coal supply and its transportation may adversely affect our operations. To date, we have not experienced shutdowns or reduced electricity generation caused by inadequate coal supply or transportation services.

In addition, our results of operations are sensitive to the fluctuation of coal price. For the past few years, the Chinese coal market was showing a surplus in production, resulting in a significantly decreased coal price. However, the policies of reducing overcapacity of the Chinese coal producers implemented in early 2016 led to a supply shortage with surging coal prices in the Chinese coal market. There is no assurance that this increase in coal prices will not continue in the future, and if the price increase does continue, there is no assurance that we will be able to adjust our power tariff to pass on the increase in the coal price in time. Although the government has established a coal-electricity price linkage mechanism to allow power generation companies to increase their power tariffs to cope with the increase in the coal price, the implementation of the mechanism involves uncertainties. For a detailed discussion of the coal-electricity price linkage mechanism, see "Item 4 Information on the Company – B. Business overview – Pricing policy".

Power plant development, acquisition and construction are a complex and time-consuming process, the delay of which may negatively affect the implementation of our growth strategy

We develop, construct, manage and operate large power plants. Our success depends upon our ability to secure all required PRC Government approvals, power sales and dispatch agreements, construction contracts, fuel supply and transportation and electricity transmission arrangements. Delay or failure to secure any of these could increase cost or delay or prevent commercial operation of the affected power plant. Although each of our power plants in operation and the power plants under construction received all required PRC Government approvals in a timely fashion, no assurances can be given that all the future projects will receive approvals in a timely fashion or at all. In addition, due to national policies and related regulations promoting environment-friendly energy and the restrictions on coal fired projects, the approval requirements and procedures for coal fired power plant are becoming increasingly stringent, which may negatively affect the approval process of our new projects of this kind.

We have generally acted as, and intend to continue to act as, the general contractor for the construction of our power plants. As with any major infrastructure construction effort, the construction of a power plant involves many risks, including shortages of equipment, material and labor, labor disturbances, accidents, inclement weather, unforeseen engineering, environmental, geological, delays and other problems and unanticipated cost increases, any of which could give rise to delays or cost overruns. Construction delays may result in loss of revenues. Failure to

complete construction according to specifications may result in liabilities, decrease power plant efficiency, increase operating costs and reduce earnings. Although the construction of each of our power plants was completed on or ahead of schedule and within its budget, no assurance can be given that construction of future projects will be completed on schedule or within budget.

In addition, from time to time, we may acquire existing power plants from HIPDC, Huaneng Group or other parties. The timing and the likelihood of the consummation of any such acquisitions will depend, among other things, on our ability to obtain financing and relevant PRC Government approvals and to negotiate relevant agreements for terms acceptable to us.

Substantial capital is required for investing in or acquiring new power plants and failure to obtain capital on reasonable commercial terms will increase our finance cost and cause delay in our expansion plans

An important component of our growth strategy is to develop new power plants and acquire operating power plants and related development rights from HIPDC, Huaneng Group or other companies on commercially reasonable terms. Our ability to arrange financing and the cost of such financing depend on numerous factors, including general economic and capital market conditions, credit availability from banks or other lenders, investor confidence in us and the continued success of our power plants. Although we have not been materially affected by inflation in the past, there is no assurance that we would not be affected in the future. In 2015, the PBOC repeatedly cut down money market rate and reserve ratio to stabilize China's money supply. The PBOC continued to implement a prudent monetary policy, with moderate and timely adjustments in 2016, which helped the Company to manage its financing costs. We expect that that the prudent monetary policy to continue. The interest bearing debts of the Company are mostly denominated in Renminbi, changes in benchmark lending interest rate published by the PBOC will have a direct impact on the Company's cost of debt. In the Singaporean capital market, the SOR interest rate will continue to rise as a result of increase in the interest rates for U.S. dollar denominated loan as well as depreciation of Singapore dollar, which will likely increase the financing costs of Tuas Power. The change of the benchmark lending interest rates published by the PBOC will have direct impact on the borrowing costs of the Company. As a result, we may not be able to carry out our expansion plans due to the failure to obtain financing or increased financing costs. Furthermore, although we have historically been able to obtain financing on terms acceptable to us, there can be no assurance that financing for future power plant developments and acquisitions will be available on terms acceptable to us or, in the event of an equity offering, that such offering will not result in substantial dilution to existing shareholders.

Operation of power plants involves many risks and we may not have enough insurance to cover the economic losses if any of our power plants' ordinary operation is interrupted

The operation of power plants involves many risks and hazards, including breakdown, failure or substandard performance of equipment, improper installation or operation of equipment, labor disturbances, natural disasters, environmental hazards and industrial accidents. The occurrence of material operational problems, including but not limited to the above events, may adversely affect the profitability of a power plant.

Our power plants in the PRC currently maintain insurance coverage that is typical in the electric power industry in the PRC and in amounts that we believe to be adequate. Such insurance, however, may not provide adequate coverage in certain circumstances. In particular, in accordance with industry practice in the PRC, our power plants in the PRC do not generally maintain business interruption insurance, or any third party liability insurance other than that included in construction all-risks insurance or erection all-risks insurance to cover claims in respect of bodily injury or property or environment damage arising from accidents on our property or relating to our operation. Although each of our power plants has a good record of safe operation, there is no assurance that the afore-mentioned accidents will not occur in the future.

If the PRC Government adopts new and stricter environmental laws and additional capital expenditure is required for complying with such laws, the operation of our power plants may be adversely affected and we may be required to make more investment in compliance with these environmental laws

Most of our power plants, being coal-fired power plants, discharge pollutants into the environment. We are subject to central and local government environmental protection laws and regulations, which currently impose

base-level discharge fees for various polluting substances and graduated schedules of fees for the discharge of waste substances. The amounts of discharge fees are determined by the local environmental protection authority based on the periodic inspection of the type and volume of pollution discharges. In addition, such environmental protection laws and regulations also set up the goal for the overall control on the discharge volume of key polluting substances. These laws and regulations impose fines for violations of laws, regulations or decrees and provide for the possible closure by the central government or local government of any power plant which fails to comply with orders requiring it to cease or cure certain activities causing environmental damage. Also, the PRC Government requires thermal power plants to equip all units with desulphurization and denitrification facilities, and sets higher anti-dust standards. In September 2014, the NDRC, the Ministry of Environmental Protection and the China National Energy Administration jointly issued the 2014-2020 Action Plans for Energy Saving, Emission Reduction and Renovation of Coal-fired Generation Units, imposing stricter requirements for efficient and clean development of coal-fired generating plants. Such stringent standards, together with the increase in the discharge fees, will result in the increases in the environmental protection expenditure and operating costs of power plants and may have adverse impact on our operating results.

We attach great importance to the environmental related matters of our existing power plants and our power plants under construction. We have implemented a system that is designed to control pollution caused by our power plants, including the establishment of an environmental protection office at each power plant, adoption of relevant control and evaluation procedures and the installation of certain pollution control equipment. We are also upgrading the super low emission facilities on our coal fired units, which may be completed by the end of year 2017. We believe our environmental protection systems and facilities for the power plants are adequate for us to comply with applicable central government and local government environmental protection laws and regulations. However, the PRC Government may impose new, stricter laws and regulations on environmental protection, which may adversely affect our operations.

The PRC is a party to the Framework Convention on Climate Change ("Climate Change Convention"), which is intended to limit or capture emissions of "greenhouse" gases, such as carbon dioxide. Ceilings on such emissions could limit the production of electricity from fossil fuels, particularly coal, or increase the costs of such production. At present, ceilings on the emissions of "greenhouse" gases have not been assigned to developing countries under the Climate Change Convention. Therefore, the Climate Change Convention would not have a major effect on us in the short term because the PRC as a developing country is not obligated to reduce its emissions of "greenhouse" gases at present, and the PRC Government has not adopted relevant control standards and policies. If the PRC were to agree to such ceilings, or otherwise reduce its reliance on coal-fired power plants, our business prospects could be adversely affected. In addition, pilot carbon emission trading programs have been conducted in certain regions and are expected to be gradually implemented throughout China. This may also adversely affect our business and financial prospects in the future.

Our business benefits from certain PRC Government tax incentives. Expiration of, or changes to, the incentives could adversely affect our operating results

Prior to January 1, 2008, according to the relevant income tax law, domestic enterprises were, in general, subject to statutory income tax of 33% (30% enterprise income tax and 3% local income tax). If these enterprises are located in certain specified locations or cities, or are specifically approved by State Administration of Taxation, a lower tax rate would be applied. Effective from January 1, 1999, in accordance with the practice notes on the PRC income tax laws applicable to foreign invested enterprises investing in energy and transportation infrastructure businesses, a reduced enterprise income tax rate of 15% (after the approval of State Administration of Taxation) was applicable across the country. We applied this rule to all of our wholly owned operating power plants after obtaining the approval of State Administration of Taxation. In addition, certain power plants were exempted from enterprise income tax for two years starting from the first profit-making year, after offsetting all tax losses carried forward from the previous years (at most of five years), followed by a 50% reduction of the applicable tax rate for the next three years. The statutory income tax was assessed individually based on each of their results of operations.

On March 16, 2007, the Enterprise Income Tax Law of PRC, or the New Enterprise Income Tax Law, was enacted, and became effective on January 1, 2008 and was amended on February 24,2017. The New Enterprise Income Tax Law imposes a uniform income tax rate of 25% for domestic enterprises and foreign invested enterprises. Therefore, our power plants subject to a 33% income tax rate prior to January 1, 2008 are subject to a lower tax rate of 25%

starting on January 1, 2008. With regard to our power plants entitled to a reduced enterprise

7

income tax rate of 15% prior to January 1, 2008, their effective tax rate gradually increased to 25% within a five-year transition period commencing on January 1, 2008. Accordingly, the effective tax rate of our wholly owned power plants has increased over time. In addition, although our power plants entitled to tax exemption and reduction under the income tax laws and regulations that are effective prior to the New Enterprise Income Tax Law will continue to enjoy such preferential treatments until the expiration of the same, newly established power plants will not be able to benefit from such tax incentives, unless they can satisfy specific qualifications, if any, provided by then effective laws and regulations on preferential tax treatment.

The increase of applicable income tax rate and elimination of the preferential tax treatment with regard to certain of our power plants may adversely affect our financial condition and results of operations. Moreover, our historical operating results may not be indicative of our operating results for future periods as a result of the expiration of the tax benefits currently available to us.

In addition, according to the New Enterprise Income Tax Law and its implementation rules, any dividends derived from the distributable profits accumulated from January 1, 2008 and paid to the shareholders who are non-resident enterprises in the PRC will be subject to the PRC withholding tax at the rate of 10%. The withholding tax will be exempted if such dividends are derived from the distributable profits accumulated before January 1, 2008. Under a notice issued by the State Administration of Taxation of the PRC on November 6, 2008, we are required to withhold PRC income tax at the rate of 10% on annual dividends paid for 2008 and later years payable to our H Share investors who are non-resident enterprises.

Fluctuations in exchange rates could have an adverse effect on our results of operations and your investment

As a power producer operating mainly in China, we collect most of our revenues in Renminbi and have to convert Renminbi into foreign currencies to (i) repay some of our borrowings which are denominated in foreign currencies, (ii) purchase foreign made equipment and parts for repairs and maintenance, (iii) purchase fuel from overseas suppliers, and (iv) pay out dividend to our overseas shareholders.

The value of the Renminbi against the U.S. dollar and other currencies may fluctuate and is affected by, among other things, changes in China's political and economic conditions. The conversion of Renminbi into foreign currencies, including U.S. dollars, is based on rates set by the PBOC. On July 21, 2005, the PRC government introduced a floating exchange rate system to allow the value of Renminbi to fluctuate within a regulated band based on market supply and demand and by reference to a basket of foreign currencies. Renminbi appreciated by more than 20% against the U.S. dollar between July 2005 and July 2008. Between July 2008 and June 2010, this appreciation halted and the exchange rate between the Renminbi and the U.S. dollar remained within a narrow band. On June 19, 2010, the PBOC decided to further promote the reform of the Renminbi exchange rate formation mechanism, and improve the flexibility of Renminbi exchange rate. The Company and its subsidiaries (both domestic and overseas) have debts denominated in foreign currencies, fluctuations in the exchange rates of Renminbi and Singapore dollar into foreign currencies creates exchange risk for the Company. With the internationalization process and RMB joining the SDR, RMB exchange rate may continue to fluctuate in the future. In August 2015, the PBOC perfected its midpoint rate determination mechanism, which led to a 2% depreciation of Renminbi against the U.S. dollar. However, it is difficult to predict how market forces or PRC or U.S. government policy may impact the exchange rate between the Renminbi and the U.S. dollar in the future. There remains significant international pressure on the PRC Government to further liberalize its currency policy, which could result in further fluctuations in the value of the Renminbi against the U.S. dollar. However, there is no assurance that there will not be a devaluation of Renminbi in the future. If there is such devaluation, our debt servicing cost will increase and the return to our overseas investors may decrease.

Our revenues from SinoSing Power Pte. Ltd. ("SinoSing Power") and its subsidiaries are collected in Singapore dollars. However, commencing from 2008, the operating results of SinoSing Power and its subsidiaries were consolidated into our financial statements, which use Renminbi as the presentation currency. As a result, we are exposed to foreign exchange fluctuations between Renminbi and the Singapore dollar. Appreciation of Renminbi against the Singapore dollar may cause adverse impact on our operation results and foreign translation difference.

The audit report included in this annual report is prepared by an auditor who is not inspected by the Public Company Accounting Oversight Board and, as such, you are deprived of the benefits of such inspection

Auditors of companies that are registered with the U.S. Securities and Exchange Commission and traded publicly in the United States, including our independent registered public accounting firm, must be registered with the U.S. Public Company Accounting Oversight Board (United States) (the "PCAOB") and are required by the laws of the United States to undergo regular inspections by the PCAOB to assess their compliance with the laws of the United States and professional standards. Because we have substantial operations within the People's Republic of China and the PCAOB is currently unable to conduct inspections of the work of our auditors as it relates to those operations without the approval of the Chinese authorities, our auditor's work related to our operations in China is not currently inspected by the PCAOB. In May 2013, PCAOB announced that it had entered into a Memorandum of Understanding on Enforcement Cooperation with the China Securities Regulatory Commission ("CSRC") and the PRC Ministry of Finance, which establishes a cooperative framework between the parties for the production and exchange of audit documents relevant to investigations undertaken by PCAOB, the CSRC or the PRC Ministry of Finance in the United States and the PRC, respectively. PCAOB continues to be in discussions with the CSRC and the PRC Ministry of Finance to permit joint inspections in the PRC of audit firms that are registered with PCAOB and audit Chinese companies that trade on U.S. exchanges.

This lack of PCAOB inspections of audit work performed in China prevents the PCAOB from regularly evaluating audit work of any auditors that was performed in China including that performed by our auditors. As a result, investors may be deprived of the full benefits of PCAOB inspections. Investors may lose confidence in our reported financial information and procedures and the quality of our financial statements.

Our independent registered public accounting firm may be temporarily suspended from practicing before the SEC. If a delay in completion of our audit process occurs as a result, we could be unable to timely file certain reports with the SEC, which may lead to the delisting of our stock

On January 22, 2014, Judge Cameron Elliot, an SEC administrative law judge, issued an initial decision suspending the Chinese member firms of the "Big Four" accounting firms, including our independent registered public accounting firm, from, among other things, practicing before the SEC for six months. In February 2014, the initial decision was appealed. While under appeal and in February 2015, the Chinese member firms of "Big Four" accounting firms reached a settlement with the SEC. As part of the settlement, each of the Chinese member firms of "Big Four" accounting firms agreed to settlement terms that include a censure; undertakings to make a payment to the SEC; procedures and undertakings as to future requests for documents by the US SEC; and possible additional proceedings and remedies should those undertakings not be adhered to.

If the settlement terms are not adhered to, Chinese member firms of "Big Four" accounting firms may be suspended from practicing before the SEC which could in turn delay the timely filing of our financial statements with the SEC. In addition, it could be difficult for us to timely identify and engage another qualified independent auditor. A delinquency in our filings with the SEC may result in NYSE initiating delisting procedures, which could adversely harm our reputation and have other material adverse effects on our overall growth and prospect.

Forward-looking information may prove inaccurate

This document contains certain forward-looking statements and information relating to us that are based on the beliefs of our management as well as assumptions made by and information currently available to our management. When used in this document, the words "anticipate," "believe," "estimate," "expect," "going forward" and similar expressions, as they relate to us or our management, are intended to identify forward-looking statement. Such statements reflect the current views of our management with respect to future events and are subject to certain risks, uncertainties and assumptions, including the risk factors described in this document. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those described herein as anticipated, believed, estimated or expected. We do not intend to update these forward-looking statements.

There can be no assurance that we will not be passive foreign investment company, or PFIC, for United States federal income tax purposes for any taxable year, which could subject United States investors in the ADSs or our H shares to significant adverse United States income tax consequences.

We will be a "passive foreign investment company," or "PFIC," if, in the case of any particular taxable year, either (a) 75% or more of our gross income for such year consists of certain types of "passive" income or (b) 50% or more of the average quarterly value of our assets (as determined on the basis of fair market value) during such year produce or are held for the production of passive income (the "asset test"). For United States federal income tax purposes, and based upon our income and assets, we do not believe that we were classified as a PFIC for the taxable year ended December 31, 2016, and do not anticipate becoming one in the foreseeable future.

While we do not expect to become a PFIC, because the value of our assets for purposes of the asset test may be determined by reference to the market price of the ADSs, fluctuations in the market price of the ADSs may cause us to become a PFIC for the current or subsequent taxable years. The determination of whether we will be or become a PFIC will also depend, in part, on the composition of our income and assets. Under circumstances where we determine not to deploy significant amounts of cash for active purposes, our risk of being a PFIC may substantially increase. Because there are uncertainties in the application of the relevant rules and PFIC status is a factual determination made annually after the close of each taxable year, there can be no assurance that we will not be a PFIC for the current taxable year or any future taxable year.

If we are a PFIC in any taxable year, a U.S. holder (as defined in "Item 10. Additional Information—E. Taxation—United States federal income tax considerations") may incur significantly increased United States income tax on gain recognized on the sale or other disposition of the ADSs or H shares and on the receipt of distributions on the ADSs or H shares to the extent such gain or distribution is treated as an "excess distribution" under the United States federal income tax rules and such holders may be subject to burdensome reporting requirements. Further, if we are a PFIC for any year during which a U.S. holder holds the ADSs or our H shares, we generally will continue to be treated as a PFIC for all succeeding years during which such U.S. holder holds the ADSs or our H shares. For more information see "Item 10. Additional Information—E. Taxation—Passive Foreign Investment Company Considerations."

Risks relating to doing business in the PRC

China's economic, political and social conditions as well as government policies could significantly affect our business

As of December 31, 2016, the majority of our business, assets and operations are located in China. The economy of China differs from the economies of most developed countries in many respects, including government involvement, control of foreign exchange, and allocation of resources.

The economy of China has been transitioning from a planned economy to a more market-oriented economy. After multiple years of strenuous and sustained economic restructuring reforms, China has become a leading player in the global economy and a major contributing force to the economic revival and growth worldwide.

The PRC Government has implemented economic reform measures emphasizing utilization of market forces in the development of the economy of China and a higher level of autonomy for the private sector. Some of these measures will benefit the overall economy of China, but may have a negative effect on us for a short term. For example, our operating results and financial condition may be adversely affected by changes in taxation, changes in power tariff for our power plants, changes in the usage and costs of State-controlled transportation services, and changes in State policies affecting the power industry.

Interpretation of PRC laws and regulations involves significant uncertainties

The PRC legal system is based on written statutes and their interpretation by the Supreme People's Court. Prior court decisions may be cited for reference but have limited value as precedents.

We are subject to certain PRC regulations governing PRC companies that are listed overseas. These regulations contain certain provisions that are required to be included in the articles of association of these PRC companies and are intended to regulate the internal affairs of these companies. As the PRC regulations are constantly evolving with the goal of better protecting shareholder's interests, we may face greater uncertainties in the interpretation of PRC laws and regulations. Furthermore, the PRC regulations for protection of shareholder's rights are different from those applicable in the United States and/or exchanges where we are listed. Therefore we made it our policy to adopt the strictest standards of any listing rules potentially applicable to us. Some of these standards are incorporated in our articles of association and bylaws with the view to providing most protection for the interests of our shareholders.

Risks relating to our operations in Singapore

Our operations in Singapore are subject to a number of risks, including, among others, risks relating to electricity pricing, dispatching, fuel supply, project development, capital expenditure, environmental regulations, government policies, and Singapore's economic, political and social conditions. Any of these risks could materially and adversely affect our business, prospects, financial condition and results of operations.

Fluctuation in demand and intensified competition may adversely affect Tuas Power's business and results of operations.

Our operations in Singapore depend on market demand and are subject to competition. Overall power system demand grew by 2.5% in 2016 over 2015. The future growth is highly dependent on sustained recovery in the Singapore and global economies. The liberalization of Singapore's power market and the further deregulation of its power industry have resulted in more intense competition among the power generation companies in Singapore. Tuas Power Group, or Tuas Power, one of our wholly owned business units, is one of the three largest power generation companies in Singapore. If Tuas Power is unable to compete successfully against other power generation companies in Singapore, its business, prospects, financial condition and results of operations may be adversely affected.

An electricity futures market was also established in 2015 through an incentive scheme by the authority to market makers (MM) in the futures market. This has attracted independent retailers which are expected to exert some price competition in the retail market. A Demand Response (DR) scheme is currently being established which could potentially introduce further price competition in the wholesale generation market in Singapore. Furthermore, the Singapore government recently announced plans to raise the adoption of solar energy to 350 MWp by 2020, compared to 60 MWp in 2016.

TP Utilities Pte Ltd ("TPU"), an entity in Tuas Power Group, sells utilities, such as steam, industrial water and demineralized water to industrial customers for their direct consumption. The timing for those potential customers to site their premises is uncertain due to economic situations. The demand of the utilities by these customers may vary as well. Despite Tuas Power's efforts to develop its facilities in stages and/or in modules to provide sufficient capacity matching the demand, and require customers to pay minimum capacity payment charges to mitigate the demand risk, its business and results of operations may be adversely affected by fluctuation in demand.

Regulatory changes of the vesting regime in Singapore could expose Tuas Power to electricity price volatility and adversely affect its business and results of operations

Tuas Power derives its revenue mainly from sale of electricity to the National Electricity Market of Singapore (the "NEMS") through a bidding process and vesting contracts under which a significant portion of power sales is predetermined by the Energy Market Authority ("EMA"). The vesting contract regime in Singapore is targeted at mitigation of market power in the wholesale electricity spot market. The regime achieves this objective by assigning a quantity of vesting contracts to generation companies, thereby limiting their incentives to exercise whatever level of market power they may possess. Vesting contracts are a form of bilateral contract imposed/vested on the major power generation companies in Singapore. Vesting contract price is set by the EMA, which is Singapore's power market regulator. Vesting contract price is set at the long run marginal cost of the most efficient base-loaded technology plant employed in Singapore and is reviewed every two years. On a quarterly basis, the EMA allows for vesting contract quantity to be adjusted to account for changes in demand (due to seasonality) and the vesting contract price to be adjusted to account for inflation and changes in fuel prices. Such a mechanism helps

protect the profit margins of the power generation companies in the Singapore market, such as Tuas Power, to a large degree. The quantity of vesting contract allocated to the power generation company depends on the proportion of such power generation company's capacity to the total licensed or planned generation capacity at the commencement of the vesting contracts regime. A portion of the volume under the Vesting Contract Scheme has also been allocated to the LNG Vesting Scheme - an incentive scheme where players who have committed to an initial tranche of LNG for Singapore are allocated electricity sale contracts. The volume allocated to the generation companies under the LNG vesting scheme is fixed for a period of 10 years until 2023. By the end of 2015, the vesting contract has been rolled back to 25% of system demand (inclusive of the LNG Vesting Scheme). Following an appeal by some of the players in the market, the vesting contract level has been maintained at 25% for 2016. Following EMA's review of the Vesting Contract Regime in 2016, it is determined that the vesting contract level will be maintained at 25% until the end of the first half of 2018 and it will be reduced to LNG vesting level by the second half of 2019. The vesting contract regime will be phased out by 2023 when the LNG vesting contract expires, which could lead to volatility in electricity prices and adversely affect our business, financial condition and results of operation..

The fuel cost of Tuas Power is exposed to volatility of international fuel price and foreign currency risk

The fuel for Tuas Power consists of natural gas, coal, biomass, fuel oil and diesel oil. Since the procurement price of natural gas is closely linked to oil price and the procurement price of coal and biomass is linked to a coal index, the fuel cost of Tuas Power is exposed to the volatility of international oil and coal prices. The prices of oil and coal, after dipping to low level in the first half of 2016, have moved up in the second half of 2016. In addition, the commitments for the purchase of fuel are denominated in U.S. dollars, which further exposes Tuas Power to foreign currency risk. Any increase in fuel price and/or appreciation of the U.S. dollar against the Singapore dollar will translate into an increase in fuel cost for Tuas Power. Part of this increase can be passed through electricity sale contracts and utilities sale contracts, while fuel and foreign exchange hedging strategies done appropriately will mitigate the impact of such increase. No assurance can be given that such increase will not adversely affect results of its operation. Tuas Power is highly dependent upon the import of gas via pipelines from Indonesia. The rapid and sharp fall in the price of oil over the course of 2015 has resulted in wide variation in the price for its various sources of gas supply within the same month. Any disruption of such supply would impact the normal operation of Tuas Power significantly. This risk has been mitigated through Tuas Power's contract to buy LNG for its incremental needs, although there is no assurance that, in the event of fuel supply shortfall, Tuas Power's operations will not be adversely affected.

ITEM 4 Information on the Company

A. History and development of the Company

Our legal and commercial name is Huaneng Power International, Inc. Our head office is at Huaneng Building, 6 Fuxingmennei Street, Xicheng District, Beijing, People's Republic of China and our telephone number is (8610) 63226999. We were established in June 1994 as a company limited by shares organized under the laws of the People's Republic of China.

As resolved at the second meeting of the 8th session of the board of the Company on October 13, 2014 and adopted at the third extraordinary general meeting of the Company, we entered into the Huaneng Group Interests Transfer Agreement with Huaneng Group, and the HIPDC Interests Transfer Agreement and the Chaohu Power Interests Transfer Agreement with HIPDC. Pursuant to these transfer agreements, we acquired from Huaneng Group 91.8% interests of Hainan Power, 75% interests of Wuhan Power, 53.45% interests of Suzhou Thermal Power, 97% interests of Dalongtan Hydropower and 100% interests of Hualiangting Hydropower at a total price of RMB7.338 billion, and acquire from HIPDC 60% interests of Chaohu Power, 100% interests of Ruijin Power, 100% interests of Anyuan Power, 100% interests of Jingmen Thermal Power and 100% interest of Yingcheng Thermal Power Interests at a total price of RMB1.938 billion. The total consideration is RMB9.647 billion after adjustment of the profits generated from the date of valuation to the acquisition date in accordance with the equity transfer agreements. The transaction was completed in January 2015.

On November 20, 2015, we issued a total of 780 million new H shares by way of placement at the issuance price of HKD7.32 per share. The aggregate consideration received for these shares was approximately HKD5.71 billion. After this issuance, our total share capital increased from 14,420,383,440 shares to 15,200,383,440 shares, including an increase in our total share capital for H shares from 3,920,383,440 shares to 4,700,383,440 shares.

As resolved at the 2014 annual general meeting on June 25, 2015, our Company has been given a mandate to issue one or more tranches of short-term debentures in the PRC in a principal amount not exceeding RMB 15 billion on a rolling basis within 24 months of approval by the general shareholders' meeting. On August 10 and October 20, 2016, we issued short-term debentures in two tranches each at principal amount of RMB3 billion with nominal annual interest rate of 2.50% and 2.60%, respectively. Each of the debentures was denominated in RMB, issued at par value, and would mature in 365 days from issuance.

On October 14, 2016, the Company signed the Agreement for the Transfer of Equity Interests in Certain Companies with Huaneng Group (the "Transfer Agreement"). Pursuant to the Transfer Agreement, the Company shall accept the transfer of (i) 80% equity interest of Huaneng Shandong Power Limited; (ii) 100% equity interest of Huaneng Jilin Power Limited; (iii) 100% equity interest of Huaneng Heilongjiang Power Limited; and (iv) 90% equity interest of Huaneng Henan Zhongyuan Gas Power Generation Co., Ltd. from Huaneng Group for the consideration of RMB15,113,825,800. This transaction was considered and approved at the 21st meeting of the Eighth Session of the Board held on October 14, 2016, and was considered and approved at the 2016 Second Extraordinary General Meeting held on November 30, 2016. According to the terms of the agreements, the Company has paid 50% of the consideration for such transaction to Huaneng Group on January 9, 2017.

See "Item 5 Operating and Financial Reviews and Prospects – Liquidity and Cash Resources" for a description of our principal capital expenditures since the beginning of the last three financial years.

B. Business overview

We are one of the China's largest independent power producers. As of March 31, 2017, we had controlling generating capacity of 101,270 MW, and a total generating capacity of 89,486 MW on an equity basis.

Operations in China

We are engaged in developing, constructing, operating and managing power plants throughout China. Our domestic power plants are located in 24 provinces, provincial-level municipalities and autonomous regions.

In 2016, the Company actively responded to the new market environments arising from the development of the social demand for power, implemented and progressed the relevant work, generally maintained a stable and safe production and made efforts on cost control. The operating result of the Company reached a record high while the Company continued to fulfill the duties of providing sufficient, reliable and green power to the society.

In 2016, new generating units with a total installed capacity of 1,227 MW were put into operation. In 2016, our total domestic power generation from all operating power plants on a consolidated basis amounted to 313.690 billion kWh, representing a decrease of 2.13% from 2015. The annual average utilization hours of our domestic generating units reached 3,921 hours. Our fuel cost per unit of power sold by domestic power plants decreased by 1.76% from the previous year to RMB 170.62 per MWh.

We believe our significant capability in the development and construction of power projects, as exemplified in the completion of our projects under construction ahead of schedule, and our experience gained in the successful acquisitions of power assets in recent years will enable us to take full advantage of the opportunities presented in China's power market.

With respect to the acquisition or development of any project, we will consider, among other factors, changes in power market conditions, and adhere to prudent commercial principles in the evaluation of the feasibility of the project. In addition to business development strategies, we will continue to enhance our profitability by further strengthening our cost control, especially in respect of fuel costs and construction costs, so as to hedge against fluctuations in fuel price and increase competitiveness in the power market.

Operations in Singapore

Tuas Power, one of our wholly owned business units, operates in Singapore and is engaged in the business of generation, wholesale and retail of power and other relating utilities. Tuas Power is comprised of Tuas Power Ltd ("TPL"), the investment holding company, and seven subsidiaries. Among those subsidiaries, Tuas Power Generation Pte. Ltd. ("TPG") is the electricity generation company that owns 100% of Tuas Power Supply Pte Ltd ("TPS"), which is the retail arm of TPG. Separately, TPU, a wholly owned subsidiary of TPL is engaged in the business of production and supply of utilities to industrial customers at Tembusu, Jurong Island in Singapore, as well as the generation of electricity dispatched to the electricity wholesale market. We have consolidated Tuas Power's results of operations since March 2008. The total assets and revenue of Singapore operations represented approximately 8.98% and 7.70%, respectively, of our consolidated total assets and revenue as of and for the year ended December 31, 2016. In 2016, the power generated by Tuas Power in Singapore accounted for 21.5% of the total power generated in Singapore, slightly lower than 2015.

Development of power plants

The process of identifying potential sites for power plants, obtaining government approvals, completing construction and commencing commercial operations is usually lengthy. However, because of our significant experience in developing and constructing power plants, we have been able to identify promising power plant projects in China and to obtain all required PRC Government approvals in a timely manner.

Opportunity identification and feasibility study

We initially identify an area in which additional electric power is needed by determining its existing installed capacity and projected demand for electric power. The initial assessment of a proposed power plant involves a preliminary feasibility study. The feasibility study examines the proposed power plant's land use requirements, access to a power grid, fuel supply arrangements, availability of water, local requirements for permits and licenses and the ability of potential customers to afford the proposed power tariff. To determine projected demand, factors such as economic growth, population growth and industrial expansion are used. To gauge the expected supply of electricity, the capacities of existing plants and plants under construction or development are studied.

Approval process

Prior to July 2004, any project proposal and supporting documents for new power plants had to first be submitted to the NDRC for approval and then be submitted to the State Council. In July 2004, the State Council of the PRC reformed the fixed asset investment regulatory system in China. Under the new system, new projects in the electric power industry that do not use government funds will no longer be subject to the examination and approval procedure. Instead, they will only be subject to a confirmation and registration process. Coal-fired projects will be subject to confirmation by the NDRC. Wind power projects with installed capacity of 50 MW or above shall be subject to confirmation and registration with the relevant department of the central government, while wind power projects with installed capacity lower than 50 MW shall be subject to confirmation and registration with relevant local government departments. Wind power projects confirmed by local government departments at provincial level shall also be filed with the NDRC and China National Energy Administration.

In November 2014, pursuant to the Catalogue of Investment Projects Approved by the Government (2014 Version) issued by the State Council, administrative approval power for certain activities in the energy sector has been delegated to a lower level. The administrative approval power for thermal power stations has been delegated to the provincial level (with coal-fired thermal power station projects being subject to national-level administrative

approval based on state-promulgated constructions plans limited by total volume), the administrative approval power for heat power stations has been delegated to the local level (with condensing steam heat power station projects being subject to provincial-level administrative approval based on state-promulgated constructions plans limited by total volume), and the administrative approval power for wind power plants delegated to the local level subject to state-promulgated constructions plans limited by total volume as well as the scope as set out in the annual developmental guides. The Interim Measures for Supervision and Administration of Photovoltaic Power Station Projects issued by China National Energy Administration in 2013 requires that photovoltaic power station projects be regulated by on a filing-based system by the provincial-level energy supervisory departments in accordance with regulations related to investment projects issued by the State Council. The same administrative approval standard was again re-affirmed in December 2016 pursuant to the Catalogue of Investment Projects Approved by the Government (2016 Version) issued by the State Council.

Joint venture power projects are subject to additional governmental approvals. Approval by Ministry of Commerce is also required when foreign investment is involved.

From 2014, China National Energy Administration has placed stringent control on coal-fired projects within the Beijing-Tianjin-Hebei region, the Yangtze River Delta Region and the Pearl River Delta Region. All new coal –fired generating projects, other than those involving co-generation, were prohibited from being approved. Multi coal-fired generating units with a total capacity of more than 300 MWh may be reconstructed into large capacity units based on the principles of equivalent replacement for coal but reduction in replacement pollutant emission.

From 2016, to counter the issue of overcapacity in the coal-fire power sector, China National Energy Administration strengthened the approval of coal-fire projects nationwide, a number of new coal-fired generating projects, other than those involving co-generation, were cancelled, postponed or terminated. Considering the increasingly limited availability of prime locations and decreasing subsidies, China National Energy Administration also suspended approval of new wind power plants and photovoltaic power station projects in provinces with wind curtailment rate over 20% and solar curtailment rate over 5%.

Permits and contracts

In developing a new power plant, we, like other players in the industry, are required to obtain permits before commencement of the project. Such permits include operating licenses and similar approvals related to plant site, land use, construction, and environment. To encourage the cooperation and support of the local governments of the localities of the power plants, it has been and will be our policy to seek investment in such power plants by the relevant local governments.

Power plant construction

We have generally acted as the general contractor for the construction of our power plants. Equipment procurement and installation, site preparation and civil works are subcontracted to domestic and foreign subcontractors through a competitive bidding process. All of our power plants were completed on or ahead of schedule, enabling certain units to enter service and begin generating income earlier than the estimated in-service date.

Plant start-up and operation

We have historically operated and intend to continue to operate our power plants. Our power plants have established management structures based on modern management techniques. We select the superintendent for a new power plant from the senior management of our operating plants early in the construction phase of the new plant, invest in the training of operational personnel, adopt management techniques that improve efficiency and structure our plant bonus program to reward efficient and cost-effective operation of the plant in order to ensure the safety, stability and high availability factor of each power plant. Our senior management meets several times a year with the superintendents of the power plants as a group, fostering a team approach to operations, and conducts annual plant performance reviews with the appropriate superintendent, during which opportunities to enhance the power plant's performance and profitability are evaluated.

After a coal-fired generating unit is constructed, the contractor tests its installation and systems. Following such tests, the contractor puts the unit through a continuous 168-hour trial run at full load. After successfully passing the continuous 168-hour test and obtaining approval from the local governments, the unit may commence its commercial operation. Trial run of a wind power project consists of two phases: (i) trial run of single wind power generating unit and (ii) trial run of the entire wind power project as a whole. After successfully passing the trial run, the wind power project may commence its commercial operation.

Development of Power Plants in Singapore

The Singapore electricity industry had traditionally been vertically integrated and owned by the government. Since 1995, steps have been taken to liberalize the power industry, including the incorporation of the Public Utilities Board ("PUB") in 1995, establishment of Singapore Electricity Pool ("SEP") in 1998, formation of Energy Market Authority ("EMA") in 2001, and the evolvement of the SEP into the New Electricity Market of Singapore ("NEMS") in 2003. The EMA is a statutory body responsible for the economic, technical and competition regulation of the gas and electricity industry in Singapore. In carrying out its functions as the regulator of the power sector, EMA is empowered under the Electricity Act to issue and enforce licenses, codes of practices and performance standards. Energy Market Company Pte Ltd. (the "EMC") is the market company licensed to operate the wholesale market, or the NEMS.

In Singapore, a company is required to hold a generation license issued by the EMA if it generates electricity by means of one or more generating units with capacity of 10 MW or above. If connected to the power grid, the generating unit(s) must be registered with the EMC and will have to compete with other power generation companies to secure dispatch in the NEMS.

To ensure adequate electricity supply in Singapore, the EMA targets a minimum reserve margin (the excess of generating capacity over peak electricity demand) of 30% based on a loss of load probability (a measure of the probability that a system demand will exceed capacity during a given period, often expressed as the estimated number of days over a year) of three days per year. The 30% required reserve margin is to cater for scheduled maintenance as well as forced outages of generating units in the system. If the reserve margin falls below the required 30% due to demand growth and/or plant retirements, it would be an indication that new generation investments in generation units are needed to maintain system security.

The EMA intends to keep the increase and decrease in generating capacity commercially driven as far as practicable. As a precaution against the risk of insufficient generating capacity in the system, the EMA has planned to put in place a capacity assurance scheme to incentivize new generation planting in case new generating capacity that is required to maintain system security is not forthcoming from the market. EMA has not provided any update to the proposed scheme but given the current oversupply of capacity, it is not anticipated that the scheme will be put into place anytime soon.

By most measures of market power, the Singapore market is highly concentrated, as the three largest power generation companies account for approximately 60% of total power capacity. Since December 2002, EMA has imposed a licensed capacity cap (in MW) on these three power generation companies to prevent them from increasing their market dominance/power. Following a review of the vesting contract regime in 2016, EMA imposed a 25% cap on capacity market share to all generation licensees to prevent structural increases in market concentration/power. With regard to the three largest power generation companies, the cap imposed by EMA is the higher of either the 25% capacity market share cap or their respective licensed capacity cap, until the expiry of their respective generation license. This provides an option for the three largest power generation companies to increase their generation capacities beyond their current generation license up to 25% capacity market share cap.

New entrants as well as existing competitors have invested in new generating capacity or repowering of existing plants to take advantage of the LNG Vesting Scheme. This will impact the market negatively as these new capacities compete for market share as well as to avoid the gas take-or-pay penalties arising out of an oversupplied market.

EMA issued a Singapore Electricity Market Outlook (SEMO) 2016, which provides a long term outlook of the energy market, such as the projected supply and demand conditions to facilitate power generation investment

decisions. Based on the data provided by EMA, there will be approximately 300MW of new investments in 2017 and 700MW of plant retirement in 2019.

We are in the process of developing the Tembusu Multi-Utilities Complex (the "TMUC") in Singapore. The TMUC is expected to consist of a co-generation plant, a desalination plant and a wastewater treatment facility, with a total installed capacity of 165 MW. The complex will be developed in multiple phases in order to meet customers' demand. Phase 1 consists of 1 x 450 t/h coal-biomass co-fired circulated fluidized bed boiler, 2 x 200 t/h diesel/natural gas fired boilers and 1 x 101MW steam turbine-generator, and other components of the plant. Phase 2A consists of 1 x 450 t/h coal-biomass co-fired circulated fluidized bed boiler, 1 x 200 t/h diesel/natural gas fired boiler and 1 x 32MW steam turbine-generator, and other components of plant. Phase 1 and Phase IIA commenced commercial operations in March 2013 and June 2014 respectively. The first train of 62.5 m³/h wastewater treatment facility commenced commercial operation in September 2015. TPL owns 100% equity interest in this project.

Pricing policy

Pricing policy in China

Prior to April 2001, the on-grid tariffs for our planned output were designed to enable us to recover all operating and debt servicing costs and to earn a fixed rate of return. Since April 2001, however, the PRC Government has gradually implemented a new on-grid tariff-setting mechanism based on the operating terms of power plants as well as the average costs of comparable power plants.

On July 3, 2003, the State Council approved the tariff reform plan and made it clear that the long-term objective of the reform is to establish a standardized and transparent tariff-setting mechanism.

Pursuant to the NDRC circular issued in June 2004, on-grid tariffs for newly built power generating units commencing operation from June 2004 should be set on the basis of the average cost of comparable units adding tax and reasonable return in the regional grid. It provides challenges and incentives for power generation companies to control costs for building new generating units.

On March 28, 2005, the NDRC issued the Interim Measures on Regulation of On-grid Tariff, the Interim Measures on Regulation of Transmission and Distribution Tariff, and the Interim Measures on Regulation of End-user Tariff, or collectively the "Interim Measures", to provide guidance for the reform of tariff-setting mechanism in the transition period. Under the Interim Measures, tariff is classified into on-grid tariff, transmission and distribution tariff and end-user tariff. Transmission and distribution tariff will be instituted by the government. End-user tariff will be based on on-grid tariff and transmission and distribution tariff. The government is responsible for regulating and supervising power tariffs based on the principles of promoting efficiency, encouraging investment and improving affordability.

In December 2004, the NDRC proposed and the State Council approved the establishment of a linkage mechanism between coal and power prices, pursuant to which, the NDRC may adjust power tariffs if the change of the average coal price reaches 5% within a period of six months compared with the preceding same period. The change in a period, if less than 5%, will be carried forward to the future periods until the accumulated amounts reach 5%. With a goal to encourage power generation companies to reduce cost and improve efficiency, only around 70% of coal price increases will be allowed to pass to end-users through an increase of power tariffs, and power generation companies will bear the remaining 30%. In May 2005, the NDRC activated the coal-electricity price linkage mechanism for the first time to increase on-grid tariffs and end-user tariffs in the northeastern region, central region, eastern region, northwestern region and southern region. We accordingly increased the on-grid tariffs of our power plants in the northeastern region, central region, eastern region and northwestern region on May 1, 2005 and in the southern region on July 15, 2005. In June 2006, the coal-electricity price linkage mechanism was reactivated by the NDRC to increase on-grid tariffs and end-user tariffs in the northeastern region, central region, eastern region, northwestern region and southern region. We accordingly increased the on-grid tariffs of most of our power plants in the same regions on June 30, 2006.

In May 2007, NDRC and the State Environment Protection Administration jointly promulgated Interim Administrative Measures on Electricity Price of Coal-fired Generating Units installed with Desulphurization Facilities and the Operations of Such Facilities, which provided that a premium for desulphurization may be charged on the price of the electricity generated by generating units installed with desulphurization facilities on and from the date on which such desulphurization facilities are tested and accepted by a relevant environment protection regulator. Such pricing policy is also applicable to the old generating units which are installed with desulphurization facilities. The new measures are more stringent on the regulation of the coal-fired power plants with desulphurization facilities, setting forth the categories under which the price including a desulphurization premium will be offset or otherwise penalized based on the ratio of utilization of the relevant desulphurization facilities on an annual basis. As of December 31, 2013, all of our existing coal-fired generating units have installed and operated the desulphurization facilities and enjoyed the desulphurization premium.

In June 2008, NDRC issued Notice of Raising the Power Tariff, pursuant to which, the power tariff in provincial grids nationwide was increased by an average of RMB0.025 per kWh. In August 2008, NDRC issued Notice of Raising the On-grid Tariffs of the Thermal Power Plants, pursuant to which, the on-grid tariff of thermal power plants, including plants fueled by coal, oil, gas and co-generation, was increased by an average of RMB0.02 per kWh.

On February 25, 2009, NDRC, SERC and China National Energy Administration jointly promulgated the Notice regarding Cleaning up the Concessional Tariff Scheme, pursuant to which, (i) the concessional tariff scheme at the local level is banned, and (ii) certain measures, such as direct purchase by large end-users and adopting peak and off-peak power pricing policy, will be carried out to reduce enterprises' power cost. In addition, the notice emphasizes the supervision and inspection over the setting of power tariffs. On October 11, 2009, in order to promote a fair market condition and the optimization of electric power resources, NDRC, SERC and China National Energy Administration jointly promulgated the Circular on Regulating the Administration of Electric Power Transaction Tariff to regulate the tariff-setting mechanism for the on-grid tariff, transmission and distribution tariff and end-user tariff and clean up the local preferential power tariffs provided to high energy consumption companies. Pursuant to a notice issued by NDRC, with effect from November 20, 2009, certain adjustments on the on-grids tariffs have been made in various regions of China in order to resolve the inconsistencies in tariffs, rationalize the tariff structure and promote the development of renewable energy.

In 2010, the PRC Government started to implement the direct power purchase policy. As of December 31, 2013, some of the provinces where we operate power plants are approved by the NDRC to implement the direct power purchase by large power end-users. In addition, during 2010 SERC issued several circulars and notices to regulate the trans-provincial and interregional transaction of power and/or power generation right, in which the power purchase price shall be freely determined by negotiation through market pricing mechanism. In December 2012, SERC issued another circular to further regulate the trans-provincial and interregional transaction of power and/or power generation right.

In May 2011, NDRC issued a notice, increasing the on-grid tariffs of thermal power plants to partially compensate the increased costs incurred by thermal power plants resulting from increases in coal prices. Different adjustments on tariffs were made in different provinces. In November 2011, PRC Government made further nationwide adjustments on power tariffs, including an average of RMB0.026 per kWh increase in on-grid tariff for thermal power plants. In December 2012, NDRC issued a notice, which provided that, from January 1, 2013, NDRC would provide a RMB0.008 per kWh denitrification premium for all coal-fired generating units equipped with denitrification facilities that are inspected and accepted by authorized national or provincial authority.

In March 2012, the PRC Government issued a notice, which mandated the confirmation method for the power generation projects, subsidy standards and fund appropriation standards relating to the application for subsidy for renewable energy power price of power generation projects. In December 2012, the PRC Government issued the Notice on the Guidelines of Enhancing the Reform of Marketization of Coal Used for Power Generation to further reform the coal pricing mechanism. Effective January 1, 2013, all key coal purchase contracts between power generation companies and coal suppliers were terminated and contracts are directly negotiated between power generation companies and coal suppliers without the interference of local governments. According to the notice, the NDRC will no longer issue inter-provincial guidance on the railway transportation capacity plan. In addition, the dual-track coal pricing system, which included the government regulated mandatory annual contract pricing and spot

market prices for the remaining coal production output of each coal supplier, was abolished due to the narrowing gap between the government regulated coal contract price and the spot market price. Pursuant to the notice, future coal contract prices will be determined by the market and freely negotiated between power generation companies and coal suppliers. Furthermore, the coal-electricity price linkage mechanism will continue to be implemented and constantly improved. Once the coal price fluctuates for more than 5% on an annual basis, on-grid tariff would be adjusted accordingly. The notice also mandates that power generation companies absorb 10% of the coal price fluctuations as compared to 30% prior to 2013. Given the narrow gap between the key contract coal price and the spot market price, the overall on-grid tariff was not adjusted.

In September 2013, NDRC issued the Notice on the Adjustment of Power Tariff for Power Generation Companies and Related Matters, pursuant to which the on-grid tariffs for coal-fired generating units were lowered, by a national average of RMB0.013 per kWh, and the on-grid tariff for gas turbine power plants were slightly increased. The Notice also increased the power tariff for power-generating companies that are equipped with denitrification facilities and dust-removal facilities.

In March 2014, the NDRC and the Ministry of Environmental Protection jointly issued the Measures to Monitor the Operation of Environmental Protection Tariffs and Facilities Regarding Coal-fired Generating Units, under which the standard on-grid electricity tariff incorporating environmental protection element will no longer be applicable to coal-fired generating units unless the coal-fired power generating enterprise has completed renovation for environmental protection acceptable after testing. In August 2014, the NDRC issue the Notice to Further Resolve Conflicts Regarding Environmental Protection Tariff, under which the standard on-grid tariff for coal-fired power generating units is lowered with the view to resolve the environmental protection tariffs conflicts such as denitrification and dedusting of coal-fired power generation enterprises, and setting the tariff subsidy for denitrification and dedusting at RMB0.01/kWh and RMB0.002/kWh, respectively. In December 2014, the NDRC issued the Notice Regarding Adjusting Standard On-grid Tariff for Onshore Wind Powers, under which the standard on-grid tariff for each of Class I, Class II and Class III wind powers is lowered by RMB0.02, and the tariff for Class IV wind power remain unchanged at RMB0.61/kWh. In December 2014, the NDRC issued the Notice Regarding Certain issues of On-grid Tariff of Natural Gas Powers, defining the principles to formulate and modify the tariff of electricity generated by natural gas, aiming to regulate on-grid tariff administration and used facilitate healthy and orderly growth of natural gas power generating sector in China.

In April 2015, the NDRC issued the Notice on Reducing On-grid Tariff for Coal-fired Power and Commercial and Industrial Power Tariff in order to release the pressure on tariffs for natural gas and for companies that utilize denitration or dedusting techniques or with extremely low emissions, to lower commercial and industrial power tariff, and to moderately lower on-grid tariff for coal-fired power, the power tariff in provincial grids nationwide was decreased by an average of RMB0.02 per kWh.

In December 2015, the NDRC issued the Notice on Issues of Perfecting the Mechanism of Coal-electricity Price Linkage, confirming the annual cycle of the mechanism, the NDRC's leading role in implementing the mechanism, and provinces and cities' executor role in implementing the mechanism. The coal-electricity prices with which the mechanism of coal-electricity price linkage is in line are indexed to the national thermal coal price index. The benchmark coal price is the provincial average price in China's thermal coal price index of 2014. And the benchmark tariff is in principle the on-grid tariff in line with the benchmark coal price. The tariff adjustment may be triggered after the annual review based on the calculations according to the formula given by Policy of the Mechanism of Coal-electricity Price Linkage. Also in December 2015, the NDRC issued the Notice on Reducing On-grid Tariff for Coal-fired Power and General Commercial and Industrial Power Tariff, which ordered a decrease of national on-grid tariffs for coal power and general commercial and industrial power tariff by an average of RMB0.03 per kWh, based on the relevant regulations prescribed in the mechanism of coal-electricity price linkage. In the same month of 2015, the NDRC also issued the Notice on Improving On-grid Tariff Policy for Wind Power and Photovoltaic Power, which established a policy that the benchmark on-grid tariffs for wind power and photovoltaic power decrease in line with the development of these two types of power plants. To further indicate the investment expectation, the Notice confirmed the benchmark on-grid tariffs for wind power of 2016 and 2018. The 2016 benchmark on-grid tariff for photovoltaic power has been confirmed, yet that of 2017 and onward will be confirmed at a later stage.

On January 1, 2016, after the annual review based on the calculations prescribed in the mechanism of coal-electricity price linkage, the NDRC adjusted on-grid tariff for coal-fired power and commercial and industrial power tariff. National on-grid tariffs for coal power decreased by an average of RMB0.03 per kWh, based on the relevant regulations, RMB0.01 per kWh of which shall be contributed to a specialized corporate restructuring fund with the purpose of supporting placement of personnel laid off during the supply-side reform. The NDRC also increased on-grid tariff for renewable power by RMB0.004 per kWh in order to replenish the renewable energy fund and to support emission reduction efforts of coal-fired power generation enterprises and to resolve conflicts regarding environmental protection tariffs.

In December 2016, in order to implement General Office of the State Council's Energy Development Strategic Action Plan (2014-2020) about achieving equal on-grid tariff for wind and solar power with coal power to encourage the orderly development of wind and solar power by properly guiding investments in these areas, the NDRC issued the Announcement on the Adjustment of Standard On-Grid Tariff for Solar and Onshore Wind Power (NDRC Price [2016]No. 2729). From January 1, 2017, standard on-grid tariffs for Class I, Class II and Class III solar powers was adjusted to RMB0.65 per kWh, RMB0.75 per kWh and RMB0.85 per kWh, respectively, which is RMB0.15 per kWh, RMB0.13 per kWh and RMB0.13 per kWh lower than corresponding tariff in 2016. Such standard on-grid tariff will be adjusted annually. 2018 standard on-grid tariff for Class I, Class II and Class III onshore wind power decreased by RMB0.04 per kWh, RMB0.02 per kWh, RMB0.01 per kWh, respectively. Yunnan Province has been recategorized as Class II from Class IV, which meant the standard on-grid tariff for wind power generated in Yunnan province will decrease by an additional RMB0.12 per kWh.

Pricing Policy in Singapore

Pricing Policy of Electricity in Singapore

All licensed power plants in Singapore sell their plant output into the NEMS under a half-hourly competitive bidding process, during which a clearing price is determined based on the projected system demand. All successful bids/power plants that are cleared in each half hour will be dispatched automatically by control signals from the Power System Operator, a division of the EMA, and in turn will receive the cleared price as determined earlier. The cleared price paid to the power plants is the nodal price at their point of injection, and the Market Clearing Engine, the computer software that creates dispatch schedules and determines market clearing prices, automatically produces a different price at each node on the network. A Demand Response scheme is being introduced where demand could be curtailed in response to high prices in return for a share of the total savings arising out of lower prices as a result of demand being reduced.

As there is no certainty in the price or the dispatch levels for any power plants, operators of power plants may enter into short- or long-term financial arrangements with other counterparties or their own subsidiary company involved in the electricity retail market (to end consumers of electricity) to secure stability in their revenue stream and manage the commercial risks associated with operations in a competitive market.

In addition, the major power generation companies, including Tuas Power, are obliged to hold vesting contracts. Vesting contracts are a form of bilateral contract imposed/vested on the generation companies who had been licensed by the EMA before the establishment of NEMS. Market Support Services Licensee is the counterparty to all of the vesting contracts, and the vesting contracts are settled between the parties through the EMC's settlement system. The quantity of vesting contract allocated to the power generation company depends on the proportion of such power generation company's capacity to the total licensed or planned generation capacity at the commencement of the vesting contract regime. Vesting contract price is set by the EMA at the long-run marginal cost and is adjusted by the EMA on a periodic basis for changes in the long-run marginal cost and on a quarterly basis for inflation and changes in fuel prices and electricity demand. Such mechanism helps protect the profit margins of the power generation companies in the Singapore market to a large degree. The contract quantity and

price are currently recalculated every three months. There has been a rollback on the vesting contract level from 40% in 2015 to an immediate level of 25%. Following the review of vesting contract regime by EMA in 2016, it is determined that the vesting contract level will maintain at 25% until the end of first half of 2018 and reduce to LNG vesting level by second half of 2019. The vesting contract regime will be phased out by 2023 when the LNG vesting contracts expires. This translates into increased exposure to a more volatile pool price. The authority has introduced a demand response scheme where loads can choose to participate in peak load shaving and share in part of the consumer surplus and an Electricity Futures Market which attracts independent retailers to enter the Singapore market. We continue to monitor closely and evaluate the impact of such markets on our business.

The gross pool design adopted in NEMS means all quantity sold by retailers to contestable consumers (currently defined as customers with average monthly usage more than of 42,000kWh) has to be in turn purchased from the pool. The retailers pay for their electricity purchases at the Uniform Singapore Energy Price, which is a weighted average of nodal prices and is determined on a half-hourly basis in the NEMS.

Pricing Policy of Utilities in Singapore

Utilities supply to industrial customers is based on long-term contracts. The pricing of utilities has both fixed and variable components.

Power sales

Each of our power plants has entered into a written agreement with the local grid companies for the sales of its planned power output. Generally, the agreement has a fixed term of one year and provides that the annual utilization hours of the power plant will be determined with reference to the average annual utilization hours of the similar generating units connected to the same grid.

In 2003, SERC and the State Administration of Commerce and Industry jointly promulgated a model contract form (the "Model Contract Form") for use by power grid companies and power generation companies in connection with electricity sale and purchase transactions. The Model Contract Form contains provisions on the parties' rights and obligations, amount of electricity subject to purchase, payment method and liabilities for breach of contract, etc. We believe that the publication of the Model Contract Form has facilitated the negotiation and execution of electricity purchase contracts between power grid companies and power generation companies in a fair, transparent and efficient manner. In 2015, a majority of the agreements entered into between our power plants and the local grid companies were based on the Model Contract Form.

From 2008, with the purpose of improving energy usage efficiency, the government implemented an optimized-dispatch electricity policy in some provinces in China, as a result of which, the utilization hours of low energy consumption and low pollution generating units have been improved. We believe that our large generating units with high efficiency and low emission are competitive in the market.

The PRC Government started in 1999 to experiment with a program to effect power sales through competitive bidding in some provinces. Furthermore, the PRC Government started in 2009 to experiment with a program for direct power purchase by large power end-users, and has promulgated relevant rules governing the price and method of direct power purchase transactions as well as the market entrance and exit mechanism. In accordance with the above policies, we are conducting research on the program for direct power purchases by large power end-users. In July 2013, China National Energy Administration issued the Notice on Direct Purchases between Power End-users and Power Generation Companies, which officially implemented the direct purchases programs by large end-users. Among the provinces where we operate our power plants, seven of them, namely Shanxi, Jiangsu, Henan, Hunan, Guangdong, Fujian and Gansu, started the direct purchase program in 2013, and four of them, namely Jiangxi, Yunnan, Hubei and Liaoning, are actively promoting the direct purchase pilot programs.

In 2014, the programs were also implemented in Zhejiang and Anhui. In addition to these regions, the direct purchase programs by large end-users were also implemented in Liaoning, Jiangxi, Hubei and Chongqing in 2015 and in the whole nation except Shanghai, Hainan and Tibet in 2016. The national volume of electricity sold in 2016 via the direct purchase programs was approximately 800 billion kWh, which represented a huge increase from the 430 billion kWh sold in 2015. Most of the sale was negotiated between power producers and large end users, with a minority completed through the competitive bidding process. We participated in all regions with pilot direct purchase programs.

In general, establishing liberalized power markets represents the general trend in China's power market reform, which is conducive to creating a competition environment that is fair, transparent and equitable.

The following table sets forth the average power tariff (RMB/MWh) of electric power sold by our power plants in China, for each of the five years ended December 31 through 2016 and the approved power tariff for 2017.

	Year Ended December 31,					
	2012 Average Tariff	2013 Average Tariff	2014 Average Tariff	2015 Average Tariff	2016 Average Tariff	2017 Approved Tariff
Heilongjiang Province						
Xinhua Power Plant*	—	—	—	—	—	377.21
Hegang Power Plant*	—	—	—	—	—	378.70
Daqing Co-generation	—	—	—	—	—	372.30
Yichun Co-generation*	—	—	—	—	—	382.30
Sanjiangkou Wind Power*	—	—	—	—	—	630.00
Linjiang Jiangsheng Wind Power*	—	—	—	—	—	630.00
Daqing Heping Aobao Wind Power*	—	—	—	—	—	630.00
Jilin Province						
Jiutai Power Plant*	—	—	—	—	—	371.70
Changchun Co-generation*	—	—	—	—	—	371.70
Nongan Biomass*	—	—	—	—	—	750.00
Linjiang Jubao Hydropower*	—	—	—	—	—	375.70
Zhenlai Wind Power*	—	—	—	—	—	595.00
Siping Wind Power*	—	—	—	—	—	610.00
Tongyu Tuanjie Wind Power*	—	—	—	—	—	580.00
Liaoning Province						
Dalian Power Plant	409.18	407.89	394.50	375.55	346.76	368.50
Dandong Power Plant	405.73	401.09	393.06	371.45	352.52	368.50
Yingkou Power Plant	409.35	406.85	399.33	378.32	344.71	368.50
Yingkou Co-generation	397.59	396.96	399.21	365.04	331.39	368.50
Wafangdian Wind Power	610.82	632.85	609.68	598.12	603.72	620.00
Changtu Wind Power	610.00	605.30	602.82	590.93	626.09	620.00
Suzihe Hydropower	364.25	330.00	330.00	329.96	332.67	330.00
Dandong Photovoltaic	—	—	—	—	950.00	950.00
Yingkou Co-generation Photovoltaic	—	—	—	—	950.00	950.00
Inner Mongolia Autonomous Region						
Huade Wind Power	520.00	520.00	520.00	520.00	471.22	520.00
Hebei Province						
Shang'an Power Plant	434.63	431.15	429.39	401.79	358.48	367.57

	Year Ended December 31,					
	2012 Average Tariff	2013 Average Tariff	2014 Average Tariff	2015 Average Tariff	2016 Average Tariff	2017 Approved Tariff
Kangbao Wind Power	536.72	534.47	538.84	538.14	554.60	540.00
Kangbao Photovoltaic					784.95	982.50
Gansu Province						
Pingliang Power Plant	336.12	332.16	322.72	259.51	207.63	297.80
Jiuquan Wind Power	520.60	520.60	520.60	473.12	367.54	520.60
Jiuquan II Wind Power	—	—	540.00	497.75	402.36	540
Yumen Wind Power	—	—	520.60	472.01	390.06	520.60
Yigang Wind Power	—	—	—	—	447.65	580.00
Beijing Municipality						
Beijing Co-generation	494.00	529.47	514.72	480.70	454.99	462.60
Beijing Co-generation CCGT	—	468.79	882.33	959.91	687.33	650.00
Tianjin Municipality						
Yangliuqing Co-generation	438.03	483.73	434.28	416.54	370.82	383.80
Lingang Co-generation CCGT	—	—	—	817.57	726.44	700
Shanxi Province						
Yushe Power Plant	396.56	393.37	391.22	334.87	253.01	331.50
Zuoquan Power Plant	383.25	389.83	382.01	333.25	252.96	325.5
Dongshan CCGT	—	—	—	703.80	682.40	670.50
Shandong Province						
Dezhou Power Plant	468.90	464.89	463.36	445.44	389.78	403.51
Jining Power Plant	459.63	455.46	446.73	429.20	372.57	384.52
Xindian Power Plant	453.75	453.35	448.55	432.30	381.58	389.60
Weihai Power Plant	461.89	474.38	461.18	440.45	382.53	398.51
Rizhao Power Plant Phase II	446.90	446.38	441.59	422.33	372.08	382.90
Zhanhua Co-generation	450.55	446.56	434.71	424.66	389.33	372.90
Baiyanghe Power Plant*	—	—	—	—	—	394.64
Rizhao Power Plant Phase I*	—	—	—	—	—	448.50
Jiaxiang Power Plant*	—	—	—	—	—	377.90
Jining Co-generation*	—	—	—	—	—	385.50
QufuCo-generation*	—	—	—	—	—	372.90
Huangtai Power Plant*	—	—	—	—	—	382.90
Yantai Power Plant*	—	—	—	—	—	405.40
Linyi Power Plant*	—	—	—	—	—	384.23
Jining Yunhe Power Plant*	—	—	—	—	—	394.50

	Year Ended December 31,					
	2012 Average Tariff	2013 Average Tariff	2014 Average Tariff	2015 Average Tariff	2016 Average Tariff	2017 Approved Tariff
Liaocheng Co-generation*	—	—	—	—	—	385.20
Taian Power Plant*	—	—	—	—	—	372.90
Laiwu Power Plant*	—	—	—	—	—	380.40
Muping Wind Power*	—	—	—	—	—	640.00
Penglai Wind Power*	—	—	—	—	—	635.00
Rushan Wind Power*	—	—	—	—	—	640.00
Changdao Wind Power*	—	—	—	—	—	630.00
Rongcheng Wind Power*	—	—	—	—	—	630.00
Dongying Wind Power*	—	—	—	—	—	640.00
Boshan Photovoltaic*	—	—	—	—	—	1,000.00
Sishui Photovoltaic*	—	—	—	—	—	1,200.00
Gaozhuang Photovoltaic*	—	—	—	—	—	1,000.00
Jining Co-generation Photovoltaic*	—	—	—	—	—	611.45
Henan Province						
Qinbei Power Plant	441.43	437.01	435.42	401.65	354.30	361.01
Zhongyuan CCGT*	—	—	—	—	—	600.00
Luoyang Co-generation Power	—	—	—	384.33	365.91	365.10
Luoyang Yangguang Power	—	—	—	365.10	316.83	355.10
Mianchi Co-generation	—	—	—	—	328.10	328.10
Zhumadian Wind Power	—	—	—	—	610.00	610.00
Jiangsu Province						
Nantong Power Plant	441.25	435.69	436.00	430.98	407.55	385.50
Nanjing Power Plant	442.17	436.35	463.50	453.08	400.81	383.00
Taicang Power Plant	430.43	432.81	419.19	387.68	349.31	381.32
Huaiyin Power Plant	458.25	449.87	438.98	450.81	433.30	380.50
Jinling Power Plant						
Coal-fired	427.34	428.38	408.24	385.24	348.86	388.00
CCGT	581.35	585.53	606.21	712.13	708.41	575.00
CCGT Co-generation	—	635.42	690.00	760.99	617.12	584.00
Suzhou Co-generation	—	—	508.66	489.38	453.42	457.00
Nanjing Thermal Power	—	—	—	—	445.21	462.00
Qidong Wind Power	542.65	541.34	555.92	556.76	553.91	549.67
Rudong Wind Power	—	610.00	610.00	610.00	606.24	610.00

	Year Ended December 31,					
	2012 Average Tariff	2013 Average Tariff	2014 Average Tariff	2015 Average Tariff	2016 Average Tariff	2017 Approved Tariff
Tongshan Wind Power	—	—	—	—	610.00	610.00
Luhe Wind Power	—	—	—	—	—	610.00
Rudong Offshore Wind Power	—	—	—	—	—	850.00
Shanghai Municipality						
Shidongkou I	457.18	453.27	438.21	435.48	395.18	394.60
Shidongkou II	442.13	442.00	437.54	410.35	380.60	395.80
Shidongkou Power	463.85	462.02	449.92	427.42	382.31	404.80
Shanghai CCGT[(2)]	674.00	820.92	866.20	937.13	899.62	705.60
Chongqing Municipality						
Luohuang Power Plant	448.95	448.57	440.90	427.84	376.92	379.60
Liangjiang CCGT	—	—	—	872.20	649.74	491.30
Zhejiang Province						
Yuhuan Power Plant	491.37	484.79	468.71	452.99	403.82	417.30
Changxing Power Plant	—	—	431.03	487.93	420.54	442.30
Tongxiang CCGT[(2)]	—	—	1,298.37	1,278.17	887.70	580.00
Changxing Photovoltaic	—	—	—	1,125.67	1,208.23	1,100.00
Hongqiao Photovoltaic	—	—	—	—	980.00	980.00
Hunan Province						
Yueyang Power Plant	506.87	505.13	495.31	480.55	449.87	451.85
Subaoding Wind Power	—	—	494.00	611.72	610.00	610.00
Guidong Wind Power	—	—	—	610.00	610.00	610.00
Xiangqi Hydropower	390.00	390.00	410.00	410.00	404.19	380.00
Hubei Province						
Wuhan Power Plant	—	—	461.99	435.47	376.53	402.62
Jingmen Thermal Power	—	—	432.20	444.09	378.97	398.10
Yingcheng Thermal Power	—	—	—	477.26	392.73	398.10
Jieshan Wind Power	—	—	—	610.00	610.00	690.00
Enshi Maweigou Hydropower	360.00	356.96	366.59	379.26	380.43	370.00
Dalongtan Hydropower	—	—	366.89	374.80	376.38	370.00
Jiangxi Province						
Jinggangshan Power Plant	483.90	482.95	468.92	443.73	399.06	404.61
Ruijin Power	—	—	466.57	441.24	399.27	404.30
Anyuan Power	—	—	—	424.63	400.98	409.30
Jianggongling Wind Power	—	—	—	—	610.00	610.00

	Year Ended December 31,					
	2012 Average Tariff	2013 Average Tariff	2014 Average Tariff	2015 Average Tariff	2016 Average Tariff	2017 Approved Tariff
Anhui Province						
Chaohu Power Plant	—	—	412.93	409.79	351.24	374.30
Huaining Wind Power	—	—	—	—	610.00	610.00
Hualiangting Hydropower	—	—	346.85	392.89	385.60	369.30
Fujian Province						
Fuzhou Power Plant	445.64	442.81	441.83	392.29	348.95	383.99
Guangdong Province						
Shantou Power Plant	542.97	541.39	529.99	498.01	464.69	472.76
Haimen	529.06	514.30	503.18	483.38	440.21	450.50
Haimen Power	—	—	479.55	485.46	444.53	450.50
Shantou Photovoltaic	—	—	—	—	980.00	980.00
Yunnan Province						
Diandong Energy	359.58	371.30	401.59	435.58	513.58	335.80
Yuwang Energy	361.70	377.41	395.96	545.42	1,394.49	335.80
Fuyuan Wind Power	—	—	610.00	600.61	494.71	610.00
Guizhou Province						
Panxian Wind Power	—	—	—	—	610.00	610.00
Hainan Province						
Haikou Power Plant	—	—	474.14	457.71	420.45	419.80
Dongfang Power Plant	—	—	482.69	460.53	420.90	419.80
Nanshan CCGT	—	—	439.84	629.32	672.26	665.80
Wenchang Wind Power	—	—	619.72	571.95	609.78	610.00
Gezhen Hydropower	—	—	392.63	399.78	400.07	400.00
Dongfang Photovoltaic	—	—	—	—	1,010.00	1,000.00

Notes:

(1) The power plants marked * are newly acquired entities of the Company in January 2017.

(2) The tariff of Shanghai Combined Cycle and Tongxiang Combined Cycle consist of on-grid settlement price and capacity subsidy income.

Power sales in Singapore

According to the latest available update from EMC, the total registered capacity in commercial operation for 2016 in Singapore was 13,366 MW, of which 10,373 MW belonged to CCGT/Cogen/Trigen facilities. In 2016, the peak demand for electricity was 6,846 MW against 2015's 6,696MW. The power market in Singapore is competitive, and power generation companies compete to sell their power output into NEMS through a bidding process with hedging via vesting contracts and retail sales. At the end of December 31, 2016, power sold through vesting contracts represented approximately 25% of total system demand. The existing Vesting Contract Scheme will be maintained at 25% of system demand until the end of the first half of 2018. The decrease in allocated vesting contract volumes will have to be made up through increased retail sales, or otherwise, be translated into increased exposure to more volatile pool prices.

The volatility in the sales price of the revenue associated with the sale of electricity in the NEMS is effectively managed via vesting contracts and direct retail sales which is carried out through a Tuas Power's subsidiary. The effective tariffs Tuas Power received for its electricity output is thus largely dependent on the vesting contract prices and volumes as well as prices secured under retail sales. The Minister has also indicated the year of 2018 for the start of Full Retail Contestability.

Utility sales in Singapore

In 2016, TMUC sold 2,151,143 MT of steam to customers, representing an increase of 8.2% as compared to 1,988,927 MT in 2015.

27

Fuel supply arrangements

In 2016, the majority of our power plants were fueled by coal, gas and oil.

Coal

Our coal supply for our coal-fired power plants is mainly obtained from numerous coal producers in Shanxi Province, Inner Mongolia Autonomous Region and Gansu Province. We also obtain coal from overseas suppliers.

In 2014, the average coal purchase price decreased significantly while the quality of the purchased coals saw marked improvement. We purchased 120.7 million tons of coal and consumed a total of 134.9 million tons of coal. Of our total coal purchases, 52% was purchased under annual contracting arrangements, and the remainder was purchased in the open market. The coal purchase price for our Company, including transportation costs and miscellaneous expenses, averaged approximately RMB494.86 per ton in 2014. Our average unit fuel cost in 2014 decreased by 7.96% from that in 2013.

In 2015, the average coal purchasing price decreased significantly from the previous year. We purchased 130.56 million tons of coal and consumed 132.12 million tons of coal. Of our total coal purchases, 48% was purchased under annual contracting arrangements and the remainder was purchased in the open market. The coal

purchase price for our Company, including transportation costs and miscellaneous expenses, averaged approximately RMB408.71 per ton in 2015. Our average unit fuel cost in 2015 decreased by 13.68% from that in 2014.

In 2016, we purchased 131.60 million tons of coal and consumed 132.18 million tons of coal. Of our total coal purchases, 39% was purchased under annual contracting arrangements and the remainder was purchased in the open market. The coal purchase price for our Company, including transportation costs and miscellaneous expenses, averaged approximately RMB423.16 per ton in 2016, representing an increase of 3.54% compared to 2015. Our average unit fuel cost in 2016 decreased by 1.76% from that in 2015.

Singapore's Tuas Power used coal as primary fuel for its TMUC's cogeneration plants. Coal is procured from coal producers in Indonesia via two long-term coal supply contracts with 10 year and 15 year terms respectively. The prices are indexed to the Global Coal Newcastle Index. In 2016, Tuas Power purchased an incremental amount of coal in the open market.

Gas

Currently, the Company has ten Combined Cycle Gas Turbine Power Plants ("CCGT") in China, including:

1. Huaneng Shanghai Combined Cycle Gas Turbine Power Plant ("Shanghai CCGT") with gas supply transported through the pipeline of "West-East Gas Transport Project";
2. Huaneng Jiangsu Jinling Combined Cycle Gas Turbine Power Plant ("Jinling CCGT") with gas supply transported through the pipeline of "West-East Gas Transport Project";
3. Huaneng Jiangsu Jinling Combined Cycle Gas Turbine Co-generation Power Plant ("Jinling CCGT Co-generation") with gas supply transported through the pipeline of "West-East Gas Transport Project";
4. Huaneng Beijing Co-generation CCGT Power Plant ("Beijing Co-generation CCGT") with gas supply transported through Shaanxi-Beijing Pipeline;
5. Huaneng Zhejiang Tongxiang Combined Cycle Gas Turbine Power Plant ("Tongxiang CCGT"), with gas supply transported through the pipeline of "West-East Gas Transport Project";
6. Huaneng Chongqing Liangjiang Combined Cycle Gas Turbine Power Plant ("Liangjiang CCGT") with gas supply transported through the pipeline of "West-East Gas Transport Project";
7. Huaneng Tianjin Lingang Combined Cycle Gas Turbine Co-generation Power Plant ("Lingang CCGT Co-generation") with gas supply by CNOOC Tianjin Trading Branch and Petro China Tianjin Trading Branch;
8. Huaneng Shanxi Dongshan Combined Cycle Gas Turbine Power Plant ("Dongshan CCGT") with gas supply transported through Shaanxi-Beijing Pipeline II; and
9. Huaneng Hainnan Nanshan Combined Cycle Gas Turbine Power Plant ("Nanshan CCGT") with gas supply by CNOOC Hainan Branch.
10. Huaneng Zhongyuan Combined Cycle Gas Turbine Power Plant ("Zhongyuan CCGT") with gas supply transported through the pipeline of "West-East Gas Transport Project".

Also, the Tuas Power in Singapore has five gas-fired combined cycle generating units and three gas-fired backup boilers. The piped gas for Tuas Power is provided by Pavilion Gas Pte Ltd and Sembcorp Gas Pte Ltd., whereas LNG is provided by Shell Gas Marketing Pte Ltd (formally known as BG Singapore Gas Marketing Pte Ltd).

Oil

Tuas Power maintains operation of one 600 MW oil-fired steam generating unit. The oil supply for Tuas Power is purchased from the open market. With the increased competition from new gas-fired CCPs, fuel oil consumption is expected to be marginal at best and therefore future purchases, if any, will be on a spot basis. Diesel, as backup fuel for oil-fired unites, is also purchased on a spot basis.

Repairs and maintenance

Each of our power plants has a timetable for routine maintenance, regular inspections and repairs. Such timetables and the procedures for the repairs and maintenance of generating units comply with the relevant regulations promulgated by the former Ministry of Electricity Power.

Pursuant to our procedures, generating units are currently operating on a cycle of four to six years. In each cycle, there are four different levels of maintenance:

(i) regular checks and routine maintenance are carried out throughout the period during which generating unit is in operation;

(ii) a small-scale servicing is performed every year, which takes approximately 20 days;

(iii) a medium-scale check-up is carried out between the two overhauls, the length of which depends on the actual condition of the generating unit at the time of the check-up and the inspections and improvements to be carried out; and

(iv) a full-scale overhaul is conducted at the end of each operating cycle, which takes approximately 60 days.

C. Organizational structure

We are 33.33% owned by HIPDC, which in turn is a subsidiary of Huaneng Group. Huaneng Group was established in 1988 with the approval of the State Council. Huaneng Group also holds a 13.83% equity interest in us besides HIPDC. In 2002, Huaneng Group was restructured as one of the five independent power generation group companies to take over the power generation assets originally belonging to the State Power Corporation of China. Huaneng Group has a registered capital of RMB20 billion and is controlled and managed by the central government. Huaneng Group is principally engaged in development, investment, construction, operation and management of power plants; organizing the generation and sale of power (and heat); and the development, investment, construction, production and sale of products in relation to energy, transportation, new energy and environmental protection industries.

HIPDC was established in 1985 as a joint venture controlled by Huaneng Group. HIPDC is engaged in developing, investing, operating and constructing power plants in China. Some of the power plants currently owned and operated by us were originally built and later transferred to us by HIPDC. Both Huaneng Group and HIPDC have agreed to give us preferential rights in the power development business and power assets transfers. See "Item 7.A. Major shareholders" for details.

The following organizational chart sets forth the organizational structure of HIPDC and us as of March 31, 2017:

Notes:

* Huaneng Group indirectly holds 100% equity interests in Pro-Power Investment Limited through its wholly owned subsidiary, China Hua Neng Hong Kong Company Limited, and Pro-Power Investment Limited in turn holds 25% equity interests in HIPDC. As a result, Huaneng Group beneficially holds 100% of equity interests in HIPDC.

** Of the 13.83% equity interest, 10.23% was directly held by Huaneng Group, 3.11% was held by Huaneng Group through its wholly owned subsidiary, China Hua Neng Hong Kong Company Limited, and the remaining approximately 0.49% was held by Huaneng Group through its subsidiary, China Huaneng Finance Corporation Limited.

For a detailed discussion of the Company's subsidiaries, see Note 9 to the Financial Statements.

D. Property, plants and equipment

The following table presents certain summary information on our power plants as of March 31, 2017.

Plant or Expansion (Names as defined below)	Actual In-service Date	Current Installed Capacity (MW)	Ownership %	Attributable Capacity MW	Type of Fuel
Heilongjiang Province					
Xinhua Power Plant	Unit I: Sep. 1979	1 x 200	70%	140	Coal
	Unit II: Sep. 2005	1 x 330	70%	231	
Hegang Power Plant	Unit I: Nov. 1998	1x 300	64%	192	Coal
	Unit II: Nov. 1999	1x 300	64%	192	
	Unit III: Apr. 2007	1 x 600	64%	384	
Daqing Co-generation	Unit I: Jun. 2013	1 x 350	100%	350	Coal
	Unit II: Aug. 2013	1 x 350	100%	350	
Yichun Co-generation	Unit I: Sep. 2015	1 x 350	100%	350	Coal

Plant or Expansion (Names as defined below)	Actual In-service Date	Current Installed Capacity (MW)	Ownership %	Attributable Capacity MW	Type of Fuel
	Unit II: Dec. 2015	1 x 350	100%	350	
Sanjiangkou Wind Power	66 turbines: Feb. 2010	99	82.85%	82	Wind
Linjiang Jiangsheng Wind Power	66 turbines: Oct. 2015	99	82.85%	82	Wind
Daqing Heping Aobao Wind Power	32 turbines: Dec. 2011	96	100%	96	Wind
	32 turbines: May. 2012	96	100%	96	
	16 turbines: Dec. 2016	48	100%	48	
	16 turbines: Dec. 2016	48	100%	48	
Jilin Province					
Jiutai Power Plant	Unit I: Oct. 2009	1 x 670	100%	670	Coal
	Unit II: Dec. 2009	1 x 670	100%	670	
Changchun Co-generation	Unit I: Dec. 2009	1 x 350	100%	350	Coal
	Unit II: Apr. 2009	1 x 350	100%	350	
Nongan Biomass	Dec. 2011	1 x 25	100%	25	Biomass
Linjiang Jubao Hydropower	Sep. 2004	2 x 10	100%	20	Solar
Zhenlai Wind Power	33 turbines: Jun. 2009	49.5	100%	49.5	Wind
	33 turbines: Dec. 2011	49.5	100%	49.5	
Siping Wind Power	50 turbines: Oct. 2010	75	100%	75	Wind
	25 turbines: Nov. 2010	50	100%	50	
	50 turbines: Dec. 2010	75	100%	75	
Tongyu Tuanjie Wind Power	74 turbines: Dec. 2015	148	100%	148	Wind
Liaoning Province					
Dalian Power Plant Phase I	Unit I: Sep. 1988	2 x 350	100%	700	Coal
Phase II	Unit II: Dec. 1988 Unit III: Jan. 1999	2 x 350	100%	700	Coal
Dandong Power Plant	Unit IV: Jan. 1999 Unit I: Jan. 1999	2 x 350	100%	700	Coal
Yingkou Power Plant Phase I	Unit II: Jan. 1999 Unit I: Jan. 1996	2 x 320	100%	640	Coal
Phase II	Unit II: Dec. 1996 Unit III: Aug. 2007	2 x 600	100%	1,200	Coal
Yingkou Co-generation	Unit IV: Oct. 2007 Unit I: Dec. 2009	2 x 330	100%	660	Coal

	Unit II: Dec. 2009				
Wafangdian Wind Power	24 turbines: Jun. 2011	48	100%	48	Wind
Changtu Wind Power	33 turbines: Nov. 2012 24 turbines: Oct. 2014	97.5	100%	97.5	Wind
Suzihe Hydropower	2012	3 x 12.5	100%	37.5	Hydro
Dandong Photovoltaic	May. 2016	10	100%	10	Solar
Yingkou Co-generation Photovoltaic	Jun. 2016	10	100%	10	Solar
Xianrendao Co-generation	Mar. 2017	1 x 50	100%	50	Coal
Inner Mongolia Autonomous Region					
Huade Wind Power Phase I	33 turbines: Dec. 2009	49.5	100%	49.5	Wind
Phase II	33 turbines: Jun. 2011	49.5	100%	49.5	Wind
Hebei Province					
Shang' an Power Plant Phase I	Unit I: Aug. 1990	2 x 350	100%	700	Coal
Phase II	Unit II: Dec. 1990 Unit III: Oct. 1997 Unit IV: Oct. 1997	2 x 330	100%	660	Coal

Plant or Expansion (Names as defined below)	Actual In-service Date	Current Installed Capacity (MW)	Ownership %	Attributable Capacity MW	Type of Fuel
Phase III	Unit V: Jul. 2008 Unit VI: Aug. 2008	2 x 600	100%	1,200	Coal
Kangbao Wind Power Phase I	33 turbines: Jan. 2011	49.5	100%	49.5	Wind
Kangbao Xitan Photovoltaic	Jun. 2016	20	100%	20	Solar
Gansu Province					
Pingliang Power Plant	Unit I: Sep. 2000 Unit II: Jun. 2001 Unit III: Jun. 2003	3 x 325	65%	633.75	Coal
	Unit IV: Nov. 2003	1 x 330	65%	214.5	Coal
	Unit V: Feb. 2010 Unit VI: March 2010	2 x 600	65%	780	Coal
Jiuquan Wind Power	259 turbines: Dec. 2011	401	100%	401	Wind
Jiuquan II Wind Power	100 turbines: Dec. 2014	200	100%	200	Wind
	100 turbines: Jun. 2015	200	100%	200	Wind
Yumen Wind Power	24 turbines: Jun. 2015	48	100%	48	Wind
	67 turbines: Jun. 2015	100.5	100%	100.5	Wind
Yigang Wind Power	96 turbines: Dec. 2015	192	100%	192	Wind
Beijing Municipality					
Beijing Co-generation	Unit I: Jan. 1998 Unit II: Jan. 1998	2 x 165	41%	135.3	Coal
	Unit III: Dec. 1998 Unit IV: Jun. 1999	2 x 220	41%	180.4	Coal
	Unit V: Apr. 2004	1 x 75	41%	30.75	Coal
Beijing Co-generation CCGT	Unit I: Dec. 2011	2 x 306.9	41%	251.66	Gas
	Unit II: Dec. 2011 Unit III: Dec. 2011	1 x 309.6	41%	126.936	Gas
Tianjin Municipality					
Yangliuqing Co-generation	Unit I: Dec. 1998 Unit II: Sep. 1999 Unit III: Dec. 2006 Unit IV: May 2007	4 x 300	55%	660	Coal
Lingang Co-generation CCGT	Unit I: Dec. 2014	1 x 313 1 x 150	100%	463	Gas
Shanxi Province					
	Unit I: Aug. 1994	2 x 100	60%	120	Coal

Yushe Power Plant					
Phase I					
	Unit III: Dec. 1994				
Phase II	Unit IV: Oct. 2004	2 x 300	60%	360	Coal
	Unit II: Nov. 2004				
Zuoquan Power Plant	Unit I: Dec. 2011	2 x 673	80%	1,076.8	Coal
	Unit II: Jan. 2012				
Dongshan CCGT	Unit I: Oct. 2015	2 x297.7	100%	595.4	Gas
	Unit II: Oct. 2015				
	Unit III: Oct. 2015	263.6	100%	263.6	Gas
Shandong Province					
Dezhou Power Plant Phase I	Unit I: 1992	1 x 330	100%	330	Coal
	Unit II: 1992	1 x 320	100%	320	Coal
Phase II	Unit III: Jun. 1994	1 x 330	100%	330	Coal

Plant or Expansion (Names as defined below)		Actual In-service Date	Current Installed Capacity (MW)	Ownership %	Attributable Capacity MW	Type of Fuel
		Unit IV: May 1995	1 x 320	100%	320	Coal
	Phase III	Unit V: Jun. 2002	2 x 700	100%	1,400	Coal
		Unit VI: Oct. 2002				
Jining Power Plant	Coal-fired	Unit V: Jul. 2003	2 x 135	100%	270	Coal
		Unit VI: Aug. 2003				
	Co-generation	Unit I: Nov. 2009	2 x 350	100%	700	Coal
		Unit II: Dec. 2009				
Xindian Power Plant	Phase III	Unit V: Sep 2006	2 x 300	95%	570	Coal
		Unit VI: Nov. 2006				
Weihai Power Plant	Phase II	Unit III: Mar. 1998	2 x 320	60%	384	Coal
		Unit IV: Nov. 1998				
	Phase III	Unit V: Dec. 2012	2 x 680	60%	816	Coal
		Unit VI: Dec. 2012				
Rizhao Power Plant	Phase II	Dec. 2008	2 x 680	100%	1,360	Coal
Zhanhua Co-generation		Jul. 2005	2 x 165	100%	330	Coal
Baiyanghe Power Plant		Unit I: Oct. 2003	1 x 145	80%	116	Coal
		Unit II: Oct. 2003	1 x 145	80%	116	
		Unit III: Dec. 2009	1 x 300	80%	240	
		Unit IV: Dec. 2009	1 x 300	80%	240	
Rizhao Power Plant	Phase I	Unit I: Sep. 1999	1 x 350	88.8%	311	Coal
		Unit II: Jan. 2003	1 x 350	88.8%	311	
Jiaxiang Power Plant		Unit I: Oct. 2006	1 x 330	40%	132	Coal
		Unit II: May. 2007	1 x 330	40%	132	

Jining Co-generation	Unit I: Apr. 2004	1 x 30	40%	12	Coal
	Unit II: Jul. 2004	1 x 30	40%	12	
Qufu Co-generation	Units I: Feb. 2009	1 x 225	40%	90	Coal
	Unit II: Sep. 2009	1 x 225	40%	90	
Huangtai Power Plant	Unit I: Nov. 1987	1 x 330	72%	237.6	Coal
	Unit II: Jan. 2011	1 x 350	72%	252	
	Unit III: Jan. 2011	1 x 350	72%	252	
Yantai Power Plant	Unit I: Apr. 1996	1 x 110	80%	88	Coal
	Unit II: Oct. 2005	1 x 160	80%	128	
	Unit III: Dec. 2005	1 x 160	80%	128	
	Unit IV: Oct. 2006	1 x 160	80%	128	
Linyi Power Plant	Unit I: Dec. 2012	1 x 350	60%	210	Coal
	Unit II: Oct. 2013	1 x 350	60%	210	
	Unit III: Dec. 1997	1 x 140	60%	84	
	Unit IV: Apr. 2003	1 x 140	60%	84	
	Unit V: Sep. 2003	1 x 140	60%	84	
	Unit VI: Apr. 2005	1 x 140	60%	84	
Jining Yunhe Power Plant	Unit I: Jul. 2000	1 x 145	78.68%	114.09	Coal
	Unit II: Nov. 2000	1 x 145	78.68%	114.09	
	Unit III: Sep. 2003	1 x 145	78.68%	114.09	
	Unit IV: Feb. 2004	1 x 145	78.68%	114.09	
	Unit V: Sep. 2006	1 x 330	78.68%	259.64	
	Unit VI: Mar. 2006	1 x 330	78.68%	259.64	
Liaocheng Co-generation	Unit I: Jan. 2006	1 x 330	60%	198	Coal

Plant or Expansion (Names as defined below)	Actual In-service Date	Current Installed Capacity (MW)	Ownership %	Attributable Capacity MW	Type of Fuel
	Unit II: Sep. 2006	1 x 330	60%	198	
Taian Power Plant	Unit I: May. 2007	1 x 150	80%	120	Coal
	Unit II: Dec. 2007	1 x 150	80%	120	
Laiwu Power Plant	Unit I: Dec. 2015	1 x 1000	64%	640	Coal
	Unit II: Nov. 2016	1 x 1000	64%	640	
Muping Wind Power	28 turbines: Dec. 2010	42	80%	34	Wind
Penglai Wind Power	24 turbines: Sep. 2014	48	80%	38.4	Wind
	1 turbine: Sep. 2014	1.8	80%	1.44	
	24 turbines: Oct. 2016	48	80%	3.8.4	
	1 turbine: Oct. 2016	1.8	80%	1.44	
Rushan Wind Power	8 turbines: Sep. 2014	12	80%	9.6	Wind
	11 turbines: Sep. 2014	16.5	80%	13.2	
	2 turbines: Oct. 2016	3	80%	2.4	
	5 turbines: Oct. 2016	10.5	80%	8.4	
Changdao Wind Power	8 turbines: Sep. 1999	4.8	48%	10	Wind
	6 turbines: Dec. 2004	3.6	48%	1.73	
	3 turbines: Jul. 2005	2.25	48%	1.08	
	1 turbine: Apr. 2006	1.3	48%	0.62	
	3 turbines: Apr. 2006	2.25	48%	1.08	
	2 turbines: Sep. 2006	2.6	48%	1.25	
	1 turbine: Sep. 2006	0.75	48%	0.36	
	2 turbines: Jan. 2007	1.5	48%	0.72	
	2 turbines: Oct. 2008	1.5	48%	0.72	
Rongcheng Wind Power	1 turbine: Jan. 2006	1.5	48%	0.72	Wind
	1 turbine: Jan. 2006	1.5	48%	0.72	
	1 turbine: Jan. 2006	1.5	48%	0.72	
	2 turbines: Feb. 2006	3	48%	1.44	
		3	48%	1.44	

		2 turbines: Feb. 2006 3 turbines: Mar. 2006	4.5	48%	2.16	
Dongying Wind Power		32 turbines: Dec. 2009	48	56%	27	Wind
Boshan Photovoltaic		May. 2016	12	80%	10	Solar
Sishui Photovoltaic		Jun. 2015	20	80%	16	Solar
Gaozhuang Photovoltaic		May. 2016	20	80%	16	Solar
Jining Co-generation Photovoltaic			20	80%	16	Solar
Henan Province						
Qinbei Power Plant	Phase I	Unit I: Nov. 2004 Unit II: Dec. 2004	2 x 600	60%	720	Coal
Phase II		Unit III: Nov. 2007 Unit IV: Nov. 2007	2 x 600	60%	720	Coal
Phase III		Unit V: Mar. 2012 Unit VI: Feb. 2013	2 x 1000	60%	1,200	Coal
Zhongyuan CCGT		Unit I: Aug. 2007 Unit II: Jan. 2008	2 x 390	90%	702	Coal
Luoyang Co-generation Power Plant		Unit I: May. 2015 Unit II: Jun. 2015	2 x 350	80%	560	Coal
Luoyang Yangguang Power Plant		Unit I: Jun. 2006 Unit II: Oct. 2006	2 x 135	80%	216	Coal
Mianchi Co-generation		Unit I: Dec. 2016 Unit II: Dec. 2016	2 x 350	60%	420	Coal
Guoji Wind Power		16 turbines: Dec 2016	32	90%	28.8	Wind
Jiangsu Province						

Plant or Expansion (Names as defined below)	Actual In-service Date	Current Installed Capacity (MW)	Ownership %	Attributable Capacity MW	Type of Fuel
Nantong Power Plant Phase I	Unit I: Sep. 1989 Unit II: Mar. 1990	2 x 352	100%	704	Coal
Phase II	Unit III: Jul. 1999 Unit IV: Oct. 1999	2 x 350	100%	700	Coal
Nanjing Power Plant	Unit I: Mar. 1994 Unit II: Oct. 1994	2 x 320	100%	640	Coal
Taicang Power Plant Phase I	Unit I: Dec. 1999 Unit II: Apr. 2000	2 x 320	75%	480	Coal
Phase II	Unit III: Jan. 2006 Unit IV: Feb. 2006	2 x 630	75%	945	Coal
Huaiyin Power Plant Phase II	Unit III: Jan. 2005 Unit IV: Mar. 2005	2 x 330	63.64%	420	Coal
Phase III	Unit V: May 2006 Unit VI: Sep. 2006	2 x 330	63.64%	420	Coal
Jinling Power Plant CCGT	Unit I: Dec. 2006 Unit II: Mar. 2007	2 x 390	60%	468	Gas
CCGT Cogeneration	Unit I: April 2013 Unit II: May 2013	2 x 126.7 2 x 64.6	51%	195.1	Gas
Jinling Coal-Fired	Unit III: Dec. 2009 Unit IV: Aug. 2012	2 x 1,030	60%	1,236	Coal
Suzhou Co-generation	Unit I: Aug. 2006 Unit II: Oct. 2006	2 x 60	53.45%	64.14	Coal
Nanjing Chemical Industry Park Co-generation	Unit I: Apr. 2016	50	70%	35	Coal
	Unit II: Dec. 2016	50	70%	35	
Qidong Wind Power Phase I	61 turbines: Mar. 2009	91.5	65%	59.5	Wind
Phase II	25 turbines: Jan. 2011	50	65%	32.5	Wind
	22 turbines: Jun. 2012	44	65%	28.6	Wind
Rudong Wind Power	24 turbines: Nov. 2013	48	90%	43.2	Wind
Tongshan Wind Power	25 turbines: Mar. 2016	50	70%	35	Wind
Luhe Wind Power	25 turbines: Dec. 2016	50	100%	50	Wind
Rudong Offshore Wind Power		12 x 4.2	70%	35.3	Wind
Shanghai Municipality					
Shidongkou I	Unit I: Feb. 1988 Unit II: Dec. 1988 Unit III: Sep. 1989 Unit IV: May 1990	4 x 325	100%	1,300	Coal
Shidongkou II	Unit I: Jun. 1992 Unit II: Dec. 1992	2 x 600	100%	1,200	Coal

Shidongkou Power	Unit I: Oct. 2011 Unit II: Oct. 2011	2 x 660	50%	660	Coal
Shanghai CCGT	Unit I: May 2006 Unit II: Jun. 2006 Unit III: Jul. 2006	3 x 390	70%	819	Gas
Chongqing Municipality					
Luohuang Power Plant Phase I	Unit I: Sep. 1991 Unit II: Feb. 1992	2 x 360	60%	432	Coal
Phase II	Unit III: Dec. 1998 Unit IV: Dec. 1998	2 x 360	60%	432	Coal
Phase III	Unit V: Dec. 2006	2 x 600	60%	720	Coal

Plant or Expansion (Names as defined below)		Actual In-service Date	Current Installed Capacity (MW)	Ownership %	Attributable Capacity MW	Type of Fuel
		Unit VI: Jan. 2007				
Liangjiang CCGT		Unit I: Oct. 2014 Unit II: Dec. 2014	2 x 467	90%	840.6	Gas
Zhejiang Province						
Changxing Power Plant		Unit I: Dec. 2014 Unit II: Dec. 2014	2 x 660	100%	1320	Coal
Yuhuan Power Plant	Phase I	Unit I: Nov. 2006 Unit II: Dec. 2006	2 x 1,000	100%	2,000	Coal
	Phase II	Unit III: Nov. 2007 Unit IV: Nov. 2007	2 x 1,000	100%	2,000	Coal
Tongxiang CCGT		Unit I: Sep. 2014	1 x 258.4	95%	245.48	Gas
		Unit II: Sep. 2014	1 x 200	95%	190	Gas
Changxing Photovoltaic		Dec. 2014	5	100%	5	Solar
		Mar. 2015	5	100%	5	Solar
Changxing Hongqiao Photovoltaic		Sep. 2016	30	100%	30	Solar
Hunan Province						
Yueyang Power Plant	Phase I	Unit I: Sep. 1991 Unit II: Dec. 1991	2 x 362.5	55%	398.75	Coal
	Phase II	Unit III: Mar. 2006 Unite IV: May 2006	2 x 300	55%	330	Coal
	Phase III	Unit V: Jan. 2011	2 x 600	55%	660	Coal
		Unit VI: Aug. 2012				
Xiangqi Hydropower		Unit I: Dec. 2011 Unit II: May 2012 Unit III: Jul. 2012 Unit IV: Aug. 2012	4 x 20	100%	80	Hydro
Subaoding Wind Power		40 turbines: Dec. 2014	80	100%	80	Wind
		35 turbines: May. 2015	70	100%	70	Wind
Guidong Wind Power		42 turbines: Aug. 2015	48	100%	48	Wind
		18 turbines: Sep. 2015	36	100%	36	Wind
Hubei Province						
Enshi Maweigou Hydropower		Dec. 2011	3 x 5	100%	15	Hydro
		Dec. 2015	2 x 20	100%	40	Hydro
Dalongtan Hydropower		Unit I: May 2006	3 x 12	97%	34.92	Hydro
		Unit II: Aug. 2005 Unit III: Mar. 2006	1 x 1.6	97%	1.55	Hydro
Wuhan Power Plant	Phase I	Unit I: Jun. 1993 Unit II: Jan. 1994	2 x 300	75%	450	Coal

	Phase II	Unit III: May 1997 Unite IV: Dec. 1997	2 x 330	75%	495	Coal
	Phase III	Unit V: Oct. 2006 Unit VI: Dec. 2006	2 x 600	75%	900	Coal
Jingmen Co-generation		Unit I: Nov. 2014 Unit II: Oct. 2014	2 x 350	100%	700	Coal
Yingcheng Co-generation		Unit II: Jan. 2015	1 x 350	100%	350	Coal
		Unit I: Jun. 2016	1 x 50	100%	50	Coal
Jieshan Wind Power	Phase I	24 turbines: Jun. 2015	48	100%	48	Wind
	Phase II	36 turbines: Aug. 2016	72	100%	72	Wind

Jiangxi Province

Plant or Expansion (Names as defined below)		Actual In-service Date	Current Installed Capacity (MW)	Ownership %	Attributable Capacity MW	Type of Fuel
Jinggangshan Power Plant	Phase I	Unit I: Dec. 2000	2 x 300	100%	600	Coal
	Phase II	Unit II: Aug. 2001 Unit III: Nov. 2009 Unit IV: Dec. 2009	2 x 660	100%	1,320	Coal
Jianggongling Wind Power		24 turbines: Dec. 2014	48	100%	48	Wind
Ruijin Power Plant		Unit I: May 2008 Unit II: Aug. 2008	2 x 350	100%	700	Coal
Anyuan Power Plant		Unit I: Jun. 2015 Unit II: Aug. 2015	2 x 660	100%	1,320	Coal
Hushazui Wind Power		13 turbines: Dec. 2016	26	100%	26	Wind
Anhui Province						
Chaohu Power Plant		Unit I: May 2008 Unit II: Aug. 2008	2 x 600	60%	720	Coal
Hualiangting Hydropower	Phase I	Unit I: Oct. 1981	2 x 10	100%	20	Hydro
	Phase II	Unit II: Nov. 1981 Unit III: Nov. 1987 Unit IV: Nov. 1987	2 x 10	100%	20	Hydro
Huaining Wind Power		25 turbines: Jun. 2016	50	100%	50	Wind
Fujian Province						
Fuzhou Power Plant	Phase I	Unit I: Sep. 1988 Unit II: Dec. 1988	2 x 350	100%	700	Coal
	Phase II	Unit III: Oct. 1999 Unit IV: Oct. 1999	2 x 350	100%	700	Coal
	Phase III	Unit V: Jul. 2010	2 x 660	100%	660	Coal
Guangdong Province						
Shantou Power Plant	Phase I	Unit VI: Oct. 2011 Unit I: Jan. 1997 Unit II: Jan. 1997	2 x 300	100%	600	Coal
	Phase II	Unit III: Oct. 2005	1 x 600	100%	600	Coal
Haimen		Unit I: Jul. 2009 Unit II: Oct. 2009	2 x 1,036	100%	2,072	Coal

Haimen Power		Unit I: Mar. 2013 Unit II: Mar. 2013	2 x 1,036	80%	1,657.6	Coal
Shantou Photovoltaic		Sep. 2016	17	100%	17	Solar
Yunnan Province						
Diandong Energy	Phase I	Unit I: Feb. 2006 Unit II: Jul. 2006	2 x 600	100%	1,200	Coal
	Phase II	Unit III: Nov. 2006 Unit IV: May 2007	2 x 600	100%	1,200	Coal
Yuwang Energy	Phase I	Unit I: Jul. 2009 Unit II: Feb. 2010	2 x 600	100%	1,200	Coal
Fuyuan Wenbishan Wind Power		20 turbines: Dec. 2014	40	100%	40	Wind
Fuyuan Yibasan Wind Power		24 turbines: Dec. 2014	48	100%	48	Wind
Fuyuan Shengjing Wind Power		20 turbines: Jun. 2016	48	100%	48	Wind
Hainan Province						
Haikou Power Plant		Unit IV: May 2000 Unit V: May 1999	2 x 138	91.8%	253.368	Coal
		Unit VIII: Apr. 2006 Unit IX: May 2007	2 x 330	91.8%	605.88	Coal

Plant or Expansion (Names as defined below)		Actual In-service Date	Current Installed Capacity (MW)	Ownership %	Attributable Capacity MW	Type of Fuel
Dongfang Power Plant	Phase I	Unit I: Jun. 2009 Unit II: Dec. 2009	2 x 350	91.8%	642.6	Coal
	Phase II	Unit III: May 2012 Unit IV: Dec. 2012	2 x 350	91.8%	642.6	Coal
Nanshan Co-generation		Unit I: Apr. 1995 Unit II: Apr. 1995	2 x 50	91.8%	91.8	Gas
		Unit III: Oct. 2003 Unit IV: Oct. 2003	2 x 16	91.8%	29.370	Gas
Gezhen Hydropower		Unit I: Nov. 2009 Unit II: Nov. 2009	2 x 40	91.8%	73.40	Hydro
		Unit III: Dec. 2009 Unit IV: Dec. 2009	2 x 1	91.8%	1.836	Hydro
Wenchang Wind Power		34 turbines: Jan. 2009	51.5	91.8%	47.277	Wind
Dongfang Photovoltaic		Jul. 2016	12	91.8%	11.016	Solar
Guizhou Province						
Panxian Wind Power		12 turbines: Dec. 2015	24	100%	24	Wind
Singapore		Unit I: Mar. 1999	1 x 600	100%	600	Oil
Tuas Power		Unit III: Nov. 2001 Unit IV: Jan. 2002 Unit V: Feb. 2005 Unit VI: Sep. 2005	4 x 367.5	100%	1,470	Gas
		Unit VII: Dec. 2013	405.9	100%	405.9	Gas
TMUC	Phase I	Feb. 2013	1 x 101	100%	101	Coal & biomass
	Phase IIA	Jun. 2014	1 x 32.5	100%	32.5	Coal & biomass

The following table presents the availability factors and the capacity factors of our coal-fired operating power plants in China for the years ended December 31, 2014, 2015 and 2016.

Coal-fired Power Plant	Availability factor (%)			Capacity factor (%)		
	2014	2015	2016	2014	2015	2016
Liaoning Province						
Dalian	97.76	92.95	99.86	54.13	49.04	49.91

Dandong	95.89	93.34	97.4	52.14	49.74	47.49
Yingkou	94.16	100	100	49.64	48.86	48.70
Yingkou Co-generation	100	100	100	52.63	53.35	43.55

39

Coal-fired Power Plant	Availability factor (%)			Capacity factor (%)		
	2014	2015	2016	2014	2015	2016
Hebei Province						
Shang'an	98.15	95.50	93.18	63.52	66.74	57.50
Gansu Province						
Pingliang	94.63	88.83	96.3	51.85	27.76	39.77
Beijing Municipality						
Beijing	94.48	85.60	92.79	54.79	53.01	45.89
Tianjin Municipality						
Yangliuqing	93.9	95.02	96.78	62.95	54.02	53.38
Shanxi Province						
Yushe	92.53	93.18	94.77	61.22	53.32	53.01
Zuoquan	92.93	90.93	87.61	50.88	47.71	46.68
Shandong Province						
Dezhou	97.01	97.01	93.96	64.46	60.83	57.97
Jining	92.03	92.03	91.35	55.56	57.58	59.22
Weihai	95.87	97.04	93.47	65.83	64.03	65.83
Xindian	87.15	89.12	90.10	62.83	60.08	63.07
Rizhao II	91.27	92.22	94.08	64.23	66.91	66.34
Zhanhua Co-generation	95.63	94.33	97.32	57.92	51.98	55.27
Henan Province						
Qinbei	92.85	97.18	96.69	50.92	46.22	55.06
Luoyang Cogeneration Power Plant	-	-	92.71	-	-	46.20
Luoyang Yangguang Power Plant	-	-	100	-	-	67.70
Mianchi Co-generation	-	-	100	-	-	59.04
Jiangsu Province						
Nantong	90.6	91.41	91.37	55.67	50.15	52.99
Nanjing	94.45	93.54	96.92	62.52	47.59	57.24
Taicang	99.99	94.39	99.84	65.2	60.57	71.16
Huaiyin	91.4	91.40	89.66	58.26	50.28	48.04
Jinling Coal-fired	88.66	89.82	93.85	64.1	64.99	70.19
Suzhou Co-generation	94.27	98.42	96.41	76.71	75.10	74.35
Shanghai Municipality						
Shidongkou I	98.53	95.43	99.86	52.96	44.44	43.53
Shidongkou II	90.15	92.57	92.81	50.71	51.15	55.07
Zhejiang Province						
Changxing	93.9	97.69	96.5	29.82	47.03	49.18
Yuhuan	95.45	95.53	93.64	63.22	55.43	55.58
Chongqing Municipality						
Luohuang	94.84	94.44	95.58	48.21	42.23	35.16
Hunan Province						
Yueyang	99.97	98.94	99.71	39.27	35.04	33.56
Hubei Province						
Wuhan Power	92.17	95.36	94.54	53.06	46.53	46.84
Jingmen Thermal Power	100	98.09	97.86	34.28	26.80	41.39
Yingcheng Thermal Power	-	100	90.80	-	33.52	44.30

Coal-fired Power Plant	Availability factor (%)			Capacity factor (%)		
	2014	2015	2016	2014	2015	2016
Jiangxi Province						
Jinggangshan	95.03	92.92	92.19	50.5	53.47	49.55
Ruijin Power	-	-	92.43	-	-	49.77
Pingxiang	-	-	88.6	-	-	55.29
Anhui Province						
Chaohu Power	95.03	95.50	86.29	50.5	55.62	56.42
Fujian Province						
Fuzhou	94.53	91.62	99.98	58.66	45.72	36.05
Guangdong Province						
Shantou	96.55	98.42	97.91	50.75	43.29	43.39
Haimen	96.99	96.53	94.41	53.09	45.98	38.88
Yunnan Province						
Diandong	94.92	98.68	98.82	28.32	19.00	15.73
Yuwang	95.36	96.79	100	34.88	15.07	2.54
Hainan Province						
Haikou	95.36	96.02	91.15	34.88	87.47	60.46
Dongfang	94.92	92.73	94.33	28.32	74.05	60.23

The details of our operating power plants, construction projects and related projects as of March 31, 2017 are described below.

Power Plants in Heilongjiang Province

Xinhua Power Plant

Huaneng Xinhua Power Plant ("Xinhua Power Plant") is located in the city of Daqing in Heilongjiang Province. Xinhua Power Plant, including Phase I and Phase II, has an installed capacity of 530 MW and consists of one 200 MW coal-fired generating unit and one 330 MW coal-fired generating unit and which commenced operations in 1979 and 2005 respectively. We hold 70% equity interest in Xinhua Power Plant.

The coal supply for Xinhua Power Plant is mainly obtained from Inner Mongolia Autonomous Region. Xinhua Power Plant typically stores 120,000 tons of coal on site. Xinhua Power Plant obtained 93.1% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Xinhua Power Plant in 2016 was RMB269.07 (2015: RMB291.78) per ton.

Xinhua Power Plant sells its electricity to Heilongjiang Electric Power Company.

Hegang Power Plant

Huaneng Hegang Power Plant ("Hegang Power Plant") is located in the city of Hegang in Heilongjiang Province. Hegang Power Plant, including Phases I to III, has an installed capacity of 1,200 MW and consists of two 300 MW coal-fired generating unit and one 600 MW coal-fired generating unit and which commenced operations in 1998, 1999 and 2007 respectively. We hold 64% equity interest in Xinhua Power Plant.

The coal supply for Hegang Power Plant is mainly obtained from the city of Hegang. Hegang Power Plant typically stores 120,000 tons of coal on site. Hegang Power Plant obtained 62.5% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Hegang Power Plant in 2016 was RMB317.73 (2015: RMB310.49) per ton.

Hegang Power Plant sells its electricity to Heilongjiang Electric Power Company.

Daqing Co-generation

Huaneng Daqing Co-generation Power Plant ("Daqing Co-generation") is located in the city of Daqing in Heilongjiang Province. Daqing Co-generation, including Phase I and Phase II, has an installed capacity of 700 MW and consists of two 350 MW coal-fired generating units which commenced operations in 2003. We hold 100% equity interest in Daqing Co-generation.

The coal supply for Daqing Co-generation is mainly obtained from Inner Mongolia Autonomous Region. Daqing Co-generation typically stores 80,000 tons of coal on site. Daqing Co-generation obtained 88.9% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Daqing Co-generation in 2016 was RMB263.84 (2015: RMB288.24) per ton.

Daqing Co-generation sells its electricity to Heilongjiang Electric Power Company.

Yichun Co-generation

Huaneng Yichun Co-generation Power Plant ("Yichun Co-generation") is located in the city of Yichun in Heilongjiang Province. Yichun Co-generation, including Phase I and Phase II, has an installed capacity of 700 MW and consists of two 350 MW coal-fired generating units which commenced operations in 2015. We hold 100% equity interest in Yichun Co-generation.

The coal supply for Yichun Co-generation is mainly obtained from the city of Hegang. Daqing Co-generation typically stores 80,000 tons of coal on site. Yichun Co-generation obtained 93.3% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Yichun Co-generation in 2016 was RMB334.03 (2015: RMB334.78) per ton.

Yichun Co-generation sells its electricity to Heilongjiang Electric Power Company.

Sanjiangkou Wind Power

Huaneng Shanjiangkou Wind Power Plant ("Sanjiangkou Jiangsheng Wind Power") is located in the city of Jiamusi in Heilongjiang Province. The installed capacity of Sanjiangkou Wind Power Plant is 99 MW and consists of 66 turbines. It commenced operation in February 2010. We hold 82.85% equity interest in Sanjiangkou Wind Power Plant.

Sanjiangkou Wind Power sells its electricity to Heilongjiang Electric Power Company.

Linjiang Jiangsheng Wind Power

Linjiang Jiangsheng Wind Power Plant ("Linjiang Jiangsheng Wind Power") is located in the city of Jiamusi in Heilongjiang Province. The installed capacity of Linjiang Jiangsheng Wind Power Plant is 99 MW and consists of 66 turbines. It commenced operation in October 2015. We hold 82.85% equity interest in Linjiang Jiangsheng Wind Power Plant.

Linjiang Jiangsheng Wind Power sells its electricity to Heilongjiang Electric Power Company.

Daqing Heping Aobao Wind Power

Daqing Heping Aobao Wind Power Plant ("Daqing Heping Aobao Wind Power") is located in the city of Jiamusi in Heilongjiang Province. Phase I of the Daqing Heping Aobao Wind Power commenced operation in December 2011, with an installed capacity of 96 MW, consisting of 32 wind power turbines of 3 MW each. Phase II of the Daqing Heping Aobao Wind Power commenced operation in May 2012, with an installed capacity of 96 MW, consisting of 32 wind power turbines of 3 MW each. Phase III of the Daqing Heping Aobao Wind Power commenced operation in December, with an installed capacity of 96 MW, consisting of 32 wind power turbines of 3 MW each. We hold 100% of the equity interest in Daqing Heping Aobao Wind Power.

Daqing Heping Aobao Wind Power sells its electricity to Heilongjiang Electric Power Company.

Power Plants in Jilin Province

Jiutai Power Plant

Huaneng Jiutai Power Plant ("Jiutai Power Plant") is located in the city of Changchun in Jilin Province. Jiutai Power Plant, including Phase I and Phase II, has an installed capacity of 1,340 MW and consists of two 670 MW coal-fired generating units which commenced operations in 2009. We hold 100% equity interest in Jiutai Power Plant.

The coal supply for Jiutai Power Plant is mainly obtained from Inner Mongolia Autonomous Region. Jiutai Power Plant typically stores 120,000 tons of coal on site. Jiutai Power Plant obtained 63% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Jiutai Power Plant in 2016 was RMB260.52 (2015: RMB282.47) per ton.

Jiutai Power Plant sells its electricity to Jilin Electric Power Company.

Changchun Co-generation

Huaneng Changchun Co-generation Power Plant ("Changchun Co-generation") is located in the city of Changchun in Jilin Province. Changchun Co-generation, including Phase I and Phase II, has an installed capacity of 700 MW and consists of two 350 MW coal-fired generating units which commenced operations in 2009. We hold 100% equity interest in Changchun Co-generation.

The coal supply for Changchun Co-generation is mainly obtained from Inner Mongolia Autonomous Region. Changchun Co-generation typically stores 160,000 tons of coal on site. Changchun Co-generation obtained 88% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Changchun Co-generation in 2016 was RMB288.58 (2015: RMB299.64) per ton.

Changchun Co-generation sells its electricity to Jilin Electric Power Company.

Nongan Biomass

Huaneng Nongan Biomass Power Plant ("Nongan Biomass") is located in the city of Changchun in Jilin Province. The installed capacity of Nongan Biomass is 25 MW and consists of one 25 MW generating unit, which commenced operation in December 2011. We hold 100% equity interest in Nongan Biomass.

Nongan Biomass also uses coal to meet part of its fuel needs. Nongan Biomass typically stores 40,000 tons of coal on site. The average coal purchase price for Nongan Biomass in 2016 was RMB286.16 (2015: RMB292.82) per ton.

Nongan Biomass sells its electricity to Jilin Electric Power Company.

Linjiang Jubao Hydropower

Huaneng Linjiang Jubao Hydropower Station ("Linjiang Jubao Hydropower") is located in the city of Baishan of Jilin Province. Linjiang Jubao Hydropower consists of four 20 MW hydraulic generating units with a total installed capacity of 80 MW. In December 2011, Unit I of Linjiang Jubao Hydropower with an installed capacity of 20 MW passed a trial run. Unit I and Unit II of Linjiang Jubao Hydropower with an installed capacity of 20 MW each commenced operation in December 2011 and May 2012, respectively. Unit III and Unit IV of Linjiang Jubao Hydropower with an installed capacity of 20 MW commenced operation in May and August 2012, respectively. We hold 100% equity interest in Linjiang Jubao Hydropower.

Zhenlai Wind Power

Huaneng Zhenlai Mali Wind Power Plant ("Zhenlai Wind Power") is located in the city of Baicheng in Jilin Province. Phase I of the Zhenlai Wind Power commenced operation in June 2009, with an installed capacity of 49.5 MW, consisting of 33 wind power turbines of 1.5 MW each. Phase II of the Zhenlai Wind Power commenced operation in December 2011, with an installed capacity of 49.5 MW, consisting of 33 wind power turbines of 1.5 MW each. We hold 100% of the equity interest in Zhenlai Wind Power.

Zhenlai Wind Power sells its electricity to Jilin Electric Power Company.

Siping Wind Power

Huaneng Siping Wind Power Plant ("Siping Wind Power") is located in the city of Siping in Jilin Province. Phase I of the Siping Wind Power commenced operation in October 2010, with an installed capacity of 75 MW, consisting of 50 wind power turbines of 1.5 MW each. Phase II of the Siping Wind Power commenced operation in November 2010, with an installed capacity of 50 MW, consisting of 25 wind power turbines of 2 MW each. Phase III of the Siping Wind Power commenced operation in December 2010, with an installed capacity of 75 MW, consisting of 50 wind power turbines of 1.5 MW each. We hold 100% of the equity interest in Siping Wind Power.

Siping Wind Power sells its electricity to Jilin Electric Power Company.

Tongyu Tuanjie Wind Power

Huaneng Jilin Tongyu Tuanjie Wind Power Plant ("Tongyu Tuanjie Wind Power") is located in the city of Baicheng in Jilin Province. Tongyu Tuanjie Wind Power commenced operation in December 2015, with an installed capacity of 148 MW, consisting of 74 wind power turbines of 2 MW each. We hold 100% of the equity interest in Tongyu Tuanjie Wind Power.

Tongyu Tuanjie Wind Power sells its electricity to Jilin Electric Power Company.

Power Plants in Liaoning Province

Dalian Power Plant

Huaneng Dalian Power Plant ("Dalian Power Plant") is located on the outskirts of Dalian, on the coast of Bohai Bay. Dalian Power Plant, including Phase I and Phase II, has an installed capacity of 1,400 MW and consists of four 350 MW coal-fired generating units which commenced operations in 1988 and 1999 respectively. We hold 100% equity interest in Dalian Power Plant.

The coal supply for Dalian Power Plant is obtained from several coal producers located mostly in Northern Shanxi Province. The coal is transported by rail from the mines to Qinhuangdao port and shipped by special 27,000 ton automatic unloading ships to the wharf at the Dalian Power Plant. The wharf is owned and maintained by the Dalian Port Authority and is capable of handling 30,000 ton vessels. Dalian Power Plant typically stores 200,000 tons of coal on site.

In 2016, Dalian Power Plant obtained 98% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Dalian Power Plant in 2016 was RMB461.63 (2015: RMB417.54) per ton.

Dalian Power Plant sells its electricity to Liaoning Electric Power Company.

Dandong Power Plant

Huaneng Dandong Power Plant ("Dandong Power Plant") is located on the outskirts of the city of Dandong in Liaoning. Dandong Power Plant had originally been developed by HIPDC which, pursuant to the Reorganization Agreement, transferred all its rights and interests therein to us effective December 31, 1994. In March 1997, we began the construction of Dandong Power Plant, which comprises two 350 MW coal-fired generating units. We hold 100% equity interest in Dandong Power Plant.

The coal supply for Dandong Power Plant is obtained from several coal producers in Northern Shanxi Province. The coal is transported by rail from the mines to Qinhuangdao port and shipped by barge to the Dandong port in Dandong, where it is unloaded and transported to Dandong Power Plant using special coal handling facilities. The wharf is owned and maintained by Dandong Power Plant and is capable of handling 28,000 ton vessels. Dandong Power Plant typically stores 220,000 tons of coal on site.

In 2016, Dandong Power Plant obtained 25% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Dandong Power Plant in 2016 was RMB417.25 (2015: RMB396.52) per ton.

Dandong Power Plant sells its electricity to Liaoning Electric Power Company.

Yingkou Power Plant

Huaneng Yingkou Power Plant ("Yingkou Power Plant") is located in Yingkou City in Liaoning Province. Yingkou Power Plant Phase I has an installed capacity of 640 MW and consists of two 320 MW supercritical coal-fired generating units which commenced operations in January and December 1996, respectively. Yingkou Power Plant Phase II has an installed capacity of 1,200MW and consists of two 600 MW coal-fired generating units which commenced operations in August and October 2007, respectively. We hold 100% equity interest in Yingkou Power Plant.

The coal supply for Yingkou Power Plant is mainly obtained from Shanxi Province. Yingkou Power Plant typically stores 400,000 tons of coal on site. In 2016, Yingkou Power Plant obtained 35% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Yingkou Power Plant in 2016 was RMB453.18 (2015: RMB427.85) per ton.

Yingkou Power Plant sells its electricity to Liaoning Electric Power Company.

Yingkou Co-generation

Huaneng Yingkou Co-generation Power Plant ("Yingkou Co-generation") is located in Yingkou City in Liaoning Province. Yingkou Co¬-generation Power Plant has an installed capacity of 660 MW and consists of two 330 MW generating units which commenced operation in December 2009. We hold 100% equity interest in Yingkou Co-generation Power Plant.

The coal supply for Yingkou Co-generation Power Plant is mainly obtained from Inner Mongolia Autonomous Region. Yingkou Co-generation Power Plant typically stores 140,000 tons of coal on site. In 2016, Yingkou Co-generation Power Plant obtained 100% of its total consumption of coal from annual contracts. The average coal purchase price for Yingkou Co-generation Power Plant in 2016 was RMB327.68 (2015: RMB384.98) per ton.

Yingkou Co-generation Power Plant sells its electricity to Liaoning Electric Power Company.

Wafangdian Wind Power

Dalian Wafangdian Wind Power Plant ("Wafangdian Wind Power") is located in Dalian City in Liaoning Province. The installed capacity of phase I of Wafangdian Wind Power Plant is 48 MW and consists of 24 turbines. It commenced operation in June 2011. We hold 100% equity interest in Wafangdian Wind Power Plant.

Wafangdian Wind Power sells its electricity to Liaoning Electric Power Company.

Suzihe Hydropower

Liaoning Suzihe Hydropower Plant ("Suzihe Hydropower") is located in Liaoning Province. The installed capacity of Suzihe Hydropower Plant is 37.5 MW and consists of three 12.5 MW generating units. Unit I (12.5 MW) of Suzihe Hydropower commenced operation in August 2012. We hold 100% equity interest in Suzihe Hydropower.

Changtu Wind Power

Huaneng Liaoning Changtu Wind Power Plant ("Changtu Wind Power") is located in Liaoning Province. Phase I of the Changtu Wind Power commenced operation in November 2012, with an installed capacity of 49.5 MW, consisting of 33 wind power turbines of 1.5 MW each. Phase II of the Changtu Wind Power commenced operation in October 2014 , with an installed capacity of 48 MW, consisting of 24 wind power turbines of 2 MW each. We hold 100% of the equity interest in Changtu Wind Power.

Dandong Photovoltaic

Dandong 10 MW Photovoltaic Power Plant ("Dandong Photovoltaic") is located in Liaoning Province. Dandong Photovoltaic commenced operation in May 2016, with an installed capacity of 10 MW. We hold 100% of the equity interest in Dandong Photovoltaic.

Dandong Photovoltaic sells its electricity to Liaoning Electric Power Company.

Yingkou Co-generation Photovoltaic

Yingkou Co-generation 10 MW Photovoltaic Power Plant ("Yingkou Co-generation Photovoltaic") is located in Liaoning Province. Yingkou Co-generation Photovoltaic commenced operation in June 2016, with an installed capacity of 10 MW. We hold 100% of the equity interest in Yingkou Co-generation Photovoltaic.

Yingkou Co-generation Photovoltaic sells its electricity to Liaoning Electric Power Company.

Construction Project in Liaoning Province

Yingkou Xianrendao Co-generation Power Project. In December 2013, the project of Yingkou Xianrendao Co-generation Power Plant was approved by the Development and Reform Commission of Liaoning Province. We

hold 100% equity interest in this project. The project is planned to have two sets of high temperature back-pressure turbo-generating units of 50 MW each. The first set commenced operation in March 2017.

Dalian Second Cogeneration Power Plant project. In October 2014, the project of Dalian Number 2 Power Plant was approved by the Development and Reform Commission of Liaoning Province. We hold 100% equity interest in this project. The project is planned to have two sets of high temperature back-pressure turbo-generating units of 50 MW each.

Power Plant in Inner Mongolia Autonomous Region

Huade Wind Power

Huaneng Huade Wind Power Plant ("Huade Wind Power") is located in Huade, Inner Mongolia Autonomous Region. Phase I of Huade Wind Power has an installed capacity of 49.5 MW and consists of 33 wind power turbines which commenced operation in 2009. Phase II of Huade Wind Power has an installed capacity of 49.5 MW and consists of 33 wind power turbines which commenced operation in June 2011. We hold 100% equity interest in Huade Wind Power Plant.

Huade Wind Power sells its electricity to Inner Mongolia Power (Group) Co., Ltd.

Power Plants in Hebei Province

Shang'an Power Plant

Huaneng Shang'an Power Plant ("Shang'an Power Plant") is located on the outskirts of Shijiazhuang. Shang'an Power Plant has been developed in three separate expansion phases. The Shang'an Power Plant Phase I has an installed capacity of 700 MW and consists of two 350 MW coal-fired generating units which commenced operations in 1990. Shang'an Power Plant Phase II shares with the Shang'an Power Plant Phase I certain facilities, such as coal storage facilities and effluence pipes, which have been built to accommodate the requirements of plant expansions. The Shang'an Power Plant Phase II utilizes two 330 MW coal-fired generating units, which commenced operation in 1997. The Shang'an Power Plant Phase III has an installed capacity of 1,200 MW and consists of two 600 MW supercritical coal-fired generating units which commenced operations in July and August 2008, respectively. Unit 5 of Shang'an Power Plant is the first 600MW supercritical air-cooling unit which commenced operation in the PRC. We hold 100% equity interest in Shang'an Power Plant.

The coal supply for Shang'an Power Plant is obtained from numerous coal producers in Central Shanxi Province, which is approximately 64 kilometers from Shang'an Power Plant. The coal is transported by rail from the mines to the Shang'an Power Plant. We own and maintain the coal unloading facilities which are capable of unloading 10,000 tons of coal per day. Shang'an Power Plant typically stores 300,000 tons of coal on site.

In 2016, Shang'an Power Plant obtained 86% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Shang'an Power Plant in 2016 was RMB337.33 (2015: RMB319.33) per ton.

Shang'an Power Plant sells its electricity to Hebei Electric Power Company.

Kangbao Wind Power

Huaneng Kangbao Wind Power Plant ("Kangbao Wind Power") consists of 33 wind power turbines with a total installed capacity of 49.5 MW. In January 2011, the Phase I of Kangbao Wind Power with a total generation capacity of 49.5MW completed the trial run. We hold 100% equity interest in Kangbao Wind Power.

Kangbao Wind Power sells its electricity to Hebei Electric Power Company.

Kangbao Xitan Photovoltaic

Kangbao Xitan Photovoltaic ("Kangbao Xitan Photovoltaic") is located in Kangbao, Zhangjiakou, Hebei. Kangbao Xitan Photovoltaic commenced operation in June 2016, with an installed capacity of 20 MW. We hold 100% equity interest in Kangbao Xitan Photovoltaic.

Kangbao Xitan Photovoltaic sells its electricity to Hebei Electric Power Company.

Construction Project in Hebei Province

Zhuolu Dabao Wind Power. In September 2014, the project of Zhuolu Dabao Wind Power was approved by the Development and Reform Commission of Hebei Province. We hold 100% equity interest in this project. The project is planned to have an installed capacity of 48 MW consisting of 24 wind power turbines of 2 MW each.

Power Plant in Gansu Province

Pingliang Power Plant

Huaneng Pingliang Power Plant ("Pingliang Power Plant") is located in Pingliang City of Gansu Province. Pingliang Power Plant consists of three 325 MW and one 330 MW coal-fired generating units which commenced operation in 2000, 2001 and June and November 2003 respectively. The installed capacity of Unit I, Unit II and Unit III of Pingliang Power Plant were expanded from 300 MW to 325 MW in January 2010, respectively. The installed capacity of Unit IV of Pingliang Power Plant was expanded from 300 MW to 330 MW in January 2011. Pingliang Power Plant Phase II consists of two 600 MW generating units with a total installed capacity of 1200 MW, which commenced operation in February 2010 and March 2010, respectively. We hold 65% equity interest in Pingliang Power Plant.

The coal supply for Pingliang Power Plant is obtained from local coal mines. Pingliang Power Plant typically stores 230,000 tons of coal on site. In 2016, Pingliang Power Plant obtained 82% of its coal supplies from annual contracts and the remainder from the open market. The average coal purchase price for Pingliang Power Plant in 2016 was RMB270.81 (2015: RMB256.44) per ton.

Pingliang Power Plant sells its electricity to Gansu Electric Power Company.

Jiuquan Wind Power

Jiuquan Wind Power Plant ("Jiuquan Wind Power") consists of 234 wind power turbines of 1.5 MW each and 25 wind power turbines of 2 MW each. In December 2011, all the wind power plants completed the trial run. We hold 100% equity interest in Jiuquan Wind Power.

Jiuquan Wind Power sells its electricity to Gansu Electric Power Company.

Jiuquan II Wind Power

Jiuquan II Wind Power Plant ("Jiuquan II Wind Power") is located in Gansu Province. Zone A of this plant commenced operation in December 2014, with an installed capacity of 200 MW in operating, consisting of 100 wind power turbines of 2 MW each. Zone B of this plant commenced operation in June 2015, with an installed capacity of 200 MW in operating, consisting of 100 wind power turbines of 2 MW each. We hold 100% equity interest in Jiuquan II Wind Power.

Jiuquan II Wind Power sells its electricity to Gansu Electric Power Company.

Yumen Wind Power

Yumen Wind Power Plant ("Yumen Wind Power") is located in Gansu Province. This plant commenced operation in June 2015, with an installed capacity of 148.5 MW, consisting of 67 wind power turbines of 1.5 MW each and 24 wind power turbines of 2 MW each. We hold 100% equity interest in Yumen Wind Power.

Yumen Wind Power sells its electricity to Gansu Electric Power Company.

Yigang Wind Power

Yigang Wind Power ("Yigang Wind Power") is located in Gansu Province. This plant commenced operation in December 2015, with an installed capacity of 192 MW, consisting of 96 wind power turbines of 2 MW each. We hold 100% equity interest in Yigang Wind Power.

Yigang Wind Power sells its electricity to Gansu Electric Power Company.

Power Plant in Beijing Municipality

Beijing Co-generation

Huaneng Beijing Co-generation Power Plant ("Beijing Co-generation") is located in Beijing Municipality. Beijing Co-generation has an installed capacity of 845 MW and consists of two 165 MW generating units, two 220 MW generating units and one 75 MW generating units which commenced operation in January 1998, December 1998, June 1999 and April 2004, respectively. We hold 41% equity interest in Beijing Co-generation and believe we exercise effective control over Beijing Co-generation.

The coal supply for Beijing Co-generation is mainly obtained from Inner Mongolia Autonomous Region. Beijing Co-generation typically stores 165,000 tons of coal on site. In 2016, Beijing Co-generation obtained 100% of its total consumption of coal from annual contracts. The average coal purchase price for Beijing Co-generation in 2016 was RMB434.53 (2015: RMB422.39) per ton.

Beijing Co-generation sells its electricity to Beijing Electric Power Company.

Beijing Co-generation CCGT

Beijing Co-generation CCGT consists of one set of "two on one" F-grade gas and steam combined cycle generating units with a power generation capacity of 923.4 MW, heat supply capacity of 650 MW and heat supply area of approximately 13,000,000 square meters. High-standard denitrification, noise reduction, water treatment and other environmental protection facilities were constructed concurrently. In December 2011, Beijing Co-generation CCGT completed its trial run. Beijing Co-generation CCGT sells its electricity to North China Electric Company.

Being the first project commencing construction among the four major co-generation centers in Beijing, Beijing Co-generation CCGT firstly introduced the most efficient world-class F-grade gas turbine in the PRC, thus setting a new record of the maximum heat supply capacity, minimum power consumption for power generation and highest annual thermal efficiency for the same type of generating units in the PRC and attaining a leading and international class design standard in the PRC.

Construction Project in Beijing Municipality

Beijing Co-generation Phase III Project. In March 2015, the project of Beijing Co-generation Phase III was approved by the Development and Reform Commission of Beijing Municipality. We hold 41% equity interest in this project. The project is planned to have two sets of F-grade gas-steam combined-cycle generators with total capacity of 998 MW.

Power Plant in Tianjin Municipality

Yangliuqing Co-generation

Tianjin Huaneng Yangliuqing Co-generation Power Plant ("Yangliuqing Co-generation") is located in Tianjin Municipality. Yangliuqing Co-generation has an installed capacity of 1,200 MW and consists of four 300 MW coal-fired co-generation units which commenced operation in December 1998, September 1999, December 2006 and May 2007, respectively. We hold 55% equity interest in Yangliuqing Co-generation.

The coal supply for Yangliuqing Co-generationis mainly obtained from Shanxi Province and Inner Mongolia Autonomous Region. Yangliuqing Co-generation typically stores 300,000 tons of coal on site. In 2016, Yangliuqing Co-generation obtained 62% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Yangliuqing Co-generation in 2016 was RMB404.07 (2015: RMB369.26) per ton.

Yangliuqing Co-generation sells its electricity to Tianjin Electric Company.

Lingang Co-generation CCGT

Lingang Co-generation CCGT is located in Tianjin Municipality. The first set of generating units of Lingang Co-generation CCGT commenced operation in December 2014, with an installed capacity of 463 KW. We hold 100% equity interest in the Lingang Co-generation CCGT. The gas supply for Lingang Co-generation CCGT is transported through the pipeline of "Shaanxi-Gansu-Ningxia Transport Project."

Lingang Co-generation CCGT sells its electricity to Tianjin Electric Company.

Power Plant in Shanxi Province

Yushe Power Plant

Huaneng Yushe Power Plant ("Yushe Power Plant") is located in Yushe County of Shanxi Province. Yushe Power Plant Phase I has an installed capacity of 200 MW and consists of two 100 MW coal-fired generating units which commenced operations in August and December 1994, respectively. Two 300 MW coal-fired generating units of Yushe Power Plant Phase II commenced operations in October and November 2004, respectively. Yushe Power Plant Phase I was shut down in 2011. We hold 60% equity interest in Yushe Power Plant.

The coal supply for Yushe Power Plant is obtained from several coal producers located mostly in Shanxi Province. Yushe Power Plant typically stores 500,000 tons of coal on site. In 2016, Yushe Power Plant obtained approximately 17% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Yushe Power Plant in 2016 was RMB252.95 (2015: RMB194.96) per ton.

Yushe Power Plant sells its electricity to Shanxi Electric Power Company.

Zuoquan Power Plant

Shanxi Huaneng Zuoquan Power Plant ("Zuoquan Power Plant") is located in Zuoquan County of Shanxi Province. Zuoquan Power Plant has an installed capacity of 1,346 MW and consists of two 673 MW coal-fired generating units which commenced operations in December 2011 and January 2012, respectively. We hold 80% equity interest in Zuoquan Power Plant.

Zuoquan Power Plant typically stores 200,000 tons of coal on site. In 2016, Zuoquan Power Plant obtained approximately 3% of its total consumption of coal from annual contracts and the remainders from the open market. The average coal purchase price for Zuoquan Power Plant in 2016 was RMB266.31 (2015: RMB256.99) per ton.

Zuoquan Power Plant sells its electricity to Shanxi Electric Power Company.

Dongshan Combined Cycle Gas Turbine Power Plant

Dongshan Combined Cycle Gas Turbine Power Project ("Dongshan CCGT") is located at Taiyuan City of Shanxi Province. Dongshan CCGT commenced operation in October 2015 with an installed capacity of 859 KW, consisting of one 2×F Class gas-steam combined cycle co-generating unit. We hold 100% equity interest in the plant.

Dongshan CCGT sells its electricity to Shanxi Electric Power Company.

Power Plants in Shandong Province

Dezhou Power Plant

Huaneng Dezhou Power Plant ("Dezhou Power Plant") is located in Dezhou City, near the border between Shandong and Hebei Provinces, close to an industrial zone that is an important user of electric power for industrial and commercial purposes. Dezhou Power Plant is comprised of three phases, with Phase I consisting of one 320MW and one 330MW coal-fired generating units, Phase II consisting of one 330MW and one 320MW coal-fired generating units, and Phase III consisting of two 700 MW coal-fired generating units. The installed capacity of Unit IV was upgraded from 300 MW to 320 MW in January 2009. We hold 100% equity interest in Dezhou Power Plant.

Dezhou Power Plant is approximately 200 km from Taiyuan, Shanxi Province, the source of the plant's coal supply. The plant is located on the Taiyuan-Shijiazhuang-Dezhou rail line, giving it access to transportation facilities for coal. Dezhou Power Plant typically stores 400,000 tons of coal on site. In 2016, Dezhou Power Plant obtained approximately 61% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Dezhou Power Plant in 2016 was RMB387.99 (2015: RMB370.37) per ton. The plant is connected to the main trunk rail line at Dezhou by a dedicated 3.5 km spur line owned by us.

Dezhou Power Plant sells its electricity to State Grid Shandong Electric Power Company.

Jining Power Plant

Huaneng Jining Power Plant ("Jining Power Plant") is located in Jining City, near the Jining load center and near numerous coal mines. Yanzhou coal mine, which is adjacent to the plant, alone has annual production of approximately 20 million tons. Jining Power Plant typically stores 100,000 tons of coal on site.

Jining Power Plant currently consists of two coal-fired generating units, with an aggregate installed capacity of 270 MW. In addition, Jining Power Plant (Co-generation) has an installed capacity of 700 MW and consists of two 350 MW generating units which commenced operation in November and December 2009, respectively. We hold 100% equity interest in Jining Power Plant.

In 2016, Jining Power Plant obtained approximately 44% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Jining Power Plant in 2016 was RMB428.63 (2015: RMB370.51) per ton.

Jining Power Plant sells its electricity to State Grid Shandong Electric Power Company.

Xindian Power Plant

Huaneng Xindian Power Plant ("Xindian Power Plant") is located in Zibo City of Shandong Province. Xindian Power Plant has an installed capacity of 450 MW and consists of two 225 MW coal-fired generating units which commenced operations in December 2001 and January 2002, respectively, and were shut down in September 2009. Xindian Power Plant Phase III consists of two 300 MW generating units with a total installed capacity of 600 MW, which were put into operation in September and November 2006, respectively. We hold 95% equity interest in Xindian Power Plant Phase III.

The coal supply for Xindian Power Plant is obtained from several coal producers located mostly in Shanxi Province. Xindian Power Plant typically stores 250,000 tons of coal on site. In 2016, Xindian Power Plant obtained

7% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Xindian Power Plant in 2016 was RMB437.49 (2015: RMB372.93) per ton.

Xindian Power Plant sells its electricity to State Grid Shandong Electric Power Company.

Weihai Power Plant

Huaneng Weihai Power Plant ("Weihai Power Plant") is located approximately 16 km southeast of Weihai City, on the shore of the Bohai Gulf. Its location provides access to cooling water for operations and transportation of coal as well as ash and slag disposal facilities. We hold 60% equity interest in Weihai Power Plant, the remaining 40% interest of which is owned by Weihai Power Development Bureau ("WPDB").

Weihai Power Plant Phase I consists of two 125 MW generating units (Units I and II), and Phase II consists of two 320 MW generating units (Units III and IV). Unit I began commercial operation in May 1994 and was shut down in December 2008, and Unit II began commercial operation in January 1995 and was shut down in November 2008. Unit III and Unit IV commenced operation in March and November 1998, respectively. Each of the Units III and IV was upgraded from 300 MW to 320 MW in January 2009. Weihai Power Plant Phase III consists of two 680 MW generating units which commenced operations in December 2012. The coal supply for Weihai Power Plant is obtained from Shanxi Province and Inner Mongolia. Weihai Power Plant typically stores 160,000 tons of coal on site. In 2016, Weihai Power Plant obtained approximately 8% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Weihai Power Plant in 2016 was RMB478.06 (2015: RMB419.15) per ton.

Weihai Power Plant sells its electricity to State Grid Shandong Electric Power Company.

Rizhao Power Plant

Huaneng Rizhao Power Plant ("Rizhao Power Plant") is located in Rizhao City of Shandong Province. Rizhao Power Plant currently has an aggregate installed capacity of 2,060 MW. Rizhao Power Plant Phase I has an installed capacity of 700 MW and consists of two 350 MW coal-fired generating units which both commenced operations in April 2000. We hold 88.8% equity interests in Phase I of Rizhao Power Plant.

We hold 100% equity interest in Phase II of Rizhao Power Plant, which commenced operation in December 2008 and consists of two 680 MW supercritical coal-fired generating units. The coal supply for Phase II of Rizhao Power Plant is obtained from Shanxi Province. Phase II of Rizhao Power Plant typically stores 217,800 tons of coal on site. In 2016, Phase II of Rizhao Power Plant obtained 0% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Phase II of Rizhao Power Plant in 2016 was RMB467.33 (2015: RMB456.98) per ton.

Rizhao Power Plant sells its electricity to State Grid Shandong Electric Power Company.

Zhanhua Co-generation

Shandong Zhanhua Co-generation Limited Company ("Zhanhua Co-generation") is located in Zhanhua City of Shandong Province. Zhanhua Co-generation currently has an aggregate installed capacity of 330 MW, consisting of two generating units which commenced operations in July 2005. We hold 100% equity interest in Zhanhua Co-generation.

The coal supply for Zhanhua Co-generation is mainly obtained from Inner Mongolia Autonomous Region. Zhanhua Co-generation typically stores 90,000 tons of coal on site. In 2016, Zhanhua Co-generation obtained 6% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Zhanhua Co-generation in 2016 was RMB405.46 (2015: RMB334.29) per ton.

Zhanhua Co-generation sells its electricity to State Grid Shandong Electric Power Company.

Baiyanghe Power Plant

Huaneng Shandong Zibo Baiyanghe Power Plant ("Baiyanghe Power Plant") is located in the city of Zibo in Shandong Province. Baiyanghe Power Plant currently has an aggregate installed capacity of 890 MW. Baiyanghe Power Plant Phase I has an installed capacity of 290 MW and consists of two 145 MW coal-fired generating units which commenced operations in October 2003. Baiyanghe Power Plant Phase II has an installed capacity of 600 MW and consists of two 300 MW coal-fired generating units which commenced operations in December 2009. We hold 80% equity interests in Baiyanghe Power Plant.

The coal supply for Baiyanghe Power Plant is obtained from several coal producers located in the provinces of Shandong, Shanxi, Shaanxi and Inner Mongolia Autonomous Region. Baiyanghe Power Plant typically stores 125,300 tons of coal on site. In 2016, Baiyanghe Power Plant obtained 21.98% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Baiyanghe Power Plant in 2016 was RMB425.78 (2015: RMB362.90) per ton.

Baiyanghe Power Plant sells its electricity to State Grid Shandong Electric Power Company.

Jiaxiang Power Plant

Huaneng Jiaxiang Power Plant ("Jiaxiang Power Plant") is located in the city of Jining in Shandong Province. Jiaxiang Power Plant currently has an aggregate installed capacity of 660 MW which consists of two 330 MW coal-fired generating units which commenced operations in September 1999 and January 2003, respectively. We hold 40% equity interests in Jiaxiang Power Plant.

The coal supply for Jiaxiang Power Plant is obtained from several coal producers located in the Shandong Province. Jiaxiang Power Plant typically stores 115,300 tons of coal on site. In 2016, Jiaxiang Power Plant obtained 97.65% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Jiaxiang Power Plant in 2016 was RMB378.87 (2015: RMB348.56) per ton.

Jiaxiang Power Plant sells its electricity to State Grid Shandong Electric Power Company.

Jining Co-generation

Huaneng Jining Co-generation Power Plant ("Jining Co-generation") is located in the city of Jining in Shandong Province. Jining Co-generation currently has an aggregate installed capacity of 60 MW which consists of two 30 MW coal-fired generating units which commenced operations in April and July 2004, respectively. We hold 40% equity interests in Jining Co-generation.

The coal supply for Jining Co-generation is obtained from several coal producers located in the Shandong Province. Jining Co-generation typically stores 10,600 tons of coal on site. In 2016, Jining Co-generation obtained 67.81% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Jining Co-generation in 2016 was RMB353.48 (2015: RMB282.30) per ton.

Jining Co-generation sells its electricity to State Grid Shandong Electric Power Company.

Qufu Co-generation

Huaneng Qufu Shengcheng Co-generation Power Plant ("Qufu Co-generation") is located in the city of Jining in Shandong Province. Qufu Co-generation currently has an aggregate installed capacity of 450 MW which consists of one 225 MW coal-fired generating unit which commenced operations in February 2009 and one 225 MW coal-fired generating unit which commenced operations in September 2009. We hold 40% equity interests in Qufu Co-generation.

The coal supply for Qufu Co-generation is obtained from several coal producers located in the Shandong Province. Qufu Co-generation typically stores 34,100 tons of coal on site. In 2016, Qufu Co-generation obtained

95.98% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Qufu Co-generation in 2016 was RMB396.87 (2015: RMB344.91) per ton.

Qufu Co-generation sells its electricity to State Grid Shandong Electric Power Company.

Huangtai Power Plant

Huaneng Jinan Huangtai Power Plant ("Huangtai Power Plant") is located in the city of Jinan in Shandong Province. Huangtai Power Plant currently has an aggregate installed capacity of 680 MW which consists of one 330 MW coal-fired generating unit which commenced operations in November 1987 and one 350 MW coal-fired generating unit which commenced operations in January 2011. We hold 72% equity interests in Huangtai Power Plant.

The coal supply for Huangtai Power Plant is obtained from several coal producers located in the provinces of Shandong, Shanxi, Shaanxi and Inner Mongolia Autonomous Region. Huangtai Power Plant typically stores 155,700 tons of coal on site. In 2016, Huangtai Power Plant obtained 33.11% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Huangtai Power Plant in 2016 was RMB416.26 (2015: RMB366.43) per ton.

Huangtai Power Plant sells its electricity to State Grid Shandong Electric Power Company.

Yantai Power Plant

Huaneng Yantai Power Plant ("Yantai Power Plant") is located in the city of Yantai in Shandong Province. Yantai Power Plant currently has an aggregate installed capacity of 590 MW which consists of one 110 MW and three 160 MW coal-fired generating units. The 110 MW unit commenced operations in April 1996, and the three 160 MW units commenced operation in October 2005, December 2005 and October 2006 respectively. We hold 80% equity interest in Yantai Power Plant.

The coal supply for Yantai Power Plant is obtained from Shanxi Province, Inner Mongolia Autonomous Region and partially imported coal. Yantai Power Plant typically stores 176,100 tons of coal on site. In 2016, Yantai Power Plant obtained 63.20% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Yantai Power Plant in 2016 was RMB456.69 (2015: RMB395.46) per ton.

Yantai Power Plant sells its electricity to State Grid Shandong Electric Power Company.

Linyi Power Plant

Huaneng Linyi Power Plant ("Linyi Power Plant") is located in the city of Linyi in Shandong Province. Linyi Power Plant currently has an aggregate installed capacity of 1,260 MW which consists of four 140 MW and two 350 MW coal-fired generating units. The 350 MW units commenced operations in December 2012 and October 2013, respectively, and the four 140 MW units commenced operation in December 1997, April 2003, September 2003 and April 2005, respectively. We hold 60% equity interest in Linyi Power Plant.

The coal supply for Linyi Power Plant is obtained from from several coal producers located in the provinces of Shandong, Shanxi, Shaanxi and Inner Mongolia Autonomous Region. Linyi Power Plant typically stores 249,000 tons of coal on site. In 2016, Linyi Power Plant obtained all of its total consumption of coal from the open market. The average coal purchase price for Linyi Power Plant in 2016 was RMB490.55 (2015: RMB416.64) per ton.

Linyi Power Plant sells its electricity to State Grid Shandong Electric Power Company.

Jining Yunhe Power Plant

Huaneng Jining Yunhe Power Plant ("Jining Yunhe Power Plant") is located in the city of Jining in Shandong Province. Jining Yunhe Power Plant currently has an aggregate installed capacity of 1,240 MW which consists of four 145 MW and two 330 MW coal-fired generating units. The 330 MW units commenced operations in March and September 2006, respectively, and the four 145 MW units commenced operation in July 2000, November 2000, September 2003 and February 2004, respectively. We hold 78.68% equity interest in Jining Yunhe Power Plant.

The coal supply for Jining Yunhe Power Plant is obtained from from several coal producers located in the Shandong Province. Jining Yunhe Power Plant typically stores 50,900 tons of coal on site. In 2016, Jining Yunhe Power Plant obtained 86.32% of its total consumption of coal from annual contracts and the remainder from the open market from the open market. The average coal purchase price for Jining Yunhe Power Plant in 2016 was RMB413.60 (2015: RMB353.08) per ton.

Jining Yunhe Power Plant sells its electricity to State Grid Shandong Electric Power Company.

Liaocheng Co-generation

Huaneng Liaocheng Co-generation Power Plant ("Liaocheng Co-generation") is located in the city of Liaocheng in Shandong Province. Liaocheng Co-generation currently has an aggregate installed capacity of 660 MW which consists of two 330 MW coal-fired generating unit which commenced operations in January and September 2006, respectively. We hold 60% equity interests in Liaocheng Co-generation.

The coal supply for Liaocheng Co-generation is obtained from several coal producers located in the provinces of Shandong, Shanxi, Shaanxi and Inner Mongolia Autonomous Region. Liaogcheng Co-generation typically stores 141,300 tons of coal on site. In 2016, Liaogcheng Co-generation obtained 14.13% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Liaogcheng Co-generation in 2016 was RMB405.01 (2015: RMB355.97) per ton.

Liaogcheng Co-generation sells its electricity to State Grid Shandong Electric Power Company.

Taian Power Plant

Huaneng Taian Zhongtai Power Plant ("Taian Power Plant") is located in the city of Taian in Shandong Province. Taian Power Plant currently has an aggregate installed capacity of 300 MW which consists of two 150 MW coal-fired generating units, which commenced operations in May and December 2007, respectively. We hold 80% equity interest in Taian Power Plant.

The coal supply for Taian Power Plant is obtained from from several coal producers located in the Shandong and Shanxi. Taian Power Plant typically stores103,600 tons of coal on site. In 2016, Taian Power Plant obtained 27.66% of its total consumption of coal from annual contracts and the remainder from the open market from the open market. The average coal purchase price for Taian Power Plant in 2016 was RMB347.60 (2015: RMB283.63) per ton.

Taian Power Plant sells its electricity to State Grid Shandong Electric Power Company.

Laiwu Power Plant

Huaneng Laiwu Power Plant ("Laiwu Power Plant") is located in the city of Laiwu in Shandong Province. Laiwu Power Plant currently has an aggregate installed capacity of 2,000 MW which consists of two 1,000 MW coal-fired generating units, which commenced operations in December 2015 and November 2016, respectively. We hold 64% equity interest in Laiwu Power Plant.

The coal supply for Laiwu Power Plant is obtained from from several coal producers located in the provinces of Shandong, Shanxi, Shaanxi and Inner Mongolia Autonomous Region. Laiwu Power Plant typically stores 246,600 tons of coal on site. In 2016, Laiwu Power Plant obtained 14.24% of its total consumption of coal

from annual contracts and the remainder from the open market from the open market. The average coal purchase price for Laiwu Power Plant in 2016 was RMB460.61 (2015: RMB362.41) per ton.

Laiwu Power Plant sells its electricity to State Grid Shandong Electric Power Company.

Muping Wind Power

Muping Wind Power Plant ("Muping Wind Power") is located in the city of Yantai in Shandong Province. Muping Wind Power Plant consists of 28 wind power turbines of 1.5 MW each. We hold 80% equity interest in Muping Wind Power.

Muping Wind Power sells its electricity to State Grid Shandong Electric Power Company.

Penglai Wind Power

Huaneng Penglai Daliuhang Wind Power Plant ("Penglai Wind Power") is located in the city of Yantai in Shandong Province. Penglai Wind Power Plant consists of 48 wind power turbines of 2 MW each and 2 wind power turbines of 1.8 MW each. We hold 80% equity interest in Penglai Wind Power.

Penglai Wind Power sells its electricity to State Grid Shandong Electric Power Company.

Rushan Wind Power

Huaneng Rushan Wind Power Plant ("Rushan Wind Power") is located in the city of Weihai in Shandong Province. Rushan Wind Power Plant consists of 28 wind power turbines of 1.5 MW each. We hold 80% equity interest in Rushan Wind Power.

Rushan Wind Power sells its electricity to State Grid Shandong Electric Power Company.

Changdao Wind Power

Huaneng Changdao Wind Power Plant ("Changdao Wind Power") is located in the city of Yantai in Shandong Province. Changdao Wind Power Plant consists of 14 wind power turbines of 0.6 MW each, 11 wind power turbines of 0.75 MW each and 3 wind power turbines of 1.3 MW each. We hold 48% equity interest in Changdao Wind Power.

Changdao Wind Power sells its electricity to State Grid Shandong Electric Power Company.

Rongcheng Wind Power

Huaneng Rongcheng Wind Power Plant ("Rongcheng Wind Power") is located in the city of Weihai in Shandong Province. Rongcheng Wind Power Plant consists of 10 wind power turbines of 1.5 MW each. We hold 48% equity interest in Rongcheng Wind Power.

Rongcheng Wind Power sells its electricity to State Grid Shandong Electric Power Company.

Dongying Wind Power

Huaneng Dongying Wind Power Plant ("Dongying Wind Power") is located in the city of Dongying in Shandong Province. Dongying Wind Power Plant consists of 32 wind power turbines of 1.5 MW each. We hold 56% equity interest in Dongying Wind Power.

Dongying Wind Power sells its electricity to State Grid Shandong Electric Power Company.

Boshan Photovoltaic

Boshan Photovoltaic Power Plant ("Boshan Photovoltaic") is located in Zibo City. Boshan Photovoltaic commenced its operation in May 2016 and has an installed capacity of 12 MW. We hold 80% equity interest in Boshan Photovoltaic.

Boshan Photovoltaic sells its electricity to State Grid Shandong Electric Power Company.

Gaozhuang Photovoltaic

Gaozhuang Photovoltaic Power Plant ("Gaozhuang Photovoltaic") is located in Laiwu City. Gaozhuang Photovoltaic commenced its operation in May 2016 and has an installed capacity of 20 MW. We hold 80% equity interest in Gaozhuang Photovoltaic.

Gaozhuang Photovoltaic sells its electricity to State Grid Shandong Electric Power Company.

Jining Co-generation Photovoltaic.

Jining Co-generation Photovoltaic Project ("Jining Co-generation Photovoltaic") is located in Jining City. The project commenced its operation in February 2017 and has an installed capacity of 20 MW. We hold 80% equity interest in this project.

Jining Co-generation Photovlatic sells its electricity to State Grid Shandong Electric Power Company.

Construction Project in Shandong Province

Yantai Bajiao "Bigger units over Small Projects". In April 2014, Yantai Bajiao "Prioritizing Mega Projects over Small Projects" Power Plant project was approved by the NDRC. The project is planned to have an installed capacity of 1,340 MW, including two sets of ultra-supercritical coal-fired generating units of 670 MW each. We hold 80% equity interest in this project.

Laiwu Niuquan Photovoltaic Project. In June 2015, Laiwu Niuquan Photovoltaic Project was approved by the NDRC of Laiwu Municipality. The project is planned to have an installed capacity of 20 MW. We hold 80% equity interest in this project.

Power Plants and Projects in Henan Province

Qinbei Power Plant

Huaneng Qinbei Power Plant ("Qinbei Power Plant") is located in Jiyuan City of Henan Province. Its installed capacity is 2,400 MW which consists of four 600 MW supercritical coal-fired generating units. Two units commenced operations in November and December 2004, and the other two units commenced operation in November 2007. In March 2012 and February 2013, two 1,000 MW domestic ultra-supercritical coal-fired generating units of the Phase III of Qinbei Power Plant commenced operation, respectively. We hold 60% equity interest in Qinbei Power Plant. The coal supply for Qinbei Power Plant is obtained from Shanxi Province. Qinbei Power Plant typically stores 270,000 tons of coal on site. In 2016, Qinbei Power Plant obtained 64% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Qinbei Power Plant in 2016 was RMB401.89 (2015: RMB352.53) per ton.

Qinbei Power Plant sells its electricity to Henan Electric Power Company.

Luoyang Co-generation Power Plant

Luoyang Co-generation Power Plant ("Luoyang Co-generation") is located at Luoyang City of Henan Province. The project has an installed capacity of 700 MW, consisting of two sets of 350MW coal-fired

generation units, which commenced operation in May and June 2015, respectively. We hold 80% equity interest in this plant.

The coal supply for Luoyang Co-generation is obtained from Henan and Shaanxi. Luoyang Co-generation typically stores 120,000 tons of coal on site. In 2016, Luoyang Co-generation obtained 36% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Luoyang Co-generation in 2016 was RMB434.9 (2015: RMB 307.29) per ton.

Luoyang Co-generation sells its electricity to Henan Electric Power Company.

Luoyang Yangguang Power Plant

Luoyang Yangguang Power Plant ("Luoyang Yangguang") is located at Luoyang City of Henan Province. The project has an installed capacity of 270 MW, consisting of two sets of 135 MW coal-fired generation units, which commenced operation in June and October 2006, respectively. We hold 80% equity interest in this plant.

Luoyang Yangguang sells its electricity to Henan Electric Power Company.

Mianchi Co-generation

Mianchi Co-generation Power Plant ("Mianchi Co-generation") is located in Mianchi City of Henan Province. The project has an installed capacity of 700 MW, consisting of two sets of 350MW coal-fired generation units, which commenced operation in December 2016. We hold 60% equity interest in this plant.

The coal supply for Mianchi Co-generation is obtained from Yima Coal Group which has mining operations in Henan, Qinghai, Shanxi, Tibet and Inner Mongolia. Mianchi Co-generation typically stores 20,000 tons of coal on site. In 2016, Mianchi Co-generation obtained 100% of its total consumption of coal from annual contracts. The average coal purchase price for Luoyang Co-generation Power Plant in 2016 was RMB450. 00 per ton.

Mianchi Co-generation sells its electricity to Henan Electric Power Company.

Zhumadian Guoji Wind Power

Zhumadian Guoji Wind Power ("Guoji Wind Power") is located in Zhumadian City of Henan Province. The project has an installed capacity of 32 MW, consisting of sixteen 2MW wind turbines, which commenced operation in December 2016. We hold 90% equity interest in this plant.

Guoji Wind Power sells its electricity to Henan Electric Power Company.

Construction Project in Henan Province

Qinbei Photovoltaic Project. In October 2014, Qinbei Photovoltaic Project was approved by the NDRC of Jiyuan Municipality. The project is planned to have an installed capacity of 20MW. We hold 100% euiqty interest in this project.

Power Plants and Projects in Jiangsu Province

Nantong Power Plant

Huaneng Nantong Power Plant ("Nantong Power Plant") is located in Nantong City. Nantong Power Plant, including Phase I, Phase II and Phase III, has an installed capacity of 2,454 MW and consists of two 352 MW, two 350 MW and one 1,050 MW coal-fired generating units which commenced operations in 1989, 1990 1999 and 2014. We hold 100% equity interest in Phase I and Phase II of Nantong Power Plant and 35% equity interest in Phase III of Nantong Power Plant.

The coal supply for Nantong Power Plant is obtained from several coal producers located mostly in Northern Shanxi Province. The coal is transported by rail from the mines to Qinhuangdao port and then shipped to the Nantong Power Plant. Nantong Power Plant typically stores 300,000 tons of coal on site.

In 2016, Nantong Power Plant obtained 16% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Nantong Power Plant in 2016 was RMB418.91 (2015: RMB415.40) per ton.

Nantong Power Plant sells its electricity to Jiangsu Electric Power Company.

Nanjing Power Plant

Huaneng Nanjing Power Plant ("Nanjing Power Plant") has an installed capacity of 640 MW consisting of two 320 MW coal-fired generating units which commenced operations in March and October 1994, respectively. We hold 100% equity interest in Nanjing Power Plant.

The coal supply for the Nanjing Power Plant is obtained from several coal producers located in the Shanxi and Anhui Provinces. The coal is transported by rail from the mines to Yuxikou Port and Pukou Port and shipped to the plant's own wharf facilities. The wharf is capable of handling 6,000 ton vessels. Nanjing Power Plant typically stores 120,000 tons of coal on site and consumes 5,000 tons of coal per day when operating at maximum generating capacity.

In 2016, Nanjing Power Plant obtained approximately 17% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Nanjing Power Plant in 2016 was RMB469.51 (2015: RMB440.36) per ton.

Nanjing Power Plant sells its electricity to Jiangsu Electric Power Company.

Taicang Power Plant

Huaneng Taicang Power Plant ("Taicang Power Plant") is located in the vicinity of Suzhou, Wuxi and Changzhou, which is the most affluent area in Jiangsu Province. Taicang Power Plant is an ancillary facility of the China-Singapore Suzhou Industrial Park. Taicang Power Plant Phase I consists of two 300 MW coal-fired generating units, which commenced operations in December 1999 and April 2000 respectively. Taicang Phase II Expansion consists of two 600 MW coal-fired generating units, which commenced operations in January and February 2006, respectively. In April 2008, the installed capacities of the four units of Taicang Power Plant were upgraded to 320 MW, 320 MW, 630 MW and 630 MW, respectively, which increased the total installed capacity of Taicang Power Plant to 1,900 MW. We hold 75% equity interest in Taicang Power Plant.

The coal supply for Taicang Power Plant is primarily from Shenhua in Inner Mongolia and Datong in Shanxi Province. Taicang Power Plant typically stores 350,000 tons of coal on site. In 2016, Taicang Power Plant obtained approximately 24% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Taicang Power Plant in 2016 was RMB455.26 (2015: RMB395.68) per ton.

Taicang Power Plant sells its electricity to Jiangsu Electric Power Company.

Huaiyin Power Plant

Huaneng Huaiyin Power Plant ("Huaiyin Power Plant") is located in the Center of the Northern Jiangsu Power Grid. The plant's two 220 MW coal-fired generating units commenced operation in November 1993 and August 1994, respectively. In order to reduce energy consumption and increase capacity, one generating unit of Huaiyin Power Plant was upgraded in October 2001, which increased the maximum generating capacity of that unit to 220 MW. In 2002, upgrading of the second generating unit was completed, and the actual generating capacity of Huaiyin Power Plant is 440 MW. The other two 330 MW coal-fired generating units of Huaiyin Power Plant Phase II Expansion commenced operations in January and March 2005, respectively. Huaiyin Power Plant Phase III consists of two 330 MW coal-fired generating units, and which were put into operation in May and September 2006, respectively. We hold 100% equity interest in Phase I and 63.64% equity interest in Phase II and Phase III of

Huaiyin Power Plant. Unit I and Unit II of Huaiyin Power Plant were shut down in December 2007 and January 2009, respectively.

The coal supply for the Huaiyin Power Plant is primarily from Anhui Province, Henan Province and Shanxi Province. Huaiyin Power Plant typically stores 180,000 tons of coal on site. In 2016, Huaiyin Power Plant obtained approximately 29% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Huaiyin Power Plant in 2016 was RMB460.77 (2015: RM440.49) per ton.

Huaiyin Power Plant sells its electricity to Jiangsu Electric Power Company.

Jinling Power Plant

Huaneng Nanjing Jinling Power Plant ("Jinling Power Plant") is located in Nanjing, Jiangsu. Jinling Power Plant (CCGT) consists of two 390 MW gas-fired generating units, which commenced operation in December 2006 and March 2007, respectively. We hold 60% equity interest in Jinling Power Plant (CCGT). The gas supply for Jinling Power Plant (CCGT) is transported through the pipeline of "West-East Gas Transport Project".

Jinling Power Plant (Coal-fired) consists of two 1,030 MW domestic ultra-supercritical coal-fired generating units, which commenced operation in December 2009 and August 2012, respectively. We hold 60% equity interest in Phase I and Phase II of Jinling Power Plant (Coal-fired). The coal supply for Jinling Power Plant (Coal-fired) is primarily from Shanxi Province and Inner Mongolia Autonomous Region. Jinling Power Plant (Coal-fired) typically stores 300,000 tons of coal on site. In 2016, Jinling Power Plant (Coal-fired) obtained approximately 37% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Jinling Power Plant (Coal-fired) in 2016 was RMB447.20 (2015: RMB421.31) per ton.

Jinling Power Plant sells its electricity to Jiangsu Electric Power Company.

Qidong Wind Power

Huaneng Qidong Wind Power Plant ("Qidong Wind Power") is located in Nantong City, Jiangsu. Qidong Wind Power Phase I has an installed capacity of 91.5 MW and commenced operation in March 2009. The first stage and second stage of the Phase II Project of Qidong Wind Power with a total generation capacity of 50 MW and 44 MW respectively commenced operation in January 2011 and June 2012, respectively. We hold 65% equity interest in Qidong Wind Power.

Qidong Wind Power Plant sells its electricity to Jiangsu Electric Power Company.

Jinling CCGT Co-generation

Jinling CCGT Co-generation is located in Nanjing, Jiangsu. The plant comprises of two 191 MW class (E grade) combined cycle gas turbine cogeneration units and the corresponding support facilities. The two units commenced operation in April 2013 and May 2013, respectively. We hold 51% equity interest in Jinling CCGT Co-generation. The gas supply for this plant is transported through the pipeline of "West-East Gas Transport Project".

Jinling CCGT Co-generation sells its electricity to Jiangsu Electric Power Company.

Rudong Wind Power

Rudong Wind Power Plant ("Rudong Wind Power") is located in Rudong, Jiangsu. Phase I of the plant has a total installed generation capacity of 48MW. It commenced operations in November 2013. We hold 90% equity interest in Rudong Wind Power.

Rudong Wind Power sells its electricity to Jiangsu Electric Power Company.

Tongshan Wind Power

Tongshan Wind Power Plant ("Tongshan Wind Power") is located in Tongshan, Jiangsu Province. Phase I of the plant has an installed capacity of 50 MW. It commenced operation in March 2016. We hold 70% equity interest in Tongshan Wind Power.

Tongshan Wind Power sells its electricity to Jiangsu Electric Power Company.

Suzhou Co-generation

Huaneng Suzhou Co-generation Power Plant ("Suzhou Co-generation") is located in Suzhou City in Jiangsu Province. Suzhou Co-generation has an installed capacity of 120 MW and consists of two 60 MW coal-fired generating units which commenced operation in 2006. We hold 53.45% equity interest in Suzhou Co-generation. We acquired the power plant in January, 2015 from Huaneng Group.

The coal supply for Suzhou Co-generation is obtained from Shanxi, Inner Mongolia and partially imported coal.Suzhou Co-generation typically stores 30,000 tons of coal on site. In 2016, Suzhou Co-generation obtained 24% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Suzhou Co-generation in 2016 was RMB455.26 (2015: RMB426.30) per ton.

Suzhou Co-generation sells its electricity to Jiangsu Electric Power Company.

Taicang Coal Pier Project

Suzhou Port Taicang Terminal Zone Huaneng Coal Pier ("Taicang Coal Pier Project") is located in Taicang, Suzhou. The Taicang Coal Pier Project has one berth of 100,000 dead weight tonnage ("DWT") and one berth of 50,000 DWT for coal discharging, four berths of 5,000 DWT each and six berths of 1,000 DWT each for coal loading. The above facilities have commenced trial operation in 2013. We hold 100% equity interest in this project.

Nanjing Chemical Industry Park Co-generation Power Plant

Nanjing Chemical Industry Park Co-generation Power Plant ("Nanjing Chemical Industry Park Co-Generation") is located in the city of Nanjing in Jiangsu Province. It has an installed capacity of 100MW consisting of two sets of extraction back-pressure turbines of 50 MW each, which commenced operation in April and December 2016, respectively. We hold 70% equity interest in Nanjing Chemical Industry Park Co-Generation Power Plant.

Nanjing Chemical Industry Park Co-generation typically stores 60,000 tons of coal on site. In 2016, Nanjing Co-generation obtained 85% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Nanjing Chemical Industry Park Co-generation in 2016 was RMB490.8 per ton.

Nanjing Chemical Industry Park Co-generation Power Plant sells its electricity to Jiangsu Electric Power Company.

Luhe Wind Power

Luhe Wind Power ("Luhe Wind Power") is located in Nanjing, Jiangsu. It has an installed capacity of 50 MW, consisting of 25 wind power turbines of 2 MW each, which commenced operation in December 2016. We hold 100% equity interest in Luhe Wind Power.

Luhe Wind Power sells its electricity to Jiangsu Electric Power Company.

Construction Project in Jiangsu Province

Suzhou Gas fired Co-generation Project. In October 2012, Huaneng Suzhou gas-fired Co-generation Project was approved by the Jiangsu Province Development and Reform Commission. We hold 100% equity interest in this

project. The Project is planned to consist of two sets of 255MW class (E-class) combined cycle gas turbine cogeneration units.

Guanyun Co-Generation Power Project. Guanyun Co-Generation Power Project was approved by the Development and Reform Commission of Jiangsu Province in April 2015. We hold 100% equity interest in the project. Guanyun Co-Generation Power Project is planned to have an installed capacity of 50 MW, consisting of two sets of extraction back-pressure turbines of 25 MW each.

Power Plants in Shanghai Municipality

Shidongkou I

Huaneng Shanghai Shidongkou First Power Plant ("Shidongkou I") is located in the northern region of the Shanghai Power Grid. The plant comprises four 325 MW coal-fired generating units, which commenced operation in February and December 1988, September 1989 and May 1990 respectively, and has a total installed capacity of 1,300 MW. The installed capacities of Unit II and Unit III were expanded from 300 MW to 325 MW in September 2007 and January 2008, respectively. The installed capacities of Unit I and Unit V were expanded from 300 MW and 320 MW to 325 MW and 325 MW in January 2010, respectively. We hold 100% equity interest in Shidongkou I.

The coal supply for Shidongkou I is primarily from Shanxi Province, Anhui Province and Henan Province. Shidongkou I Power Plant typically stores 150,000 tons of coal on site. In 2016, Shidongkou I obtained 20% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Shidongkou I in 2016 was RMB318.58 (2015: RMB337.15) per ton.

Shidongkou I sells its electricity to State Grid Shanghai Municipal Electric Power Company.

Shidongkou II

Huaneng Shanghai Shidongkou Second Power Plant ("Shidongkou II") is located in the northern suburbs of Shanghai. Shidongkou II has an installed capacity of 1,200 MW and consists of two 600 MW coal-fired super-critical units which commenced operations in June and December 1992, respectively. We hold 100% equity interest in Phase I of Shidongkou II. Phase II of Shidongkou II has an installed capacity of 1,320 MW and consists of two 660 MW coal-fired super-critical units which commenced operations in October 2011. We hold 50% equity interest in Phase II of Shidongkou II.

The coal supply for Shidongkou II is obtained from several coal producers located mostly in Northern Shanxi Province. The coal is transported by rail from the mines to Qinhuangdao port or Tianjin port and shipped to the plant's own wharf facilities. The wharf is capable of handling 35,000 ton vessels. Shidongkou II typically stores 180,000 tons of coal on site.

In 2016, Shidongkou II obtained 9% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Shidongkou II in 2016 was RMB358.21 (2015: RMB386.06) per ton.

Shidongkou II sells its electricity to State Grid Shanghai Municipal Electric Power Company.

Shanghai CCGT

Shanghai CCGT is located in Baoshan District of Shanghai Municipality. Shanghai CCGT consists of three 390 MW gas-fired combined-cycle generating units with a total installed capacity of 1,170 MW, which were put into operation in May, June and July 2006, respectively. We hold 70% equity interest in Shanghai CCGT.

The gas supply for Shanghai CCGT is transported through the pipeline of "West-East Gas Transport Project". Shanghai CCGT generates electricity during the peak load periods and sells its electricity to State Grid Shanghai Municipal Electric Power Company.

Power Plant in Chongqing Municipality

Luohuang Power Plant

Huaneng Luohuang Power Plant ("Luohuang Power Plant") is located in Chongqing Municipality. Each of Phase I and Phase II of Luohuang Power Plant has an installed capacity of 720 MW and consists of two 360 MW coal-fired generating units. The two units in Phase I commenced operation in September 1991 and February 1992 respectively, and the two units in Phase II commenced operation in December 1998. Luohuang Power Plant Phase III consist of two 600 MW coal-fired generating units with an installed capacity of 1,200 MW, which were put into operation in December 2006 and January 2007, respectively. We hold 60% equity interest in Luohuang Power Plant.

The coal supply for Luohuang Power Plant is obtained from Chongqing Municipality. Luohuang Power Plant typically stores 450,000 tons of coal on site. In 2016, Luohuang Power Plant obtained 87% of its coal supplies from annual contracts and the remainder from the open market. The average coal purchase price for Luohuang Power Plant in 2016 was RMB462.33 (2015: RMB432.97) per ton.

Luohuang Power Plant sells its electricity to Chongqing Municipal Electric Power Company.

Liangjiang CCGT

Liangjiang CCGT is located in Chongqing Municipality. Two generating units of this plant commenced operation in October and December 2014, respectively, with an installed capacity of 934 MW. We hold 90% equity interest in Liangjiang CCGT. The gas supply for Liangjiang CCGT is transported though pipeline of "West-East Gas Transport Project."

Liangjing CCGT sells its electricity to State Grid Chongqing Municipal Electric Power Company.

Power Plants in Zhejiang Province

Yuhuan Power Plant

Huaneng Yuhuan Power Plant ("Yuhuan Power Plant") is located in Taizhou of Zhejiang Province. Yuhuan Power Plant Phase I consists of two 1,000 MW ultra-supercritical coal-fired generating units with a total installed capacity of 2,000 MW. Unit I and Unit II were put into operation in November 2006 and December 2006, respectively. Yuhuan Power Plant Phase II consists of two 1,000 MW ultra-supercritical coal-fired generating units with a total installed capacity of 2,000 MW, which commenced operations in November 2007. We hold 100% equity interest in Yuhuan Power Plant.

The coal supply for Yuhuan Power Plant is primarily obtained from Shanxi Province and Inner Mongolia Autonomous Region. Yuhuan Power Plant typically stores 500,000 tons of coal on site. In 2016, Yuhuan Power Plant obtained 76% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Yuhuan Power Plant in 2016 was RMB475.90 (2015: RMB474.23) per ton.

Yuhuan Power Plant sells its electricity to State Grid Zhejiang Electric Power Company.

Changxing "Replacing Small Units with Large Ones" Project

Changxing Power Plant "Replacing Small Units with Large Ones" Project ("Changxing Power Plant") is located in Changxing County of Zhejiang Province. Changxing "Replacing Small Units with Large Ones" Project commenced operation in December 2014, with an installed capacity of 1,320 MW. This is the first project of ultra-supercritical coal-fired generating units of the Company. We hold 100% equity interest in the project.

The coal supply for Changxing Power Plant is primarily obtained from Inner Mongolia,Hebei and partially imported coal. Changxing Power Plant typically stores 150,000 tons of coal on site. In 2016, Changxing Power Plant

obtained 41% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Changxing Power Plant in 2016 was RMB477.36 (2015: RMB484.53) per ton.

Tongxiang CCGT

Tongxiang CCGT is located in Tongxiang City of Zhejiang Province. The plant commenced operation in September 2014 with an installed capacity of 458.4 MW. We hold 95% equity interest in the Tongxiang CCGT. The gas supply for Tongxiang CCGT is transported through pipeline of "West-East Gas Transport Project."

Tongxiang CCGT sells its electricity to State Grid Zhejiang Electric Power Company.

Changxing Photovoltaic

Si'an 10MW Distributed Photovoltaic Power Project ("Changxing Photovoltaic") is located in Changxing County of Zhejiang Province. Part of the project commenced operation in December 2014, with an installed capacity of 5 MW. In March 2015, the rest of the project commenced operation in March 2015, with an installed capacity of 5 MW. We hold 100% equity interest in Changxing Photovoltaic.

Changxing Hongqiao Photovoltaic

Changxing Hongqiao Photovoltaic Power Project ("Changxing Hongqiao Photovoltaic") is located in Changxing Country of Zhejing Province. It commenced operation in Setpotember 2016, with an installed capacity of 30 MW. We hold 100% euiqty interest in this project.

Power Plant in Hunan Province

Yueyang Power Plant

Huaneng Yueyang Power Plant ("Yueyang Power Plant") is located in Yueyang City of Hunan Province. Yueyang Power Plant Phase I has an installed capacity of 725 MW and consists of two 362.5 MW sub-critical coal-fired generating units which commenced operation in September and December 1991 respectively. Yueyang Power Plant Phase II consists of two 300MW coal-fired generating units with installed capacity of 600 MW, which were put into operation in March and May 2006, respectively. Huaneng Yueyang Power Plant Phase III ("Yueyang Power Plant Phase III") consists of two 600 MW generating units with a total installed capacity of 1,200 MW. In January 2011 and August 2012, Unit 5 and Unit 6 of Yueyang Power Plant Phase III, two 600MW coalfired generating units, commenced operation, respectively. We hold 55% equity interest in Yueyang Power Plant.

The coal supply for Yueyang Power Plant is obtained from Datong in Shanxi Province. Yueyang Power Plant typically stores 500,000 tons of coal on site. In 2016, Yueyang Power Plant obtained 4% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Yueyang Power Plant in 2016 was RMB485.68 (2015: RMB436.55) per ton.

Yueyang Power Plant sells its electricity to State Grid Hunan Electric Power Company.

Xiangqi Hydropower

Huaneng Yongzhou Xiangqi Hydropower Station ("Xiangqi Hydropower") is located in Xiangqi County of Hunan Province. Xiangqi Hydropower consists of four 20 MW hydraulic generating units with a total installed capacity of 80 MW. In December 2011, Unit I of Xiangqi Hydropower with an installed capacity of 20 MW passed a trial run. Unit I and Unit II of Yongzhou Xiangqi Hydropower with an installed capacity of 20 MW each commenced operation in December 2011 and May 2012, respectively. Unit III and Unit IV of Xiangqi Hydropower with an installed capacity of 20 MW commenced operation in May and August 2012, respectively. We hold 100% equity interest in Xiangqi Hydropower.

Xiangqi Hydropower sells its electricity to Hunan Electric Power Company.

Subaoding Wind Power

Subaoding Wind Power ("Subaoding Wind Power") is located between Hongjiang City and Dongkou County in Hunan. Part of the Subaoding Wind Power commenced operation in December 2014, with an installed capacity of 80MW, consisting of 40 wind power turbines of 2 MW. The rest of the Subaoding Wind Power commenced operation in March 2015, with an installed capacity of 70 MW, consisting of 35 wind power turbine of 2 MW each. As of the date of this report, all of the wind power turbines have commenced operation with a total installed capacity of 150 MW. We hold 100% equity interest in the Subaoding Wind Power.

Subaoding Wind Power sells its electricity to Hunan Electric Power Company.

Guidong Wind Power

Guidong Wind Power ("Guidong Wind Power") is located at Guidong County of Hunan Province. Guidong Wind Power commenced operation in 2015, with an installed capacity of 84 MW, consisting of 42 wind power turbines of 2 MW each. We hold 100% equity interest in this plant.

Guidong Wind Power sells its electricity to Hunan Electric Power Company.

Power Plant in Hubei Province

Enshi Maweigou Hydropower

Hubei Enshi Maweigou Hydropower Station ("Enshi Maweigou Hydropower") is located in Enshi City of Hubei Province. We entered into an equity transfer agreement to acquire Enshi Maweigou Hydropower on September 30, 2011. Enshi Maweigou Hydropower consists of three 5 MW hydraulic generating units and two 20 MW hydraulic generating units with a total installed capacity of 55 MW. We hold 100% equity interest in Enshi Maweigou Hydropower.

Enshi Maweigou Hydropower sells its electricity to Hubei Electric Power Company.

Wuhan Power Plant

Huaneng Wuhan Power Plant ("Wuhan Power Plant") is located in Wuhan City in Hubei Province. Wuhan Power Plant has an installed capacity of 2,460 MW and consists of two 300 MW coal-fired generating units which commenced operation in 1993 and 1994, two 330 MW coal-fired generating units which commenced operation in 1997, and two 600 MW coal-fired generating units which commenced operation in 2006. We hold 75% equity interest in Wuhan Power Plant. We acquired the power plant in January, 2015 from Huaneng Group.

Wuhan Power Plant sells its electricity to Hubei Electric Power Company.

Dalongtan Hydropower

Huaneng Dalongtan Hydropower Station ("Dalongtan Hydropower") is located in Enshi City of Hubei Province. Dalongtan Hydropower has an installed capacity of 37.6 MW. We hold 97% equity interest in Dalongtan Hydropower. We acquired the power plant in January, 2015 from Huaneng Group.

Dalongtan Hydropower sells its electricity to Hubei Electric Power Company.

Jingmen Co-generation

Huaneng Jingmen Co-generation Power Plant ("Jingmen Co-generation" or "Jingmen Thermal Power") is located in Jingmen City in Hubei Province. Jingmen Co-generation has an installed capacity of 700 MW and consists of two 350 MW coal-fired generating units which commenced operation in 2014. We hold 100% equity interest in Jingmen Co-generation. We acquired the power plant in January, 2015 from HIPDC.

The coal supply for Jingmen Co-generation is obtained from Shaanxi and Gansu. Jingmen Co-generation typically stores 90,000 tons of coal on site. In 2016, Jingmen Co-generation obtained 69% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Jingmen Co-generation in 2016 was RMB464.31 (2015: RMB399.46) per ton.

Jingmen Co-generation sells its electricity to Hubei Electric Power Company.

Yingcheng Co-generation

Huaneng Yingcheng Co-generation Power Plant ("Yingcheng Co-generation") is located in Yingcheng City in Hubei Province. Unit II of Yingcheng Co-generation has an installed capacity of 350 MW which commenced operation in January 2015. Unit I of Yingcheng Co-generation has an installed capacity of 50 MW, which commenced operation in June 2016. We hold 100% equity interest in Yingcheng Co-generation. We acquired the power plant in January, 2015 from HIPDC.

The coal supply for Yingcheng Co-generation is obtained from Shanxi and Shaanxi.Yingcheng Co-generation typically stores 50,000 tons of coal on site. In 2016, Yingcheng Co-generation obtained 100% of its total consumption of coal from the open market. The average coal purchase price for Yingcheng Co-generation in 2016 was RMB632.52 (2015: RMB516.10) per ton.

Yingcheng Co-generation sells its electricity to Hubei Electric Power Company.

Jieshan Wind Power

Jieshan Wind Power Plant ("Jieshan Wind Power") is located at Suixian County of Hubei Province. The Phase I of Jieshan Wind Power commenced operation in June 2015, with an installed capacity of 48 MW, consisting of 24 wind power turbines of 2 MW. Phase II of Jieshan Wind Power commenced operation in August 2016, with an installed capacity of 72 MW, consisting of 36 wind power turbines of 2 MW. We hold 100% equity interest in the Jieshan Wind Power.

Jieshan Wind Power sells its electricity to Hubei Electric Power Company.

Power Plant in Jiangxi Province

Jinggangshan Power Plant

Huaneng Jinggangshan Power Plant ("Jinggangshan Power Plant") is located in Ji'an City of Jiangxi Province. Jinggangshan Power Plant has an installed capacity of 1,920 MW and consists of two 300 MW coal-fired generating units which commenced operation in December 2000 and August 2001 respectively, and two 660 MW generating units which commenced operation in November and December 2009, respectively. We hold 100% equity interest in Jinggangshan Power Plant.

The coal supply for Jinggangshan Power Plant is obtained from Henan Province, Anhui Province and Jiangxi Province. Jinggangshan Power Plant typically stores 255,000 tons of coal on site. In 2016, Jinggangshan Power Plant obtained 29% of its total coal consumption from annual contracts and the remainder from the open market. The average coal purchase price for Jinggangshan Power Plant in 2016 was RMB544.48 (2015: RMB532.70) per ton.

Jinggangshan Power Plant sells its electricity to Jiangxi Electric Power Company.

Jianggongling Wind Power

Jianggongling Wind Power Plant ("Jiangongling Wind Power") is located in Jiujiang Municipality of Jiangxi Province. Jianggongling Wind Power commenced operation in December 2014 (Phase I), with an installed capacity of 66

48 MW, consisting of 24 wind power turbine of 2 MW, and in December 206 (Phase II), with an installed capacity of 26 MW, consisting of 13 wind power turbines of 2 MW. We hold 100% equity interest in the Jianggongling Wind Power.

Ruijin Power Plant

Huaneng Ruijin Power Plant ("Ruijin Power Plant") is located in Ruijin City in Jiangxi Province. Ruijin Power Plant has an installed capacity of 700 MW and consists of two 350 MW coal-fired generating units which commenced operation in 2008. We hold 100% equity interest in Ruijin Power Plant. We acquired the power plant in January, 2015 from HIPDC.

The coal supply for Ruijin Power Plant is obtained from Shanxi, Shaanxi, and partially imported coal. Ruijin Power Plant typically stores 110,000 tons of coal on site. In 2016, Ruijin Power Plant obtained 6% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Ruijin Power Plant in 2016 was RMB509.45 (2015: RMB555.52) per ton.

Ruijin Power Plant sells its electricity to Jiangxi Electric Power Company.

Anyuan Power Plant

Anyuan Power Plant "Replacing Small Units with Large Ones" Project ("Anyuan Power Plant") is located at Pingxiang City of Jiangxi Province. The plant has a total installed capacityof 1,320 MW, consisting of two ultra supercritical units with second reheat cycle of 660 MW each. Anyuan Power Plant is the first project equipped with 660MW ultra supercritical unit with second reheat cycle. We acquired 100% equity interest of the power plant in January 2015.

The coal supply for Anyuan Power Plant is obtained from Gansu and Shanxi. Ruijin Power Plant typically stores 130,000 tons of coal on site. In 2016, Anyuan Power Plant obtained 25% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Ruijin Power Plant in 2016 was RMB546.5 (2015: RMB460.08) per ton.

Anyuan Power Plant sells its electricity to Jiangxi Electric Power Company.

Construction Project in Jiangxi Province

Linghuashan Wind Power Project Phase I. The project of Linghuashan Wind Power was approved by the Energy Administration of Jiangxi Province. We hold 100% equity interest of the project. The project is planned to have an installed capacity of 48 MW, consisting of 24 wind power turbines of 2 MW.

Power Plant in Anhui Province

Chaohu Power Plant

Huaneng Chaohu Power Plant (" Chaohu Power Plant") is located in Chaohu City in Anhui Province. Chaohu Power Plant has an installed capacity of 1,200 MW and consists of two 600 MW coal-fired generating units which commenced operation in 2008. We hold 60% equity interest in Chaohu Power Plant. We acquired the power plant in January, 2015 from HIPDC.

The coal supply for Chaohu Power Plant is obtained from Shandong and Gansu. Chaohu Power Plant typically stores 110,000 tons of coal on site. In 2016, Chaohu Power Plant obtained 77% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Chaohu Power Plant in 2016 was RMB479.8 (2015: RMB440.56) per ton.

Chaohu Power Plant sells its electricity to Anhui Electric Power Company.

Hualiangting Hydropower

Huaneng Hualiangting Hydropower Plant ("Hualiangting Hydropower") is located in Anqing City in Anhui Province. Hualiangting Hydropower has an installed capacity of 40 MW which commenced operation in 1981 and 1987. We hold 100% equity interest in Hualiangting Hydropower. We acquired the power plant in January, 2015 from Huaneng Group.

Hualiangting Hydropower sells its electricity to Anhui Electric Power Company.

Huaining Shijing Wind Power

Shijing Wind Power Plant in Huaining Country ("Huaining Wind Power") is located in Huaining Country, Anhui Province. Huaining Wind Power has a total installed capacity of 50 MW, consisting of 25 turbines of 2MW each, which commenced operation in June 2016. We hold 100% equity interest of the plant.

Huaining Wind Power sells its electricity to Anhui Electric Power Company.

Power Plant in Fujian Province

Fuzhou Power Plant

Huaneng Fuzhou Power Plant ("Fuzhou Power Plant") is located on the south bank of the Min River, southeast of the city of Fuzhou. Fuzhou Power Plant has been developed in three phases. The Fuzhou Power Plant Phase I and Phase II utilize four 350 MW coal-fired generating units with an installed capacity of 1,400 MW, and commenced operations in 1988 and 1999, respectively. The Fuzhou Power Plant Phase III consists of two 600 MW generating units with a total installed capacity of 1,200 MW, and commenced operations in 2010 and 2011, respectively. The capacity of Unit V and Unit VI of the Fuzhou Power Plant Phase III was expanded to 660 MW per unit since January 2012. We hold 100% equity interest in Fuzhou Power Plant.

The coal supply for Fuzhou Power Plant is obtained from several coal producers located mostly in Northern Shanxi Province. The coal is transported by rail from the mines to Qinhuangdao port and by ship down to the east coast of China and up to the Min River to a wharf located at Fuzhou Power Plant. We own and maintain the wharf, which is capable of handling vessels of up to 20,000 tons and of unloading 10,000 tons to 15,000 tons of coal per day. Fuzhou Power Plant typically stores 180,000 tons of coal on site.

In 2016, the Fuzhou Power Plant obtained 13% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Fuzhou Power Plant in 2016 was RMB394.11 (2015: RMB431.36) per ton.

Fuzhou Power Plant sells its electricity to Fujian Electricity Power Company.

Construction Projects in Fujian Province

Luoyuan Power Plant. Luoyuan Power Plant was approved by the NDRC in December 2014. We hold 100% equity interest in the project. The project is planed to have an installed capacity of 1,320 MW, consisting of two ultra supercritical coal-generating units of 660 MW each.

Power Plants in Guangdong Province

Shantou Power Plant

Huaneng Shantou Coal-Fired Power Plant ("Shantou Power Plant") had originally been developed and constructed by HIPDC which transferred all its rights and interests therein to us effective on December 31, 1994. Located on the outskirts of the city of Shantou, Shantou Power Plant was set up with the support of the Shantou municipal government and the Guangdong provincial government. Shantou Power Plant Phase I consists of two 300 MW coal-fired generating units with boilers, which commenced operation in January 1997. Shantou Power Plant Phase II consists of one 600 MW coal-fired generating unit and commenced operation in October 2005. We hold 100% equity interest in Shantou Power Plant.

The coal supply for Shantou Power Plant is obtained from several coal producers located mostly in the northern area of Shanxi Province. The coal is transported by rail from the mines to Qinhuangdao port and by ship down the east coast of China to the wharf located at Shantou Power Plant, which is maintained by the Shantou Port Authority and is capable of handling 35,000 ton vessels. The Shantou Power Plant typically stores 300,000 tons of coal on site.

In 2016, the Shantou Power Plant obtained 16% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Shantou Power Plant in 2016 was RMB444.61 (2015: RMB430.14) per ton.

Shantou Power Plant sells its electricity to Guangdong Electric Power Company.

Haimen Power Plant

Huaneng Haimen Power Plant is located in Shantou City, Guangdong Province. Haimen Power Plant has an installed capacity of 4,144 MW and consists of four 1,036 MW generating units. The first two generating units ("Haimen") commenced operation in July 2009 and October 2009, respectively. We hold 100% equity interest in the first two generating units. The other two generation units commenced operation at the beginning of 2013 ("Haimen Power"). We hold 80% equity interest in the other two generating units.

The coal supply for Haimen Power Plant is mainly imported from Indonesia. Haimen Power Plant typically stores 400,000 tons of coal on site. In 2016, Haimen Power Plant obtained 100% of its total consumption of coal from the open market. The average coal purchase price for Haimen Power Plant in 2016 was RMB476.75 (2015: RMB498.17) per ton.

Haimen Power Plant sells its electricity to Guangdong Electric Power Company.

Shantou Photovoltaic

Shantou Power Plant 17 MW Photovoltaic Power Plant ("Shantou Photovoltaic") is located in Shantou City, Guangdong Province. It has an installed capacity of 17 MW, which commenced operation in September 2016. We hold 100% equity interest in the Project.

Shantou Photovoltaic sells its electricity to Guangdong Electric Power Company.

Power Plants in Yunnan Province

Diandong Energy

Yunnan Diandong Energy Limited Company ("Diandong Energy") is located in Qujing City, Yunnan Province. Diandong Energy has an installed capacity of 2,400 MW and consists of four 600 MW generating units which commenced operation in February 2006, July 2006, November 2006 and May 2007, respectively. We hold 100% equity interest in Diandong Energy.

The coal supply for Diandong Energy is mainly obtained from Yunnan and Guizhou Provinces. Diandong Energy typically stores 1,200,000 tons of coal on site. In 2016, Diandong Energy obtained 20% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price for Diandong Energy in 2016 was RMB342.39 (2015: RMB371.25) per ton.

Diandong Energy sells its electricity to Yunnan Electric Power Company.

Yuwang Energy

Yunnan Diandong Yuwang Energy Limited Company ("Yuwang Energy") is located in Qujing City, Yunnan Province. Yuwang Energy has an installed capacity of 1,200 MW and consists of two 600 MW generating units which commenced operation in July 2009 and February 2010, respectively. We hold 100% equity interest in Yuwang Energy.

The coal supply for Yuwang Energy is mainly obtained from Yunnan and Guizhou Provinces. Yuwang Energy typically stores 600,000 tons of coal on site. In 2016, Yuwang Energy obtained 100% of its total consumption of coal from the open market. The average coal purchase price of coal for Yuwang Energy in 2016 was RMB380.58 (2015: RMB341.80) per ton.

Yuwang Energy sells its electricity to Yunnan Electric Power Company.

Fuyuan Wind Power

Fuyuan Wind Power Plant ("Fuyuan Wind Power") is located in the Fuyuan County of Qujing Municipality of Yunnan Province. Fuyuan Wind Power consists of Wenbishan Wind Power, which commenced operation in November 2014 with 20 wind power turbines of 2 MW each, Yibasan Wind Power, which commenced operation in 2014 with 24 wind power turbines of 2 MW each, and Shengjing Wind Power, which commenced operation in December 2016 with 24 wind power turbines of 2 MW each. We hold 100% equity interest in Fuyuan Wind Power.

Fuyuan Wind Power sells its electricity to Yunnan Electric Power Company.

Construction Project in Yunnan Province

Fuyuan Wind Power also has new wind projects under construction, with installed capacity of 48 MW, consisting of 24 wind power turbines of 2 MW each. We hold 100% equity interest in the project.

Power Plants in Hainan Province

Haikou Power Plant

Huaneng Haikou Power Plant ("Haikou Power Plant") is located in Haikou City in Hainan Province. Haikou Power Plant has an installed capacity of 936 MW and consists of two 138 MW coal-fired generating units which commenced operation in 1999, 2000, and two 330 MW coal-fired generating units which commenced operation in 2006. We hold 91.8% equity interest in Haikou Power Plant. We acquired the power plant in January, 2015 from Huaneng Group.

The coal supply for Haikou Power Plant is mainly obtained from Inner Mongolia, Shanxi, and partially imported coal. Haikou Power Plant typically stores 120,000 tons of coal on site. In 2016, Haikou Power Plant obtained 19% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price of coal for Haikou Power Plant in 2016 was RMB393.68 (2015: RMB428.82) per ton.

Haikou Power Plant sells its electricity to Hainan Electric Power Company.

Dongfang Power Plant

Huaneng Dongfang Power Plant ("Dongfang Power Plant") is located in Dongfang City in Hainan Province. Dongfang Power Plant has an installed capacity of 1,400 MW and consists of four 350 MW coal-fired generating units which commenced operation in 2009, 2012. We hold 91.8% equity interest in Dongfang Power Plant. We acquired the power plant in January, 2015 from Huaneng Group.

The coal supply for Dongfang Power Plant is mainly obtained from Shanxi and partially imported coal. Dongfang Power Plant typically stores 160,000 tons of coal on site. In 2016, Dongfang Power Plant obtained 8% of its total consumption of coal from annual contracts and the remainder from the open market. The average coal purchase price of coal for Dongfang Power Plant in 2016 was RMB385.97 (2015: RMB431.69) per ton.

Dongfang Power Plant sells its electricity to Hainan Electric Power Company.

Nanshan Co-generation

Huaneng Nanshan Co-generation Power Plant ("Nanshan Co-generation") is located in Sanya City in Hainan Province. Nanshan Co-generation has an installed capacity of 132 MW which commenced operation in 2003. We hold 91.8% equity interest in Nanshan Co-generation. We acquired the power plant in January 2015 from Huaneng Group.

Nanshan Co-generation sells its electricity to Hainan Electric Power Company.

Gezhen Hydropower Plant

Huaneng Gezhen Hydropower Plant ("Gezhen Hydropower Plant") is located in Dongfang City in Hainan Province. Gezhen Hydropower Plant has an installed capacity of 82 MW which commenced operation in 2009. We hold 91.8% equity interest in Gezhen Hydropower Plant. We acquired the power plant in January, 2015 from Huaneng Group. Gezhen Hydropower Plant sells its electricity to Hainan Electric Power Company.

Wenchang Wind Power

Huaneng Wenchang Wind Power Plant ("Wenchang Wind Power") is located in Wenchang City in Hainan Province. Wenchang Wind Power has an installed capacity of 51.5 MW and consists of 33 turbines with each capacity of 1.5 MW which commenced operation in 2008, and one turbine with capacity of 2 MW which commenced operation in 2015. We hold 91.8% equity interest in Wenchang Wind Power. We acquired the power plant in January, 2015 from Huaneng Group.

Wenchang Wind Power sells its electricity to Hainan Electric Power Company.

Dongfang Photovoltaic

Dongfang Photovoltaic Power Plant ("Dongfang Photovoltaic") is located in Dongfang City in Hainan Province. Dongfang Photovoltaic has an installed capacity of 12 MW which commenced operation in July 2016. We hold 91.8% equity interest in Dongfang Power Plant.

Dongfang Photovoltaic sells its electricity to Hainan Electric Power Company.

Construction Project in Guangxi Province

Distribution Energy Project of Guilin World Tourism City. Distribution Energy Project of Guilin World Tourism City was approved by the Development and Reform Commission of Guangxi Autonomous. We hold 100% equity interest in the project. The project consists of four co-generating units of 42 MW, three dual pressure waste-heat boilers, three condensing turbo-generating units of 21 MW and one back-pressure turbo- generating unit of 6 MW.

Power Plant in Guizhou

Panxian Wind Power

Panxian Wind Power ("Panxian Wind Power") is located at Panxian county of Guizhou Province. It commenced operation in December 2015, with an installed capacity of 24 MW, consisting of 12 wind power turbine of 2 MW each. We hold 100 % equity interest in Panxian Wind Power.

Panxian Wind Power sells its electricity to Guizhou Electric Power Company.

Construction Project in Guizhou Province

Panxian Dapashan Wind Power Project. Panxian Dapashan Wind Power Project was approved by the Energy Administraion of Guizhou Province. We hold 100 % equity interest in the project. The project is planned to have an installed capacity of 48 MW, consists of 24 turbines of 2 MW each. 12 turbines are operational and 12 turbines are currently under construction.

Panxian Jiaoziding Wind Power Project. Panxian Jiaoziding Wind Power Project was approved by the Energy Administraion of Guizhou Province. We hold 100 % equity interest in the project. The project is planned to have an installed capacity of 48 MW, consists of 24 turbines of 2 MW each.

Power Plant in Singapore

Tuas Power

With a licensed generating capacity of 2,670MW, Tuas Power is one of the three largest power generation companies in Singapore. It currently has an installed operation generating capacity of 2,609MW, comprising of 1,876 MW gas-fired combined cycle generating units, 133 MW of coal-biomass fired steam turbine generating units and 600 MW of oil-fired steam generating unit.

Supply of coal is procured from coal producers in Indonesia via two long-term coal supply contracts with 10 years and 15 years term respectively. Supply of gas is obtained from Pavilion Gas Pte Ltd, Sembcorp Gas Pte Ltd and Shell Gas Marketing Pte Ltd (formally known as BG Singapore Gas Marketing Pte Ltd).BG Singapore Gas Marketing Pte Ltd. Oil supply, if required, is obtained through the spot market.

Competition and Dispatch

All power plants in China are subject to dispatch conducted by various dispatch centers. A dispatch center is required to dispatch electricity pursuant to the Regulations on the Administration of Electric Power Dispatch Networks and Grids, issued by the State Council with effect from November 1, 1993, and in accordance with its agreements with power plants subject to its dispatch. Power generation companies are also required to enter into on-grid dispatch agreements with power grid companies. As a result, there is competition for favorable dispatch treatment in the PRC electric power industry, especially during the off-peak load periods. More efficient power plants usually operate at higher output than less efficient power plants. We believe that in order to increase system stability, large and efficient power plants such as ours will be preferred as base load plants to generate power for the grids to which they connect. We believe that our dispatch arrangements with the local power corporations and dispatch centers, superior quality equipment, lower coal consumption rate, higher efficiency of plant operation, lower emission levels and larger capacity represent competitive advantages in the markets in which we operate.

Since 2002, we have been facing competition from four other major power generation groups: China Power Investment Corporation, China Huadian Power Corporation, China Guodian Power Corporation and China Datang Power Corporation, which were created following the break-up of the former State Electric Corporation in 2002. Although we were not affected by this reform measure, as we have developed good working relationship with the dispatch centers and the relevant government departments in the areas where our power plants are located, there can be no assurance that such good working relationships will not be adversely affected as more power generation companies compete for favorable dispatch treatment.

As power generation companies were separated from power grid companies and more competitors entered into the market, the SERC issued the Interim Measures Regarding Promotion of Openness, Fairness and Equitableness of Power Dispatch, requiring power dispatch centers to treat all competitors indiscriminately in respect of dispatch administration and information disclosure, except in cases where safe and stable operation of the electric power system requires different treatment.

In 2008, with the purpose of improving energy usage efficiency, the government implemented an electricity-optimized dispatch policy in Henan Province, Sichuan Province, Jiangsu Province, Guangdong Province and Guizhou Province on a pilot basis, and plans to roll out to others if the trial operation is successful. In addition, as of December 31, 2014, in all regions in which we operate power plants, the government's power administrative departments make power generation plan policies with the aim to improve the planned utilization hours of the environment-protecting and energy-saving units. In 2015, the NDRC and China Energy Administration jointly issued the Guidelines on Improving Electric Power Operations and Deepening Clean Energy Generation, which confirms a system that aims to ensure the full-priced acquisitions of renewable energy and ensure that the hours of usage for high-efficiency energy-saving generators be significantly higher than that for coal-fired generators. And the Guidelines also demands within a certain time period an increase of the hours of usage for coal-fired generators, of which the emission level is close to or reaches the cap level of gas turbine.

In 2016, China National Energy Administration issued Guidelines on Improving Clean Energy Consumption and Distribution in Northern China, Notice on Issuing the Measures for the Administration of the Guaranteed Buyout of Electricity Generated by Renewable Energy Resources, Pilot Program of Local Clean Energy Consumption and Distribution in Gansu, Inner Mongolia and Jilin, and Provisionary Measures for Priority Dispatch of Renewable Peaking Power Generation Units, which require an improvement on clean energy consumption and distribution. For the purposes of enhancing the dispatch priority of energy that is produced with high-efficient and low emission, China National Energy Adminstration also requested for comments in connection with the proposed Measures for the Administration of the Guaranteed Buyout of Electricity Generated by Nuclear Power, Guildance on High-efficiency, Low Emission Energy, Guildelines on Prioritizing Utilization and Dispatching and the Announcement on the Orderly Reform on Power Generation and Consumption Planning.

Competition and Dispatch in Singapore

Following the introduction of LNG into Singapore, new players as well as incumbents have invested in new gas-fired generating capacities to compete in the Singapore electricity market. Tuas Power competes in the NEMS using its portfolio of gas-fired, coal-biomass fired and oil-fired generating units. It was able to maintain a market share of approximately 21.5% in the NEMS for 2016. Its major competitors include Senoko Energy (formerly Senoko Power) which is owned by a Japanese/French consortium led by Marubeni Group, YTL PowerSeraya that is owned by YTL Group of Malaysia, SembCorp Cogen and Keppel Merlimau Cogen and PacificLight Power Pte Ltd. A new entrant, Tuaspring, entered the market in 2015. Tuas Power's investment in its new combined cycle will allow it to maintain its leadership position in Singapore's power industry.

In the NEMS, power generation companies compete to generate and sell electricity every half-hour by offering their capacity (specifying price/quantity pairs). The EMC, the operator of Singapore's wholesale electricity market, determines the least-cost dispatch quantities and the corresponding market-clearing or spot prices based on the offers made by power generation companies. The spot prices in the NEMS reflect the least-cost market solution for the dispatch of energy and provision of operating reserves. In general, this means that each power generation company that submitted an offer below the spot price will be dispatched, and a power generation company that submitted an offer above the spot price will not be dispatched. The spot price that a power generation company receives is a nodal price, which may vary according to their location on the network to reflect the cost of transmission losses or network constraints.

Environmental Regulation

We are subject to the PRC Environmental Protection Law, the regulations of the State Council issued thereunder, the PRC Law on the Prevention and Treatment of Water Pollution, the PRC Law on the Prevention and Treatment of Air Pollution, the Emission Standard of Air Pollutants for Thermal Power Plants thereunder and the PRC Law on Ocean Environment Protection (collectively the "National Environmental Laws") and the environmental rules promulgated by the Local Governments in whose jurisdictions our various power plants are located (the "Local Environmental Rules"). According to the National Environmental Laws, the State Environmental Protection Bureau sets national environmental protection standards and local environmental protection bureaus may set stricter local standards. Enterprises are required to comply with the stricter of the two standards.

At present, new projects are subject to the environmental evaluation approval. The project proposal is required to be submitted to the Ministry of Environmental Protection of PRC for approval.

Effective July 1, 2003, all power plants in China became subject to the pollutant discharge levy system, pursuant to which discharge fees are levied based on the actual amount of pollutants discharged. As a result, all of our power plants are now required to pay discharge fees in such manner. Since 2008, certain provinces have raised the rates of waste disposal fees. In 2014, 2015 and 2016, we paid to the local governments total discharge fees of approximately RMB387 million, RMB311 million and RMB372 million, respectively.

In 2011, the PRC Government promulgated a New Emission Standards of Air Pollutants for Thermal Power Plants, which implement more stringent standards on discharge of polluting substances by thermal power plants. These restrictive standards govern both the total sulfur dioxide and nitrous oxide emissions from the power

plant and the emission density of each chimney, and also require thermal power plants to equip all units with denitrification facilities by the end of 2015.

In September 2013, the State Council issued the Air Pollution Prevention Action Plan (the "Plan"), setting forth stricter requirements for air pollution prevention and control. Local government departments have released local rules and regulations under the Plan, some of which require higher emission standards than the national ones. Carbon emission trading has been conducted in certain regions on a trial basis and could be gradually introduced to an expanded market in the future. On July 1, 2014, the new pollutants emission standards for thermal power plants and the dust emission standards in key regions will also come into effect. In September 2014, the NDRC, the Ministry of Environmental Protection and China National Energy Administration jointly issued the 2014-2020 Action Plan for Energy Saving, Emission Reduction and Renovation of Coal-fired Generation Units, imposing more strict requirements for efficient and clean development of coal-fired generating plants. In December 2016, the State Council issued the Comprehensive Work Plan for Conserving Energy and Reducing Emissions for the 13th Five-Year, puting forward new goals and requirements for energy saving and emission reduction.

In order to meet with the requirements of the New Emission Standards, we have installed flue gas desulphurization ("FGD") facilities and denitrification facilities with all of our newly constructed generating units. We have also carried out sulfur disposal reform on the existing generating units. As of the end of 2012, we have installed and operated desulphurization facilities on all our existing coal-fired generating units. By the end of 2014, all coal-fired generating units of the Company have been renovated to include denetrification facilities.

In order to reduce fly ash, we use very high-efficiency electrostatic precipitators and conduct efficiency improvement and renovations according to increasingly strict state and local emission standards. Each power plant is also equipped with a wastewater treatment facility to treat water used by the power plant before it is released into the river or the sea. We pay discharge fees on the basis of measurements made at discharge points of each plant where waste is released. All of the disposal equipment and facilities for sulfur dioxide, fly ash, wastewater, nitrogen oxides, smoke dust and noise in our existing power plants completely satisfy the existing national standards.

We believe we have implemented systems that are adequate to control environmental pollution caused by our facilities. In addition to the measures identified above, each power plant has its own environment protection office and staff responsible for monitoring and operating the environmental protection equipment. The environmental protection departments of the local governments monitor the level of emissions and base their fee assessments on the results of their tests.

We believe our environmental protection systems and facilities for the power plants are adequate for us to comply with the currently effective national and local environmental protection regulations. It is expected that the PRC Government will impose additional and stricter regulations to implement the emission plan which would require additional expenditure in compliance with environmental regulations.

Environmental Regulation in Singapore

Tuas Power's generation operations are subject to Singapore's Environmental Protection and Management Act and Environmental Public Health Act. The former sets out requirements pertaining to control of pollution and management of hazardous substance while the latter focuses mainly on proper waste management.

Tuas Power Station

To address the environmental concerns and regulatory requirements, Tuas Power Station has put in place an environmental management system. All generating units are equipped with pollution control facilities. Stage I steam plant burn low sulfur content fuel oil and employ an electro-precipitator to control sulfur dioxide and particulate emissions. Stage II combined-cycle plants burn natural gas and are fitted with low-nitrogen oxide burners to control nitrogen oxide emissions. Source emission tests are conducted annually by National Environment Agency (NEA) accredited contractors and the results are submitted to NEA Pollution Control Department.

Tuas Power Station has a dedicated wastewater treatment plant to treat its oily wastewater and process wastewater prior to discharge into the sea. The treatment processes are automated to prevent accidental adverse discharge and critical parameters are monitored on a real-time basis. Trade effluent testing is performed annually and the results are shared with the Pollution Control Department.

Land contamination is prevented through well-designed storage and containment procedures. Specific areas for storage of waste and hazardous substances are designated within the power plant.

Waste generated in Tuas Power Station plants is identified and managed accordingly. Waste with residual value, such as waste oil, is resold to licensed collectors for reuse while other waste is disposed through licensed disposal contractors.

Hazardous substances which have potential to cause environmental pollution are controlled within the power plant compound. A hazardous substance permit, issued by the Pollution Control Department, is required to store the hazardous substances in the premises. Our personnel who handle these chemicals are properly trained and our storage facility for hazardous substances are specifically designed to prevent and mitigate the likelihood and impact of any abnormal releases. Regular audits are conducted to ensure these hazardous substances are managed properly and the findings and recommendations for improvements are reported to the Pollution Control Department.

TMUC

TMUC utilizes an efficient cogeneration process where up to 80% of the useful energy from the plant is used to produce steam for industrial customers and the remaining energy is converted to electricity for internal use and transmission to the national grid. In 2016, the energy split between heat and power is 45% and 55% respectively, and the overall plant efficiency averaged at 59%.

The TMUC plant is designed to comply with stringent environmental standards set by the local authority. TMUC adopts the circulating fluidized bed boiler technology that enables use of high percentage of carbon neutral biomass (palm kernel shell and woodchips) co-fired with clean coal (low sulphur and low ash) to reduce carbon footprint significantly to the same level as oil-fired plant and with lower sulphur and nitrogen oxides emission. High efficiency bag filters are installed to ensure low particulates emission.

Coal, biomass and ash handling, transfer and storage systems at TMUC are fully enclosed to prevent any fugitive dust during unloading, storage and handling operation. Coal and ash are stored in silo while biomass is stored in enclosed warehouse.

Fly ash and bed ash generated from the CFB boilers are fully recycled and processed for use as value-added construction materials.

Oily wastewater and coal/ash washing wastewater are treated prior to discharge. Online monitoring of oil-in-water and suspended solids (through turbidity meter) are carried out for oily wastewater and coal/ash washing wastewater respectively to prevent accidental discharge. Chemical/regeneration wastewater is neutralized prior to discharge. Online monitoring of pH is conducted to prevent accidental discharge. Stop-gates are strategically installed at drain to prevent poor quality effluent/water from entering the sea.

Insurance

We currently maintain property all-risks insurance and machinery-breakdown insurance for all of our power plants, and construction all-risks insurance or erection all-risks insurance for all of our newly built and expansion projects as well as large-scaled upgrading projects. Our current insurance coverage on our property, plant and equipment (including construction all-risk insurance) is mainly maintained with Yongcheng Property and Casualty Insurance Company, and co-insured by PICC Property and Casualty Company Ltd. and China Pacific Property Insurance Co., Ltd., which amounted to approximately RMB412.93 billion. In 2016, we renewed the liabilities insurance for our directors and officers with coverage of US$10 million.

We do not maintain any third-party liability insurance to cover claims in respect of bodily injury or property or environment damage arising from accidents on our property or relating to our operation other than the third-party additional risk insurance included in construction all-risk insurance or erection all-risk insurance. We do not usually carry business interruption insurance either, which is not customarily carried by power companies in the PRC. We believe that our insurance coverage is adequate and is standard for the power industry in China. Please refer to the section entitled "Risk factors – Risks relating to our business and the PRC's power industry – Operation of power plants involves many risks and we may not have enough insurance to cover the economic losses if any of our power plant's ordinary operation is interrupted."

Tuas Power purchases key insurance policies, such as industrial all-risks insurance (including business interruption insurance coverage), public and products liability insurance, directors' and officers' liability insurance, pollution legal liability insurance and marine cargo insurance. Total insured value under the industrial all-risks insurance is US$4.5 billion for 2017.

ITEM 4A Unresolved Staff Comments

None.

ITEM 5 Operating and Financial Reviews and Prospects

A. General

The principal activities of the Company are investment, construction, operation and management of power plants. The Company provides consistent and reliable electricity supply to customers through grid operators where its operating plants are located. The Company is committed to scientific development through increasing economic efficiency, enhancing returns for shareholders, conserving resources and protecting the environment. The Company also attaches importance to social responsibilities and makes active contribution to the building of a harmonious society.

Since its incorporation, the Company has continued to expand its operational scale. The Company has been a leader in its industry in terms of competitiveness, resource utilization efficiency and environmental protection. The Company is Asia's largest listed power producer and China's most dynamic power generator. Its power generation operations are widely located with coverage in the Northeast China Grid, the Northern China Grid, the Northwest China Grid, the Eastern China Grid, the Central China Grid, the Southern China Grid, and the overseas market in Singapore.

Looking back in 2016, with strong support from its shareholders and the employees, the Company made active and concerted efforts to respond to the changes in power, coal and capital markets by expanding overseas market share, improving marketing analysis and enhancing internal management with focuses on key operations, thorough planning and sound internal control. These efforts have contributed to the growth of the Company in various aspects in 2016. Throughout 2016, the Company maintained its leading position in major technological and economic indicators and utilization hours through safe production and active marketing activities. Its fuel management was strengthened and financial costs were effectively controlled. Marked improvement was noticeable in the Company's growth because of its active power generation reorganizing efforts. The Company has also made new developments in energy saving, ultra-low emission and technological renovation, diligently fulfilling its social responsibilities as a reliable provider of sufficient, stable and environmentally-friendly power to the society.

Critical accounting policies

The Company and its subsidiaries have identified the policies below as critical to our business operations and the understanding of our results of operations. The impact of and any associated risks related to these policies on the business operations are discussed throughout the Operating and Financial Reviews and Prospects where such policies affect our reported and expected financial results. For a detailed discussion on the application of these and other accounting policies, see Note 2 to the Financial Statements in Item 18 of this Annual Report on Form 20-F.

Note that our preparation of this Annual Report on Form 20-F requires us to make estimates and assumptions that affect the reported amount of assets and liabilities, disclosure of contingent assets and liabilities at the date of our financial statements, and the reported amount of revenue and expenses during the reported periods. There can be no assurance that actual results will not differ from those estimates.

Depreciation of property, plant and equipment

Depreciation of property, plant and equipment is provided based on book value of assets less estimated residual value over estimated useful life using a straight-line method. For the impaired property, plant and equipment, depreciation is provided based on book value after deducting the impairment provision over estimated useful life of assets. The estimated useful lives are as follows:

	2016
Dam	8 – 50 years
Port facilities	20 – 40 years
Buildings	8 – 30 years
Electric utility plant in service	5 – 30 years
Transportation facilities	8 – 27 years
Others	5 – 14 years

Where parts of an item of property, plant or equipment have different useful lives, the cost of the item is allocated on a reasonable basis between the parts and each part is depreciated separately. At the end of each year, the Company and its subsidiaries review the estimated useful life, residual value and the depreciation method of the property, plant and equipment and make adjustment when necessary.

Useful life of power generation license

The Company and its subsidiaries acquired the power generation license as part of the business combination with Tuas Power. The power generation license is initially recognized at fair value at the acquisition date. The license has an indefinite useful life and is not amortized. The assessment that the license has an indefinite useful life is based on the expected renewal of power generation license without significant restriction and cost, together with the consideration on related future cash flows generated and the expectation of continuous operations. It is tested annually for impairment and carried at cost less accumulated impairment loss. Useful life of the power generation license is reviewed by the Company and its subsidiaries each financial period to determine whether events and circumstances continue to support the indefinite useful life assessment.

Impairment of non-financial assets

The carrying amounts of property, plant and equipment, intangible assets with definite useful lives, land use rights, mining rights and long-term equity investments not accounted for as financial assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. Goodwill and indefinite-lived intangible assets are tested for impairment annually regardless of whether there are indications of impairment or more frequently if events or changes in circumstances indicate a potential impairment. An impairment loss is recognized if the carrying amount of an asset or cash-generating unit ("CGU") exceeds its recoverable amount.

The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less cost to sell. For impairment testing, assets are grouped together into the smallest group of assets that generate cash inflows from continuing use that are largely independent of the cash inflows of other assets or CGUs.

Subject to an operating segment ceiling test, CGUs to which goodwill has been allocated are aggregated so that the level at which impairment testing is performed reflects the lowest level at which goodwill is monitored for internal reporting purposes.

Goodwill acquired in a business combination is allocated to groups of CGUs that are expected to benefit from the synergies of the combination.

Impairment losses are recognized in profit or loss. Impairment losses recognised in respect of CGUs are allocated first to reduce the carrying amount of any goodwill allocated to the CGU (group of CGUs), and then to reduce the carrying amounts of the other assets in the CGU (group of CGUs) on a pro rata basis, except that the carrying value of an asset will not be reduced below its individual fair value less costs of disposal (if measurable) or value in use (if determinable).

An impairment loss in respect of goodwill is not reversed. Except for goodwill, all impaired non-financial assets are subject to review for possible reversal of impairment at each reporting date. A reversal of an impairment loss is limited to the asset's carrying amount that would have been determined had no impairment loss been recognized in prior year. Reversals of impairment losses are credited to profit or loss in the year in which the reversals are recognized.

Deferred income tax

Deferred income tax assets and liabilities are recognized based on the differences between tax bases of assets and liabilities and respective book values (temporary differences). For deductible tax losses or tax credit that can be brought forward in accordance with tax law requirements for deduction of taxable income in subsequent years, it is considered as temporary differences and related deferred income tax assets are recognized. No deferred income tax liability is recognized for temporary difference arising from initial recognition of goodwill. For those temporary differences arising from initial recognition of an asset or liability in a non-business combination transaction that affects neither accounting profit nor taxable profit (or deductible loss) at the time of the transaction, no deferred income tax asset and liability is recognized. The temporary differences relating to investments in subsidiaries to the extent that, in the case of taxable differences, the Company and its subsidiaries control the timing of the reversal and it is probable that the differences will not reverse in the foreseeable future, or in the case of deductible differences, unless it is probable that they will reverse in the future.

The Company and its subsidiaries recognize deferred income tax assets to the extent that it is probable that taxable profit will be available to offset the deductible temporary difference, deductible tax loss and tax credit.

At the end of reporting period, deferred income tax assets and liabilities are measured at the tax rates that are expected to apply to the period when the asset is realized or liability is settled.

The carrying amount of a deferred tax asset is reviewed at the end of each reporting period and is reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow the related tax benefit to be utilized. Any such reduction is reversed to the extent that it becomes probable that sufficient taxable profits will be available.

Deferred income tax assets and deferred income tax liabilities are offset when meeting all the conditions below:

(1) The Company and its subsidiaries have the legal enforceable right to offset current income tax assets and current income tax liabilities;

(2) Deferred income tax assets and deferred income tax liabilities are related to the income tax levied by the same tax authority of the Company and its subsidiaries.

Principal accounting policies

The IASB has issued a new standard and a number of amendments to IFRSs that are first effective for the current accounting period of the Company and its subsidiaries. None of these new standard or developments have had a material effect on how the Company and its subsidiaries' results and financial position for the current or prior periods have been prepared or presented. The Company and its subsidiaries have not applied any new standard or interpretation that is not yet effective for current accounting period.

New accounting pronouncements

For a detailed discussion of new accounting pronouncements, see Note 2(ab) to the Financial Statements.

B. Operating results

Our financial statements are prepared under IFRS as issued by IASB. The following management's discussion and analysis is based on the financial information prepared under IFRS.

Year ended December 31, 2016 compared with year ended December 31, 2015

	For the Year Ended December 31,		
	2016 RMB'000	2015 RMB'000	Increased/ (Decreased) %
Operating revenue	113,814,236	128,904,873	(11.71)
Tax and levies on operations	(1,177,818)	(1,157,760)	1.73
Operating expenses			
Fuel	(56,617,542)	(59,242,367)	(4.43)
Maintenance	(4,343,349)	(4,556,361)	(4.68)
Depreciation	(14,815,620)	(14,411,632)	2.80
Labor	(8,043,406)	(7,751,551)	3.77
Service fees on transmission and transformer facilities of HIPDC	(138,038)	(140,771)	(1.94)

	For the Year Ended December 31,		
	2016 RMB'000	2015 RMB'000	Increased/ (Decreased) %
Purchase of electricity	(3,066,415)	(3,581,517)	(14.38)
Others	(7,234,308)	(8,919,988)	(18.90)
Total operating expenses	(94,258,678)	(98,604,187)	(4.41)
Profit from operations	18,377,740	29,142,926	(36.94)
Interest income	147,063	160,723	(8.50)
Financial expenses, net			
Interest expense	(6,817,526)	(7,945,734)	(14.20)
Exchange (loss)/gain and bank charges , net	(250,076)	(24,336)	927.60
Total financial expenses, net	(7,067,602)	(7,970,070)	(11.32)
Share of profits less losses of associates and joint ventures	1,298,889	1,525,975	(14.88)
Loss on fair value changes of financial assets / liabilities	(12,986)	(16,742)	(22.43)
Other investment income	1,070,034	115,238	828.54
Profit before income tax expense	13,813,138	22,958,050	(39.83)
Income tax expense	(3,465,151)	(5,698,943)	(39.20)
Net Profit	10,347,987	17,259,107	(40.04)
Attributable to:			
-Equity holders of the Company	8,520,427	13,651,933	(37.59)
-Non-controlling interests	1,827,560	3,607,174	(49.34)

Total power generated by the Company's domestic operating power plans for the year on consolidated basis amounted to 313.690 billion kWh, representing a decrease of 2.13% year-on-year. The electricity sold amounted to 295.800 billion kWh, representing a decrease of 2.05% year-on-year. The decrease in the Company's power generation for the year was mainly attributable to the following reasons: (i) the installed capacity growth outpaced the growth of the nationwide power consumption while the utilization hours of coal-fired power generation units saw a year-on-year fall; (ii) the growth of the Company's installed capacity was below the regional average; and (iii) the launch of new nuclear power generators in areas, including Liaoning, Guangdong, Fujian and Hainan provinces, had a relatively great impact on the output of the coal-fired power generation units in these regions.

The annual average utilization hours of the Company's domestic power plants reached 3,921 hours. The utilization hours of coal-fired power generating unit was 4,107 hours. In most of the areas where the Company's coal-fired power plants are located, the utilization hours of the Company was in a leading position .

The power generation of the Company's domestic power plants for the year ended December 31, 2016 is listed below (in billion kWh):

Domestic Power Plant	Power generation in 2016	Power generation in 2015	Change (%)
Liaoning Province			
Dalian	5.656	5.921	(4.47)
Dandong	2.920	3.050	(4.26)
Yingkou	7.872	7.875	(0.04)
Yingkou Co-generation	3.028	3.085	(1.84)
Wafangdian Wind Power	0.098	0.094	4.37
Suzihe Hydropower	0.034	0.051	(32.36)
Changtu Wind Power	0.199	0.196	1.45
Dandong Photovoltaic	0.009		

Yingkou Co-generation Photovoltaic	0.0071		
Inner Mongolia Autonomous Region			
Huade Wind Power	0.218	0.193	12.82
Hebei Province			
Shang'an	12.931	12.519	3.29
Kangbao Wind Power	0.116	0.097	19.68
Kangbao Photovoltaic	0.016		
Gansu Province			
Pingliang	8.443	6.020	40.24
Jiuquan Wind Power	0.410	0.438	(6.32)
Jiuquan II Wind Power	0.443	0.444	(0.24)
Yumen Wind Power	0.169	0.150	12.61
Yigang Wind Power	0.251	0.001	19,611.99
Beijing Municpality			
Beijing Co-generation	3.406	3.924	(13.19)
Beijing Co-generation CCGT	4.136	4.159	(0.54)
Tianjin Municipality			
Yangliuqing Co-generation	5.280	5.427	(2.71)
Lingang Co-generation CCGT	1.973	1.966	0.35
Shanxi Province			
Yushe	2.642	2.750	(3.92)
Zuoquan	5.519	5.625	(1.89)
Dongshan CCGT	2.546	1.139	123.53
Shandong Province			
Dezhou	13.749	14.388	(4.44)
Jining	4.733	4.893	(3.27)
Xindian	3.214	3.158	1.77
Weihai	10.179	10.894	(6.56)
Rizhao Phase II	7.877	7.499	5.04

Domestic Power Plant	Power generation in 2016	Power generation in 2015	Change (%)
Zhanhua Co-generation	1.602	1.503	6.59
Henan Province			
Qinbei	17.429	18.710	(6.85)
Luoyang Co-generation	2.841	1.485	91.3
Luoyang Yangguang	0.742		
Mianchi Co-generation	0.422		
Guoji Wind Power	0.019		
Jiangsu Province			
Nantong	6.129	6.167	(0.62)
Nanjing	3.001	2.736	9.68
Taicang	10.507	10.081	4.22
Huaiyin	5.570	5.813	(4.17)
Jinling CCGT	1.717	2.581	(33.49)
Jinling Coal-fired	12.766	11.728	8.85
Jinling Co-generation	1.801	1.711	5.26
Rudong Wind Power	0.101	0.095	6.23
Qidong Wind Power	0.394	0.340	15.80
Suzhou Thermal Power	0.784	0.789	(0.67)
Nanjing Thermal Power	0.168		
Rudong Offshore Wind Power	0.002		
Luhe Wind Power	0.001		
Tongshan Wind Power	0.082		
Shanghai Municipality			
Shidongkou I	4.971	5.060	(1.76)
Shidongkou II	5.385	5.252	2.53
Shidongkou Power	6.133	6.039	1.56
Shanghai CCGT	1.649	1.775	(7.11)
Chongqing Municipality			
Luohuang	8.154	9.767	(16.51)
Liangjiang CCGT	1.862	0.938	98.50
Zhejiang Province			
Yuhuan	18.469	18.957	(2.57)
Changxing	5.702	5.438	4.85
Tongxiang CCGT	0.518	0.270	91.87
Changxing Photovoltaic	0.009	0.008	13.87
Hongqiao Photovaltaic	0.012		
Hunan Province			
Yueyang	7.444	7.859	(5.28)
Xiangqi Hydropower	0.334	0.363	(7.94)
Subaoding Wind Power	0.328	0.318	3.03
Guidong Wind Power	0.209	0.069	203.56

Domestic Power Plant	Power generation in 2016	Power generation in 2015	Change (%)
Hubei Province			
Enshi Maweigou Hydropower	0.178	0.063	182.12
Jingmen Thermal Power	2.335	1.930	20.99
Yingcheng Thermal Power	1.418	1.062	33.50
Wuhan Power Plant	9.850	10.027	(1.77)
Dalongtan Hydropower	0.116	0.086	35.18
Jieshan Wind Power	0.188	0.054	248.65
Jiangxi Province			
Jinggangshan	8.095	8.993	(9.98)
Jianggongling Wind Power	0.107	0.090	19.14
Ruijin Power	3.060	3.289	(6.95)
Anyuan Power	6.179	3.015	104.93
Anhui Province			
Chaohu Power Plant	5.617	5.847	(3.94)
Hualiangting Hydropower	0.140	0.129	8.66
Huaining Wind Power	0.089		
Fujian Province			
Fuzhou	7.677	10.892	(29.52)
Guangdong Province			
Shantou	4.476	4.550	(1.62)
Haimen	5.326	7.631	(30.20)
Haimen Power	7.643	8.770	(12.86)
Shantou Photovoltaic	0.007		
Yunnan Province			
Diandong Energy	3.317	3.994	(16.96)
Yuwang Energy	0.268	1.585	(83.12)
Fuyuan Wind Power	0.299	0.147	103.21
Guizhou Province			
Panxian Wind Power	0.045	0.0003	16515.56
Hainan Province			
Haikou Power Plant	4.842	7.047	(31.30)
Dongfang Power Plant	6.687	9.081	(26.37)
Nanshan Power Plant	0.127	0.248	(48.64)
Gezhen Hydropower	0.164	0.093	75.99
Wenchang Wind Power	0.101	0.099	1.93
Dongfang Photovoltaic	0.008		
Total	3,136.90	320.529	(2.13)

For the year ended December 31, 2016, the accumulated power generation of Tuas Power Ltd., the Company's wholly owned subsidiary in Singapore, accounted for a market share of 21.5% in Singapore, representing a decrease of 0.2% compared to the same period last year of 21.7%.

In respect of the tariff, the Company's average tariff of domestic power plants for the year ended December 31, 2015 was RMB396.60 per MWh, down by RMB46.66 per MWh from the year ended December 31, 2015. SinoSing Power's average tariff for 2016 was RMB514.00 per MWh, representing a decrease of 17.88% from the same period last year.

In respect of fuel costs, the effective cost controls of the Company contributed to reduced fuel costs of the Company. Compared with 2015, the Company's fuel cost per unit of power sold of domestic power plant decreased by 1.76% to RMB170.62 per MWh.

Combining the forgoing factors, for the year ended December 31, 2016, the Company recorded an operating revenue of RMB113.814 billion, representing a decrease of 11.71% from RMB128.905 billion of last year, and the net profit attributable to equity holders of the Company of RMB8.520 billion, representing a decrease of 37.59% from RMB13.652 billion of last year.

For the year ended December 31, 2016, the net profit attributable to equity holders of the Company from domestic operations was RMB8.760 billion, representing a decrease of RMB4.951 billion from RMB13.711 billion for the same period last year. The decrease was primarily attributable to the decreases of on-grid tariff for coal-fired power generator administered by the NDRC, the decreases of domestic power generation of the Company and the increase of volume of market power transactions. The net loss attributable to equity holders of the Company from its operations in Singapore was RMB240 million, representing an increase of RMB181 million compared to the same period last year.

Operating revenue and tax and levies on operations

Operating revenue mainly consists of revenue from electricity sold. For the year ended December 31, 2016, the consolidated operating revenue of the Company and its subsidiaries amounted to RMB113.814 billion, representing a decrease of 11.71% from RMB128.905 billion for the year ended December 31, 2015. The operating revenue from domestic operations of the Company decreased by RMB13.706 billion over the same period of last year, while the operating revenue generated from newly acquired entities and newly operated generating units was RMB3.525 billion. In 2016, the operating revenue from the operations of the Company in Singapore decreased by RMB1.385 billion over the same period of last year, which was mainly attributed to the continued oversupply in the Singapore power and natural gas market, causing continued decline of electricity tariff and a drop of the operating revenue.

The following table sets forth the average tariff rate of the Company's power plants, as well as percentage changes from 2015 to 2016.

	Average tariff rate (VAT inclusive) (RMB/MWh)		
Power Plant	2016	2015	Change (%)
Liaoning Province			
Dalian	346.76	375.55	(7.67)
Dandong	352.52	371.45	(5.10)
Yingkou	344.71	378.32	(8.88)
Yingkou Co-generation	331.39	365.04	(9.22)
Wafangdian Wind Power	603.72	598.12	0.94
Suzihe Hydropower	332.67	329.96	0.82
Changtu Wind Power	626.09	590.93	5.95
Dandong Photovoltaic	950.00	—	—
Yingkon Co-generation Photovoltaic	950.00	—	—
Inner Mongolia Autonomous Region			
Huade Wind Power	471.22	520.00	(9.38)
Hebei Province			
Shang'an	358.48	401.79	(10.78)
Kangbao Wind Power	554.60	538.14	3.06
Kangbao Photovoltaic	784.95	—	—
Gansu Province			
Pingliang	207.63	259.51	(19.99)
Jiuquan Wind Power	367.54	473.12	(22.32)
Jiuquan II Wind Power	402.36	497.75	(19.16)
Yumen Wind Power	390.06	472.01	(17.36)
Yigang Wind Power	447.65	—	—
Beijing Municipality			
Beijing Co-generation (Coal-fired)	454.99	480.70	(5.35)
Beijing Co-generation (Combined Cycle)	687.33	959.91	(28.40)
Tianjin Municipality			
Yangliuqing Co-generation	370.82	416.54	(10.980
Lingang Co-generation CCGT	726.44	817.57	(11.15)
Shanxi Province			
Yushe	253.01	334.87	(24.45)
Zuoquan	252.96	333.25	(24.09)
Dongshan CCGT	682.40	703.80	(3.04)
Shandong Province			
Dezhou	389.78	445.44	(12.50)
Jining	372.57	429.20	(13.19)
Xindian	381.58	432.30	(11.73)
Weihai	382.53	440.45	(13.15)
Rizhao Phase II	372.08	422.33	(11.90)
Zhanhua Co-generation	389.33	424.66	(8.32)
Henan Province			
Qinbei	354.30	401.65	(11.79)
Luoyang Co-generation	365.91	384.33	(4.79)

	Average tariff rate (VAT inclusive) (RMB/MWh)		
Power Plant	2016	2015	Change (%)
Luoyang Yangguang	316.83	365.10	(13.22)
Mianchi Co-generation	328.10	—	—
Guoji Wind Power	610.00	—	—
Jiangsu Province			
Nantong	407.55	430.98	(5.44)
Nanjing	400.81	453.08	(11.540
Taicang I	349.31	387.68	(9.90)
Taicang II	349.31	387.68	(9.90)
Huaiyin	433.30	450.81	3.88
Jinling Coal-fired	348.86	385.24	(9.44)
Jinling Combined-Circle	708.41	712.13	(0.52)
Jinling Combined-Cycle Cogeneration	617.12	760.99	(18.91)
Suzhou Thermal Power	453.42	489.38	(7.35)
Qidong Wind Power	553.91	556.76	(0.51)
Rudong Wind Power	606.24	610.00	(0.62)
Nanjing Thermal Power	445.21	—	—
Tonngshan Wind Power	610.00	—	—
Shanghai Municipality			
Shidongkou I	395.18	435.48	(9.25)
Shidongkou II	380.60	410.35	(7.25)
Shanghai CCGT	382.31	937.13	(59.20)
Shidongkou Power	899.62	427.42	110.48
Chongqing Municipality			
Luohuang	376.92	427.84	(11.90)
Liangjiang CCGT	649.74	872.20	(25.51)
Zhejiang Province			
Yuhuan	403.82	452.99	(10.85)
Changxing	420.54	487.93	(13.81)
Tongxiang Combined-cycle	887.70	1,278.17	(0.55)
Changxing Photovoltaic	1,208.23	1,125.67	7.33
Hongqiao Photovoltaic	980.00	—	—
Hunan Province			
Yueyang	449.87	480.55	(6.38)
Xiangqi Hydropower	610.00	410.00	48.78
Subaoding Wind Power	610.00	611.72	(0.28)
Guidong Wind Power	404.19	610.00	(33.74)
Hubei Province			
Enshi Maweigou Hydropower	380.43	379.26	0.31
Jingmen Thermal Power	378.97	444.09	(14.66)
Yingcheng Thermal Power	392.73	477.26	(17.71)
Wuhan Power	376.53	435.47	(13.53)
Dalongtan Hydropower	376.38	374.80	0.42
Jieshan Wind Power	610.00	610.00	—

	Average tariff rate (VAT inclusive) (RMB/MWh)		
Power Plant	2016	2015	Change (%)
Jiangxi Province			
Jinggangshan	399.06	443.73	(10.0)
Jianggongling Wind Power	610.00	610.00	—
Ruijin Power	399.27	441.24	(9.51)
Anyuan Power	400.98	424.63	(5.57)
Anhui Province			
Chaohu Power	351.24	409.79	(14.29)
Hualiangting Hydropower	385.60	392.89	(1.86)
Huaining Wind Power	610.00	—	—
Fujian Province			
Fuzhou	348.95	392.29	(11.05)
Guangdong Province			
Shantou Coal-fired	464.69	498.01	(6.69)
Haimen	440.21	483.38	(8.93)
Haimen Power	444.53	485.46	(8.43)
Shantou Photovoltaic	980.00	—	—
Yunnan Province			
Diandong Energy	513.58	435.58	17.91
Yuwang Energy	1,394.49	545.42	155.67
Fuyuan Wind Power	494.71	600.61	(17.63)
Guizhou Province			
Panxian Wind Power	610.00	—	—
Hainan Province			
Haikou	420.45	457.71	(8.14)
Dongfang	420.90	460.53	(8.61)
Nanshan Combined Cycle	672.26	629.32	6.82
Gezhen Hydropower	400.07	399.78	0.07
Wenchang Wind Power	609.78	571.95	6.61
Dongfang Photovoltaic	1,010.00	—	—
Domestic total	396.60	443.26	(10.53)
Singapore			
SinoSing Power	514.00	625.88	(17.88)

Note: The tariff of combined-cycle power plants in Shanghai and Tongxiang consists of on-grid settlement price and capacity subsidy income.

Tax and levies on operations mainly consist of surcharges of value added tax. According to relevant administrative regulations, these surcharges include City Construction Tax and Education Surcharges calculated at prescribed percentages on the amounts of the value-added tax paid. For the year ended December 31, 2016, the tax and levis on operations of the Company and its subsidiaries were RMB1.178 billion, representing an increase of RMB20 million from RMB1.158 billion for the same period of last year, of which the tax and levies on operations attributable to newly acquired entities and new generating units accounted for RMB14 million.

Operating expenses

For the year ended December 31, 2016, the total operating expenses of the Company and its subsidiaries was RMB94.259 billion, representing a decrease of 4.41% from the same period last year. The operating expenses in domestic operations of the Company decreased by RMB2.823 billion, or 3.19%, from the same period last year, of

which the newly acquired entities and the new generating units accounted for RMB2.945 billion; the costs attributable to the existing entities decreased by RMB5.768 billion, which was primarily attributable to the decreased fuel costs for domestic operations in China.

The operating expenses from operations in Singapore operations decreased by RMB1.522 billion, or 14.89%, from the same period last year, which was mainly due to the decline of fuel costs resulting from decreased natural gas price.

Fuel costs

Fuel costs account for the majority of the operating expenses for the Company and its subsidiaries. For the year ended December 31, 2016, fuel costs of the Company and its subsidiaries decreased by 4.43% to RMB56.618 billion from the RMB59.242 billion for the year ended December 31, 2015. The fuel costs from domestic operations of the Company and its subsidiaries decreased by RMB1.603 billion, which was primarily attributable to the decreased power generation in the domestic market. The fuel costs of the newly acquired entities and new generating units were RMB2.043 billion and the fuel costs of the existing generating units decreased by RMB3.646 billion from same period last year. Fuel costs in Singapore decreased by RMB1.022 billion from the same period last year, mainly due to decreased fuel costs arising from decreased natural gas prices. For the year ended December 31, 2016, the average price (excluding tax) of natural fuel coal consumed of the Company and its domestic subsidiaries was RMB376.30 per ton, representing a 2.73% increase from RMB366.30 per ton for the year ended December 31, 2015. The fuel cost per unit of power sold by the Company's domestic power plants decreased by 1.76% to RMB170.62/MWh from RMB173.67/MWh in 2015.

Maintenance

For the year ended December 31, 2016, the maintenance expenses of the Company and its subsidiaries amounted to RMB4.343 billion, representing a decrease of RMB213 million from RMB4.556 billion for the year ended December 31, 2015. The maintenance expenses of the Company's domestic operations decreased by RMB225 million compared to the same period last year. The maintenance expenses of operations in Singapore increased by RMB12 million compared to the same period last year.

Depreciation

For the year ended December 31, 2016, depreciation expenses of the Company and its subsidiaries increased by 2.80% to RMB14.816 billion, compared to RMB14.412 billion in the year ended December 31, 2015; the increase is mainly due to the expansion of the Company's operations. The depreciation expenses of domestic operations increased by RMB397 million compared to the same period last year, of which the depreciation costs incurred by the newly acquired entities and new generating units was RMB605 million. The depreciation expenses of the operations in Singapore increased by RMB7 million compared to the same period last year.

Labor

Labor costs consist of salaries to employees and contributions payable for employees' housing funds, medical insurance, pension and unemployment insurance, as well as training costs. For the year ended December 31, 2016, the labor costs of the Company and its subsidiaries amounted to RMB8.043 billion, representing an increase of RMB291 million from RMB7.752 billion for the year ended December 31, 2015. This is mainly attributable to labor costs of the newly acquired entities and new generating units, which were RMB164 million. Labor costs for Singapore operations increased by RMB14 million compared to the same period last year.

Other operating expenses (including electricity power purchase costs and service fees paid to HIPDC)

Other operating expenses include environmental protection expenses, land fee, insurance premiums, office expenses, amortization, Tuas Power's electricity power purchase costs, impairment losses, government subsidies and net losses on disposal of properties, plant and equipment. For the year ended December 31, 2016, other operating expenses (including electricity power purchase costs and service fees paid to HIPDC) of the Company and its subsidiaries was RMB10.439 billion, representing a decrease of RMB2.203 billion from RMB12.642 billion for the year ended December 31, 2015. The other operating expenses from the Company's domestic operations decreased by RMB1.669 billion; other operating expenses of the existing entities decreased by RMB1.650 billion

compared to the same period last year. The impairment loss experienced a decrease of RMB1.886 billion compared to the same period last year.

Other operating expenses of the operations in Singapore decreased by RMB534 million compared to the same period last year. The electricity power purchase cost decreased by RMB523 million compared to the same period last year, which was largely due to the decreased price of electricity in retail business.

Financial expenses

Financial expenses consist of interest expense, bank charges and net exchange differences.

Interest expenses

For the year ended December 31, 2016, the interest expenses of the Company and its subsidiaries were RMB6.818 billion, representing a decrease of 14.20% from RMB7.946 billion for the year ended December 31, 2015. The interest expenses from the Company's domestic operations decreased by RMB1.157 billion. The interest expenses from the newly acquired entities and new generating units were RMB303 million and those incurred by the existing entities in China decreased by RMB1.460 billion, which is largely attributable to decreased benchmark interest rate of RMB.

The interest expenses of Singapore operations increased by RMB29 million compared to the same period last year.

Net exchange differences and bank charges

For the year ended December 31, 2016, the Company and its subsidiaries recorded a net loss of RMB250 million in net exchange losses and bank charges, representing a net loss increase of RMB226 million compared with the net loss of RMB24 million for the year ended December 31, 2015, mainly due to the weakened exchange rate of RMB against U.S. dollar.

The operations in Singapore recorded net gains of RMB50 million from net exchange difference and bank charges, representing a decrease of RMB120 million from the net gains of RMB170 million for the year ended December 31, 2015, mainly due to the strengthened exchange rate of U.S. dollar against Singapore dollar.

Share of profits less losses of associates and joint ventures

For the year ended December 31, 2016, the share of profits less losses of associates and joint ventures was RMB1.299 billion, representing a decrease of RMB227 million from RMB1.526 billion from last year, mainly due to decreased profit of associates and joint ventures.

Income tax expenses

For the year ended December 31, 2016, the Company and its subsidiaries recognised income tax expense of RMB3.465 billion, representing a decrease of RMB2.234 billion from RMB5.699 billion for the year ended December 31, 2015. The income tax expenses for the domestic operations decreased by RMB2.445 billion primarily attributable to the decrease of pre-tax profit.

The income tax expenses of the operations in Singapore increased by RMB211 million. It is mainly due to RMB204 million of income tax credit granted by Singapore government last year and no such tax credit was granted in the current year.

Net profit, net profit attributable to the equity holders of the Company and non-controlling interests

For the year ended December 31, 2016, the Company and its subsidiaries achieved a net profit of RMB10.348 billion, representing a decrease of RMB6.911 billion, or 40.04% from RMB17.259 billion for the year ended December 31, 2015; the net profit attributable to equity holders of the Company was RMB8.520 billion, representing a decrease of RMB5.132 billion from RMB13.652 billion for the year ended December 31, 2015.

The net profit attributable to equity holders of the Company from its domestic operations decreased by RMB4.951 billion, mainly contributable to lowered on-grid tariff for coal-fired power generators administered by the NDRC, reduced domestic power generation of the Company and increased volume of market power transactions. The net loss attributable to equity holders of the Company from its operations in Singapore was RMB240 million, representing an increase of RMB181 million from the same period last year. This was mainly due to commenced operation of many generators during the recent years, which led to the continued oversupply in the Singapore's power and natural gas market and subsequently continued reduction of power tariff and a marked drop in the profitability of the Company's overseas power generation business.

The Company's recorded net profit attributable to non-controlling interests decreased to RMB1.828 billion for the year ended December 31, 2016 from RMB3.607 billion for the year ended December 31, 2015, mainly attributable to reduced profit of the Company's non-wholly owned subsidiaries.

Year ended December 31, 2015 compared with year ended December 31, 2014

	For the Year Ended December 31,		
	2015 RMB'000	2014 RMB'000	Increased/ (Decreased) %
Operating revenue	128,904,873	125,406,855	2.79
Tax and levies on operations	(1,157,760)	(932,485)	24.16
Operating expenses			
Fuel	(59,242,367)	(64,762,908)	(8.52)
Maintenance	(4,556,361)	(3,729,912)	22.16
Depreciation	(14,411,632)	(11,646,683)	23.74
Labor	(7,751,551)	(6,259,588)	23.83
Service fees on transmission and transformer facilities of HIPDC	(140,771)	(140,771)	0.00
Purchase of electricity	(3,581,517)	(5,055,076)	(29.15)
Others	(8,919,988)	(7,604,790)	17.29
Total operating expenses	(98,604,187)	(99,199,728)	(0.60)
Profit from operations	29,142,926	25,274,642	15.31
Interest income	160,723	159,550	0.74
Financial expenses, net			
Interest expense	(7,945,734)	(7,814,114)	1.68
Exchange gain and bank charges , net	(24,336)	(9,492)	156.38
Total financial expenses, net	(7,970,070)	(7,823,606)	1.87
Share of profits less losses of associates and joint ventures	1,525,975	1,315,876	15.97
(Loss) / gain on fair value changes of financial assets / liabilities	(16,742)	42,538	(139.36)
Other investment income	115,238	80,580	43.01
Profit before income tax expense	22,958,050	19,049,580	20.52
Income tax expense	(5,698,943)	(5,487,208)	3.86
Net Profit	17,259,107	13,562,372	27.26
Attributable to:			
-Equity holders of the Company	13,651,933	10,757,317	26.91
-Non-controlling interests	3,607,174	2,805,055	28.60

Total power generated by the Company's domestic operating power plans for the year on consolidated basis amounted to 320.529 billion kWh, representing an increase of 8.9% year-on-year. The electricity sold amounted to 301.979 billion kWh, representing an increase of 8.8% year-on-year. Newly acquired entities and newly operated generating units mainly contributed to the power generation growth of the Company.

The annual average utilization hours of the Company's domestic power plants reached 4,147 hours. In most of the areas where the Company's coal-fired power plants are located, the utilization hours of the Company was in a leading position within those areas.

In January 2015, the Company completed the acquisition under common control of the subsidiaries of Huaneng Group including Huaneng Hainan Power Inc. ("Hainan Power"), Huaneng Wuhan Power Generation Co., Ltd. ("Wuhan Power"), Huaneng Suzhou Thermal Power Co., Ltd. ("Suzhou Thermal Power"), Enshi Qingjiang Dalongtan Hydropower Development Co., Ltd. ("Dalongtan Hydropower") and Huaneng Hualiangting Hydropower Co., Ltd. ("Hualiangting Hydropower"), and the subsidiaries of HIPDC including Huaneng Chaohu Power

Generation Co., Ltd. ("Chaohu Power"), Huaneng Ruijin Power Generation Co., Ltd. ("Ruijin Power"), Huaneng Anyuan Power Generation Co., Ltd. ("Anyuan Power"), Huaneng Jingmen Thermal Power Co., Ltd. ("Jingmen Thermal Power") and Huaneng Yingcheng Thermal Power Co., Ltd. ("Yingcheng Thermal Power") (collectively, the "Newly Acquired Entities"). The aforementioned entities were included in the consolidated financial statements.
The power generation of the Company's domestic power plants for the year ended December 31, 2015 is listed below (in billion kWh):

Domestic Power Plant	Power generation in 2015	Power generation in 2014	Change
Liaoning Province			
Dalian	5.921	6.423	(7.82)%
Dandong	3.050	3.197	(4.60)%
Yingkou	7.875	7.980	(1.32)%
Yingkou Co-generation	3.085	3.043	1.38 %
Wafangdian Wind Power	0.094	0.099	(5.05)%
Suzihe Hydropower	0.051	0.040	27.50 %
Changtu Wind Power	0.196	0.127	54.33 %
Inner Mongolia Autonomous Region			
Huade Wind Power	0.193	0.217	(11.06)%
Hebei Province			
Shang'an	12.519	12.836	(2.47)%
Kangbao Wind Power	0.097	0.085	14.12 %
Gansu Province			
Pingliang	6.020	9.129	(34.06)%
Jiuquan Wind Power	0.438	0.838	(47.73)%
Jiuquan II Wind Power	0.444	0.039	1038.46%
Yumen Wind Power	0.150	-	-
Yigang Wind Power	0.001	-	-
Beijing Municpality			
Beijing Co-generation	3.924	4.456	(11.94)%
Beijing Co-generation CCGT	4.159	4.051	2.67 %
Tianjin Municipality			
Yangliuqing Co-genertion	5.427	6.572	(17.42)%
Lingang CCGT Co-generation	1.966	0.126	1460.32%
Shanxi Province			
Yushe	2.750	2.608	5.44 %
Zuoquan	5.625	5.999	(6.23)%
Dongshan CCGT	1.139	-	-
Shandong Province			
Dezhou	14.388	15.348	(6.25)%
Jining	4.893	5.096	(3.98)%
Xindian	3.158	3.303	(4.39)%
Weihai	10.894	11.771	(7.45)%
Rizhao Phase II	7.499	8.236	(8.95)%
Zhanhua Co-generation	1.503	1.674	(10.22)%
Henan Province			
Qinbei	18.710	20.366	(8.13)%
Luoyang Co-generation	1.485	-	-

Domestic Power Plant	Power generation in 2015	Power generation in 2014	Change
Jiangsu Province			
Nantong	6.167	6.752	(8.66)%
Nanjing	2.736	3.154	(13.25)%
Taicang	10.081	11.174	(9.78)%
Huaiyin	5.813	6.486	(10.38)%
Jinling CCGT	2.581	1.895	36.20 %
Jinling Coal-fired	11.728	11.567	1.39 %
Jinling Co-generation	1.711	1.358	25.99 %
Rudong Wind Power	0.095	0.113	(15.93)%
Qidong Wind Power	0.340	0.379	(10.29)%
Suzhou Thermal Power	0.789	0.806	(2.1)%
Shanghai Municipality			
Shidongkou I	5.060	5.665	(10.68)%
Shidongkou II	5.252	5.190	1.19 %
Shidongkou Power	6.039	6.018	0.35 %
Shanghai CCGT	1.775	2.097	(15.36)%
Chongqing Municipality			
Luohuang	9.767	10.862	(10.08)%
Liangjiang CCGT	0.938	0.246	281.30 %
Zhejiang Province			
Yuhuan	18.957	21.771	(12.93)%
Changxing	5.438	0.488	1014.34%
Tongxiang CCGT	0.270	0.171	57.89 %
Changxing Photovoltaic	0.008	-	-
Hunan Province			
Yueyang	7.859	8.553	(8.11)%
Xiangqi Hydropower	0.363	0.310	17.10 %
Subaoding Wind Power	0.318	0.020	1490.00%
Guidong Wind Power	0.069	-	-
Hubei Province			
Enshi Maweigou Hydropower	0.063	0.042	50.00 %
Jingmen Thermal Power	1.930	0.530	264.1 %
Yingcheng Thermal Power	1.062	-	-
Wuhan Power Plant	10.027	9.760	2.7 %
Dalongtan Hydropower	0.086	0.102	(15.8)%
Jieshan Wind Power	0.054	-	-
Jiangxi Province			
Jinggangshan	8.993	9.244	(2.72)%
Jianggongling Wind Power	0.090	0.001	8900.00%
Ruijin Power	3.289	3.329	(1.2)%

Domestic Power Plant	Power generation in 2015	Power generation in 2014	Change
Anyuan Power	3.015	-	-
Anhui Province			
Chaohu Power Plant	5.847	6.807	(14.1)%
Hualiangting Hydropower	0.129	0.097	32.9 %
Fujian Province			
Fuzhou	10.892	13.925	(21.78)%
Guangdong Province			
Shantou	4.550	5.200	(12.50)%
Haimen	7.631	12.270	(37.81)%
Haimen Power	8.770	6.152	42.56 %
Yunnan Province			
Diandong Energy	3.994	5.953	(32.91)%
Yuwang Energy	1.585	3.651	(56.59)%
Fuyuan Wind Power	0.147	0.022	568.18 %
Guizhou Province			
Panxian Wind Power	0.0003	-	-
Hainan Province			
Haikou Power Plant	7.047	6.424	9.7 %
Dongfang Power Plant	9.081	10.079	(9.9)%
Nanshan Power Plant	0.248	0.273	(9.0)%
Gezhen Hydropower	0.093	0.202	(53.9)%
Wenchang Wind Power	0.099	0.083	19.4 %
Total	320.529	294.388	8.9 %

The Company's growth of power generation within China mainly originated from the capacity contribution from the Newly Acquired Entities and power plants newly put into production. The main reasons for the decrease in some of the Company's power plants are as follows: firstly, as a result of the slowdown of the economy and the deepening of China's economic restructuring, nation-wide electricity consumption in China declined, which led to the decrease of utilization hours. Secondly, the commencement of operations of multiple West-to-East UHV transmission lines has squeezed the generation potential of thermal power generators in the coastal regions in southeastern China. Thirdly, the lower temperature in summer 2015 resulted in lower electricity demand for cooling, while the heating demand in winter also failed to increase significantly. Fourthly, the commencement of operation of many nuclear power units in Liaoning, Zhejiang, Fujian and other provinces reduced the power output of the thermal power generating units in such regions. For the year ended December 31, 2015, the accumulated power generation of Tuas Power Ltd., the Company's wholly owned subsidiary in Singapore, accounted for a market share of 21.7% in Singapore, representing a decrease of 0.1% compared to the same period last year of 21.8%.

In respect of the tariff, the Company's average tariff of domestic power plants for the year ended December 31, 2015 was RMB443.26 per MWh, down by RMB11.69 per MWh from the year ended December 31, 2014.

SinoSing Power's average tariff for 2015 was RMB625.88 per MWh, representing a decrease of 32.02% from the same period last year.

In respect of fuel costs, the decrease of coal market price and effective cost control of the Company contributed to reduced fuel costs of the Company. Compared with 2014, the Company's domestic fuel cost per unit of power sold decreased by 13.68% to RMB173.67 per MWh.

Combining the foregoing factors, for the year ended December 31, 2015, the Company registered operating revenue of RMB128.905 billion, representing an increase of 2.79% from RMB125.407 billion of last year, and net profit attributable to equity holders of RMB13.652 billion, representing an increase of 26.91% from RMB10.757 billion of last year.

For the year ended December 31, 2015, the profit attributable to equity holders of the Company from domestic operations was RMB13.711 billion, representing an increase of RMB3.082 billion from RMB10.629 billion for the same period last year. The increase was primarily attributable to the decrease of domestic fuel costs and the profits contributed by the Newly Acquired Entities and the operation of new generating units. The loss attributable to equity holders of the Company from its operations in Singapore was RMB59 million. This is because of the continued oversupply in Singapore's power market as result of commenced operations of many generators during the recent years, which led to a continued reduction of local power tariff and significantly decreased the profit margin per unit of power sold.

Operating revenue and tax and levies on operations

Operating revenue mainly consists of revenue from electricity sold. For the year ended December 31, 2015, the consolidated operating revenue of the Company and its subsidiaries amounted to RMB128.905 billion, representing an increase of 2.79% from RMB125.407 billion for the year ended December 31, 2014. The operating revenue from domestic operations of the Company increased by RMB7.725 billion over the same period of last year, while the operating revenue from the Newly Acquired Entities and the operation of new generating units was RMB21.228 billion.

The operating revenue from operations of the Company in Singapore decreased by RMB4.227 billion over the same period of last year, which was mainly attributable to the continued oversupply in Singpore's power market, which has led to continued decline of the profit margin per unit of power sold.

The following table sets forth the average tariff rate of the Company's power plants, as well as percentage changes from 2014 to 2015.

	Average tariff rate (VAT inclusive) (RMB/MWh)		
Power Plant	2015	2014	Change
Liaoning Province			
Dalian	375.55	394.50	(4.80)%
Dandong	371.45	393.06	(5.50)%
Yingkou	378.32	399.33	(5.26)%
Yingkou Co-generation	365.04	399.21	(8.56)%
Wafangdian Wind Power	598.12	609.68	(1.90)%
Suzihe Hydropower	329.96	330.00	(0.01)%
Changtu Wind Power	590.93	602.82	(1.97)%
Inner Mongolia Autonomous Region			
Huade Wind Power	520.00	520.00	—
Hebei Province			
Shang'an	401.79	429.39	(6.43)%
Kangbao Wind Power	538.14	538.84	(0.13)%
Gansu Province			
Pingliang	259.51	322.72	(19.59)%
Jiuquan Wind Power	473.12	520.60	(9.12)%
Jiuquan II Wind Power	497.75	540.00	(7.82)%
Yumen Wind Power	472.01	520.60	(9.33)%
Beijing Municipality			

Beijing Co-generation (Coal-fired)	480.70	514.71	(6.61	)%
Beijing Co-generation (Combined Cycle)	959.91	882.33	8.79	%

Power Plant	Average tariff rate (VAT inclusive) (RMB/MWh) 2015	2014	Change
Tianjin Municipality			
Yangliuqing Co-generation	416.54	434.28	(4.08)%
Lingang Co-generation CCGT	817.57	—	—
Shanxi Province			
Yushe	334.87	391.22	(14.40)%
Zuoquan	333.25	382.01	(12.76)%
Dongshan CCGT	703.80	—	—
Shandong Province			
Dezhou	445.44	463.36	(3.87)%
Jining	429.20	446.73	(3.92)%
Xindian	432.30	448.55	(3.65)%
Weihai	440.45	461.18	(4.49)%
Rizhao Phase II	422.33	441.59	(4.36)%
Zhanhua Co-generation	424.66	434.71	(2.31)%
Henan Province			
Qinbei	401.65	435.42	(7.76)%
Luoyang Co-generation	384.33	—	—
Jiangsu Province			
Nantong	430.98	436.00	(1.15)%
Nanjing	453.08	436.50	3.80 %
Taicang I	387.68	419.19	(7.52)%
Taicang II	387.68	395.38	(1.95)%
Huaiyin	450.81	443.04	1.75 %
Jinling Coal-fired	385.24	408.24	(5.63)%
Jinling Combined-Circle	712.13	606.21	17.47 %
Jinling Combined-Cycle Cogeneration	760.99	690.00	10.29 %
Suzhou Thermal Power	489.38	508.66	(3.79)%
Qidong Wind Power	556.76	555.92	0.15 %
Rudong Wind Power	610.00	610.00	0.00 %
Shanghai Municipality			
Shidongkou I	435.48	438.21	(0.62)%
Shidongkou II	410.35	437.54	(6.21)%
Shanghai CCGT	937.13	866.20	8.19 %
Shidongkou Power	427.42	449.92	(5.00)%
Chongqing Municipality			
Luohuang	427.84	440.21	(2.81)%
Liangjiang CCGT	872.20	—	—
Zhejiang Province			
Yuhuan	452.99	468.71	(3.35)%
Changxing	487.93	431.03	13.20 %
Tongxiang Combined-cycle	1,278.17	1,298.37	(1.56)%
Changxing Photovoltaic	1,125.67	—	—
Hunan Province			
Yueyang	480.55	495.31	(2.98)%
Xiangqi Hydropower	410.00	410.00	0.00 %
Subaoding Wind Power	611.72	494.00	23.83 %
Guidong Wind Power	610.00	—	—

Hubei Province				
Enshi Maweigou Hydropower	379.26	366.59	3.46	%
Jingmen Thermal Power	444.09	432.20	2.75	%
Yingcheng Thermal Power	477.26	—	—	
Wuhan Power	435.47	461.99	(5.74	)%
Dalongtan Hydropower	374.80	366.89	2.16	%
Jieshan Wind Power	610.00	—	—	
Jiangxi Province				
Jinggangshan	443.73	468.92	(5.37	)%
Jianggongling Wind Power	610.00	610.00	—	
Ruijin Power	441.24	466.57	(5.43	)%
AnyuanPower	424.63	—	—	
Anhui Province				
Chaohu Power Plant	409.79			