CHINA PETROLEUM & CHEMICAL CORP
Form 20-F
April 29, 2019
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 20-F

(Mark One)

o	**REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934**
	OR
x	**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934** **For the fiscal year ended DECEMBER 31, 2018**
	OR
o	**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
	OR
o	**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 1-15138

CHINA PETROLEUM & CHEMICAL CORPORATION

(Exact name of Registrant as specified in its charter)

The People s Republic of China
(Jurisdiction of incorporation or organization)

22 Chaoyangmen North Street

Chaoyang District, Beijing, 100728

The People s Republic of China
(Address of principal executive offices)

Mr. Huang Wensheng

22 Chaoyangmen North Street

Chaoyang District, Beijing, 100728

The People s Republic of China

Tel: +86 (10) 5996 0028

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(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 100 H Shares of par value RMB 1.00 per share	New York Stock Exchange, Inc.
H Shares of par value RMB 1.00 per share	New York Stock Exchange, Inc.*

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

Securities registered or to be registered pursuant to Section 12(g) of the Act.

None
(Title of Class)

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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.

H Shares, par value RMB 1.00 per share	25,513,438,600
A Shares, par value RMB 1.00 per share	95,557,771,046

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

x Yes o 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.

o Yes x 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.

x Yes o No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted 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 such files).

x Yes o No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or an emerging growth company. See definition of large accelerated filer, accelerated filer, and emerging growth company in Rule 12b-2 of the Exchange Act.

Large accelerated filer x   Accelerated filer o   Non-accelerated filer o   Emerging growth company o

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. o

The term new or revised financial accounting standard refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

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

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

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.

o Item 17 o 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).

o Yes x 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 Section 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. *

o Yes o No

* This requirement does not apply to the registrant in respect of this filing.

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CERTAIN TERMS AND CONVENTIONS

Definitions

Unless the context otherwise requires, references in this annual report to:

- Sinopec Corp., Company, we, our and us are to China Petroleum & Chemical Corporation, a PRC joint limited company, and its subsidiaries;
- Sinopec Group Company are to our controlling shareholder, China Petrochemical Corporation, a PRC limited liability company;
- Sinopec Group are to the Sinopec Group Company and its subsidiaries other than Sinopec Corp. and its subsidiaries;
- provinces are to provinces and to provincial-level autonomous regions and municipalities in China which are directly under the supervision of the central PRC government;
- RMB are to Renminbi, the currency of the PRC;
- HK$ are to Hong Kong dollar, the currency of the Hong Kong Special Administrative Region of the PRC; and
- US$ are to US dollars, the currency of the United States of America.

Conversion Conventions

Unless otherwise specified, conversion of crude oil from tonnes to barrels are made at a rate of one tonne to 7.10 barrels for crude oil we produced domestically and one tonne to 7.20, 7.21 and 7.21 barrels for the years ended December 31, 2016, 2017 and 2018, respectively, for crude oil we produced overseas. Conversions of natural gas from cubic meters to cubic feet are made at a rate of one cubic meter to 35.31 cubic feet; and 6,000 cubic feet of natural gas is converted to one BOE.

Glossary of Technical Terms

Unless otherwise indicated in the context, references to:

- BOE are to barrels-of-oil equivalent.

- primary distillation capacity are to the crude oil throughput capacity of a refinery s crude oil distillation units, calculated by estimating the number of days in a year that such crude oil distillation units are expected to operate, excluding downtime for regular maintenance, and multiplying that number by the amount equal to the units optimal daily crude oil throughput.

- rated capacity are to the output capacity of a given production unit or, where appropriate, the throughput capacity, calculated by estimating the number of days in a year that such production unit is expected to operate, excluding downtime for regular maintenance, and multiplying that number by an amount equal to the unit s optimal daily output or throughput, as the case may be.

CURRENCIES AND EXCHANGE RATES

We publish our financial statements in Renminbi. Unless otherwise indicated, all translations from Renminbi to US dollars in this annual report were made at RMB 6.6174 to US$1.00, the average of mid-point exchange rates of Renminbi as published by the PRC State Administration of Foreign Exchange (SAFE) for the year of 2018. We do not guarantee that the Renminbi or US dollar amount can be converted to US dollars or Renminbi, as appropriate, at this exchange rate or any specific exchange rate.

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FORWARD-LOOKING STATEMENTS

This annual report includes forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical facts, included in this annual report that address activities, events or developments which we expect or anticipate will or may occur in the future are hereby identified as forward-looking statements for the purpose of the safe harbor provided by Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. The words such as believe, intend, expect, anticipate, project, estimate, predict, plan and similar expressions are also intended to identify forward-looking statements. These forward-looking statements address, among others, such issues as:

- amount and nature of future exploration and development,
- future prices of and demand for our products,
- future earnings and cash flow,
- development projects and drilling prospects,
- future plans and capital expenditures,
- estimates of proved oil and gas reserves,
- exploration prospects and reserves potential,
- expansion and other development trends of the petroleum and petrochemical industry,
- production forecasts of oil and gas,
- expected production or processing capacities, including expected rated capacities and primary distillation

capacities, of units or facilities not yet in operation,

- expansion and growth of our business and operations, and
- our prospective operational and financial information.

These statements are based on assumptions and analyses made by us in light of our experience and perception of historical trends, current conditions and expected future developments, as well as other factors we believe are appropriate in particular circumstances. However, whether actual results and developments will meet our expectations and predictions depends on a number of risks and uncertainties which could cause actual results to differ materially from our expectations, including the risks set forth in Item 3. Key Information D. Risk Factors and the following:

- fluctuations in crude oil and natural gas prices,
- fluctuations in prices of our refined oil and chemical products,
- failures or delays in achieving production from development projects,
- potential acquisitions and other business opportunities,
- general economic, market and business conditions, and
- other risks and factors beyond our control.

Consequently, all of the forward-looking statements made in this annual report are qualified by these cautionary statements and readers are cautioned not to place undue reliance on these forward-looking statements. These forward-looking statements should be considered in light of the various important factors set forth above and elsewhere in this Form 20-F. In addition, we cannot assure you that the actual results or developments anticipated by us will be realized or, even if substantially realized, that they will have the expected effect on us or our business or operations.

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ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISORS

Not applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

ITEM 3. KEY INFORMATION

A. SELECTED FINANCIAL DATA

The selected consolidated statement of income data (except per ADS data) and consolidated cash flows data for the years ended December 31, 2016, 2017 and 2018, and the selected consolidated balance sheet data as of December 31, 2017 and 2018 are derived from, and should be read in conjunction with, the audited consolidated financial statements included elsewhere in this annual report. The selected consolidated statement of income data (except per ADS data) and consolidated cash flows data for the years ended December 31, 2014 and 2015 and the selected consolidated balance sheet data as of December 31, 2014, 2015 and 2016 are derived from our audited consolidated financial statements which are not included elsewhere in this annual report.

Moreover, the selected financial data should be read in conjunction with our consolidated financial statements and Item 5. Operating and Financial Review and Prospects included elsewhere in this annual report. Our consolidated financial statements are prepared and presented in accordance with International Financial Reporting Standards, or IFRS, as issued by the International Accounting Standards Board.

	Year Ended December 31,				
	2014	2015	2016	2017	2018
	(RMB in millions, except per share, per ADS data and number of shares)				
Consolidated Statement of Income Data(1)**:**					
Operating revenues	2,827,566	2,020,375	1,930,911	2,360,193	2,891,179
Operating expenses	(2,754,127)	(1,963,553)	(1,853,718)	(2,288,723)	(2,808,915)
Operating income	73,439	56,822	77,193	71,470	82,264
Earnings before income tax	65,818	56,411	80,151	86,697	99,110
Tax expense	(17,571)	(12,613)	(20,707)	(16,279)	(20,213)
Net income attributable to equity shareholders of the Company	46,639	32,512	46,672	51,244	61,618

Basic earnings per share(2)	0.399	0.269	0.385	0.423	0.509
Basic earnings per ADS(2)	39.92	26.90	38.55	42.33	50.89
Diluted earnings per share(2)	0.399	0.269	0.385	0.423	0.509
Diluted earnings per ADS(2)	39.89	26.90	38.55	42.33	50.89
Segment Operating Income/(Loss)					
Exploration and production	47,057	(17,418)	(36,641)	(45,944)	(10,107)
Refining	(1,954)	20,959	56,265	65,007	54,827
Marketing and distribution	29,449	28,855	32,153	31,569	23,464
Chemicals	(2,229)	19,476	20,623	26,977	27,007
Corporate and others	(1,063)	384	3,212	(4,484)	(9,293)
Elimination of inter-segment sales	2,179	4,566	1,581	(1,655)	(3,634)
Operating income	73,439	56,822	77,193	71,470	82,264
Shares					
Basic weighted average number of A and H shares	116,822,487,451	120,852,547,200	121,071,209,646	121,071,209,646	121,071,209,646
Diluted weighted average number of A and H shares	117,242,396,710	120,852,547,200	121,071,209,646	121,071,209,646	121,071,209,646

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	As of December 31,				
	2014	2015	2016	2017	2018
	(RMB in millions, except per share, per ADS data and number of shares)				
Consolidated Balance Sheet Data(1)**:**					
Cash and cash equivalents	10,526	68,933	124,468	113,218	111,922
Total current assets	361,559	333,657	412,261	529,049	504,120
Total non-current assets	1,094,035	1,113,611	1,086,348	1,066,455	1,088,188
Total assets	1,455,594	1,447,268	1,498,609	1,595,504	1,592,308
Total current liabilities	(604,451)	(462,832)	(485,543)	(579,446)	(565,098)
Short-term debts and loans from Sinopec Group Company and its affiliates (including current portion of long-term debts)	(178,148)	(115,446)	(74,819)	(80,649)	(61,127)
Long-term debts and loans from Sinopec Group Company and its affiliates (excluding current portion of long-term debts)	(150,932)	(139,746)	(117,446)	(99,124)	(93,527)
Total equity attributable to equity shareholders of the Company	(595,255)	(676,197)	(710,994)	(726,120)	(717,284)
Total equity	(649,603)	(788,161)	(831,235)	(852,890)	(856,535)
Cash dividends per share	0.200	0.150	0.249	0.500	0.420

	Year Ended December 31,				
	2014	2015	2016	2017	2018
	(RMB in millions, except per share, per ADS data and number of shares)				
Statement of Cash Flow and Other Financial Data(1)**:**					
Net cash generated from operating activities	148,019	165,740	214,543	190,935	175,868
Net cash generated from/(used in) financing activities	(21,524)	9,093	(93,047)	(56,509)	(111,260)
Net cash used in investing activities	(132,321)	(116,719)	(66,217)	(145,323)	(66,422)
Capital expenditure Exploration and production	80,196	54,710	32,187	31,344	42,155
Refining	27,957	15,132	14,347	21,075	27,908
Marketing and distribution	26,989	22,115	18,493	21,539	21,429
Chemicals	15,944	17,634	8,849	23,028	19,578
Corporate and others	3,648	2,821	2,580	2,398	6,906
Total	154,734	112,412	76,456	99,384	117,976

(1) The acquisition of 55% equity interest of Shanghai Gaoqiao Petrochemical Co., Ltd. (Gaoqiao) in 2016 from Sinopec Group Company were considered as combination of entities under common control and accounted in a manner of predecessor value accounting. Accordingly, the acquired assets and liabilities have been accounted for at historical cost and the consolidated financial statements for periods prior to the combinations have been restated to include the financial condition and results of operation of these acquired business on a combined basis.

(2) Basic earnings per share have been computed by dividing net income attributable to equity shareholders of our company by the weighted average number of shares in issue. Basic and diluted earnings per ADS have been computed as if all of our issued and authorized ordinary shares, including domestic shares and H shares, are represented by ADSs during each of the years presented. Each ADS represents 100 shares.

(3) On October 26, 2017, Gaoqiao purchased 50% equity interest in Shanghai SECCO from BP Chemicals East China Investment Limited with a cash consideration of RMB 10,135 million. Before the acquisition, we and one of our subsidiaries held 30% and 20% equity interest in Shanghai SECCO, respectively. Upon completion of the acquisition, we, together with our subsidiaries, hold 100% equity interest of Shanghai SECCO, which became a subsidiary of us.

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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 Operation

We are exposed to risks associated with price fluctuations of crude oil and refined oil products and petrochemical products.

We consume a large amount of crude oil to produce our refined oil products and petrochemical products. Increases in crude oil prices may result in cost inflation, and high prices may also reduce demand for our products which might adversely affect our profitability. Decreases in prices of crude oil, refined oil products and petrochemical products may cause us to incur impairment to our investment and assets. A prolonged period of low oil prices may impact our profit and ability to maintain our long-term investment projects. We use financial derivatives, including commodity futures, to hedge risks of the volatility in the crude oil price. The use of such financial derivatives may not successfully hedge all risks. The fair value of derivatives fluctuates due to the volatility of crude oil price, which in turn impacts our financial performance. In addition, while we try to adjust the sale prices of our products to reflect international crude oil price fluctuations, our ability to pass on the increased cost resulting from crude oil price increases to our customers may be limited, and is dependent on international and domestic market conditions as well as the PRC government s price control policies over refined oil products. For instance, the PRC government could exercise price control over refined oil products when international crude oil prices experience a sustained rise or become significantly volatile. As a result, our results of operations and financial condition may be materially affected by the fluctuation of prices of crude oil, refined oil products and petrochemical products.

Our continued business success depends in part on our ability to replace reserves and develop newly discovered reserves.

Our ability to achieve our growth objectives is dependent in part on our level of success in discovering or acquiring additional oil and natural gas reserves. Our exploration and development activities for additional reserves also expose us to inherent risks associated with drilling, including the risk that no proved oil or natural gas reserves might be discovered. Exploring for, developing and acquiring reserves is highly risky and capital intensive. The fluctuation in the prices of crude oil and natural gas will impact the amount of our proved oil or natural gas reserves. In the low oil price environment, only large scale, high quality reserves meet our development criteria, and some exploration projects may not be viable and thus cannot be carried forward, potentially leading to failure in supplementing our oil and natural gas reserves with additional reserves through future exploration. Without reserve additions through further exploration and development or acquisition activities, or if the prices of crude oil and natural gas fall sharply, our reserves and production will decline over time, which may materially and adversely affect our results of operations and financial condition.

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We rely heavily on outside suppliers for crude oil and other raw materials, and we may even experience disruption of our ability to obtain crude oil and other raw materials.

We purchased a significant portion of crude oil and other feedstock from outside suppliers located in different countries and regions in the world, of which certain amount of the crude oil processed by our refinery business was sourced from countries or regions that were on the sanction list published and administered by the Office of Foreign Assets Control, or OFAC, of the U.S. Department of Treasury, including Iran and Sudan. In addition, our business growth requires us to source an increasing amount of crude oil from outside suppliers. While we purposely source our crude oil from a diversified portfolio of outside suppliers to avoid any potential disruptions to our normal business operations, we are subject to the political, geographical and economic risks associated with these countries and areas. If our contractual relationships with one or more outside suppliers were terminated or disrupted due to any natural disasters or political events, it is possible that we would not be able to find sufficient alternative sources of supply in a timely manner or on commercially reasonable terms. As a result, our business and financial condition would be materially and adversely affected.

Starting from January 2016, the United States suspended most secondary sanctions (i.e., those covering non-U.S. persons) pursuant to the terms of the Joint Comprehensive Plan of Action (the JCPOA). In May 2018, the United States withdrew from the JCPOA. Effective on November 5, 2018, all U.S. sanctions on Iran including those on the crude oil and petrochemical sectors were re-imposed, with eight countries and regions including China granted temporary significant reduction exceptions as exemptions to such sanctions to allow the importation of crude oil from Iran, which is scheduled to expire on May 2, 2019. The United States government has recently made an announcement that such exemptions under the significant reduction exceptions would not be extended. If the relevant sanctions exemption cannot be continuously obtained, we may be unable to source crude oil from Iran or be subject to secondary sanctions resulting from continuing importing crude oil from Iran, which may have further adverse impact on us, including but not limited to being prohibited to conduct certain business and financing activities that relate to the United States, and in turn materially and adversely impact our ADS trading price, results of operations and financial status.

Our business faces operation risks and natural disasters that may cause significant property damages, personal injuries and interruption of operations, and we may not have sufficient insurance coverage for all the financial losses incurred by us.

Exploring for, producing and transporting crude oil and natural gas and producing and transporting refined oil products and petrochemical products involves a number of operating hazards. Our operations are subject to significant hazards and risks inherent in refining operations and in transporting and storing crude oil, intermediate products, refined oil products and chemical products. These hazards and risks include, but are not limited to, natural disasters, fires, explosions, pipeline ruptures and spills, third-party interference and mechanical failure of equipment at our or third-party facilities, any of which could result in production and distribution difficulties and disruptions, environmental pollution, personal injury or wrongful death claims and other damage to our properties and the property of others. There is also risk of mechanical failure and equipment shutdowns both in general and following unforeseen events. In certain situations, undamaged refinery processing units may be dependent on or interact with damaged process units and, accordingly, are also subject to being shut down. Even though we have a strong institutional focus on the safety of our operations and have implemented health, safety, security and environment (HSSE) management system within our company with the view to preventing accidents, and reducing personal injuries, property losses and environment pollution, our preventative measures may not be effective. We also maintain insurance coverage on our property, plant, equipment, inventory and potential third party liability, but our insurance coverage may not be sufficient to cover all the financial losses caused by the operation risks and natural disasters. Significant operating hazards and natural disasters may cause interruption to our operations, property or environmental damages as well as personal injuries, and each of these incidents could have a material adverse effect on our financial condition and results of operations.

The oil and natural gas reserves data in this annual report are only estimates, and our actual production, revenues and expenditures with respect to our reserves may differ materially from these estimates.

There are numerous uncertainties inherent in estimating quantities of proved oil and natural gas reserves, and in the timing of development expenditures and the projection of future rates of production. Adverse changes in economic conditions, such as a prolonged period of low oil prices, may render it uneconomical to develop certain reserves and lead to downward revisions in our reserves. Our actual production, revenues, taxes and fees payable and development and operating expenditures with respect to our reserves may likely vary from these estimates.

The estimate of reserves is influenced by, among other things:

- the quality and quantity of technical and economic data;

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- the prevailing oil and gas prices applicable to our production;
- the production performance of the reservoirs; and
- the production plans and etc.

In addition, new drilling, testing and production results following the estimates may cause substantial upward or downward revisions in the estimates.

Oilfield exploration and drilling involves numerous risks, including risks that no commercially productive crude oil or natural gas reserves can be discovered and risks of failure to acquire or retain reserves.

Our oil and gas business is currently involved in exploration activities in various regions, including in some areas where natural conditions may be challenging and where the costs of such exploration activities may be high. As a result, our oil and gas business may incur cost overruns or may be required to curtail, delay or cancel drilling operations because of many factors, including, but not limited to, the following:

- disruption caused by unexpected stratigraphic factors;
- irregularities in geological formations pressure;
- equipment failures;
- oil/gas well blowouts;
- adverse weather conditions or natural disasters;
- compliance with existing or enhanced environmental regulations;

- governmental requirements and standards; or

- delays in the availability of drilling rigs and delivery and maintenance of equipment.

The future production of our oil and gas business depends significantly upon our success in finding or acquiring additional reserves and retaining and developing such reserves. If our oil and gas business fails to conduct successful exploration activities or to acquire or retain assets holding proved reserves, it may not meet its production or growth targets, and its proved reserves will decline as it extracts crude oil and natural gas from the existing reservoirs, which could adversely affect our business, financial condition and results of operations.

We have been actively pursuing business opportunities outside China to supplement our domestic resources. However, there can be no assurance that we can successfully locate sufficient alternative sources of crude oil supply or at all due to the complexity of the international political, economic and other conditions. If we fail to obtain sufficient alternative sources of crude oil supply, our results of operations and financial condition may be adversely affected.

Our exploration, development and production activities and our refining and petrochemical business require substantial expenditure and investments and our plans for and ability to make such expenditures and investments are subject to various risks.

Exploring, developing and producing crude oil and natural gas fields are capital-intensive activities involving a high degree of risk. Our ability to undertake exploration, development and production activities and make the necessary capital expenditures and investments is subject to many risks, contingencies and other uncertainties, which may prevent our oil and gas business from achieving the desired results, or which may significantly increase the expenditures and investments that our oil and gas business makes, including, but not limited to, the following:

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- ability to generate sufficient cash flows from operations to finance its expenditures, investments and other requirements, which are affected by changes in crude oil and natural gas prices and sales volumes, and other factors;

- availability and terms of external financing;

- mix of exploration and development activities conducted on an independent basis and those conducted jointly with other partners;

- extent to which its ability to influence or adjust plans for exploration and development related expenditures is limited under joint operating agreements for those projects in which it has partners;

- government approvals required for exploration and development-related expenditures and investments in jurisdictions in which it conducts business; and

- economic, political and other conditions in jurisdictions in which it conducts business.

From time to time, we may construct new and/or revamp existing refining and petrochemical facilities, which require substantial capital expenditures and investments. There can be no assurance that the cash generated by our operations will be sufficient to fund these development plans or that our actual future capital expenditures and investments will not significantly exceed our current planned amounts. Our inability to obtain sufficient funding for development plans could adversely affect our business, financial condition and results of operations.

Our development projects and production activities involve many uncertainties and operating risks that can prevent us from realizing profits and cause substantial losses.

Our development projects and production activities may be curtailed, delayed or cancelled for many reasons, including equipment shortages or failures, natural hazards, unexpected drilling conditions, mechanical and technical difficulties caused by complex geological conditions and operating errors by our employees. These projects and activities, which include projects focused on non-conventional oil and gas exploration and development, will also often require the use of new and advanced technologies that may be expensive to develop, purchase and implement, and may not function as expected. There is a risk that any development projects that we undertake may not yield adequate returns. In addition, our development projects and production activities, particularly those in remote areas, could become less profitable, or unprofitable, if we experience a prolonged period of low oil or gas prices or cost overruns.

Our business may be adversely affected by actions and regulations prompted by global climate changes.

Many nations in the world have reached consensus on the importance and urgency of addressing climate change. The oil and gas industry in which we operate is drawing increasing concerns about global climate change in recent years. A number of international, national and regional measures to limit greenhouse gas emissions have been enacted. The Paris Agreement on climate change adopted by 195 nations in December 2015 has placed binding commitments on nations that have ratified it since November 2016, which may lead to more stringent national and regional measures in the near future. It could result in substantial impact on capital expenditure from compliance with these measures and revenue generation and strategic growth opportunities. In addition, China has undertaken to peak the CO2 emissions by 2030 or earlier, if possible, and to increase the non-fossil fuel share of all energy to around 20 percent by 2030. China has also implemented a national carbon emissions trading scheme in 2017, power generation industry has been included initially, and will gradually expand the industry coverage after the market matures. As most of our producing subsidiaries in China may be recognized as emission-control enterprises, such change could have certain effect on our business operations.

Our overseas businesses may be adversely affected by changes of overseas government policies and business environment.

We have operations and assets and may seek new opportunities in various countries and regions, including countries in Africa, South America and Central Asia and certain other regions, some of which are deemed to be subject to a high degree of political risk. The operations in these countries may experience political instability, changes to the regulatory environment, changes in taxation and foreign exchange controls, disease outbreaks, deterioration in social security and environmental risks. Any of these conditions occurring could disrupt or curtail our operations or development activities. These events may also cause our production to decline, limit our ability to pursue new opportunities, affect the recoverability of our assets or cause us to incur additional costs, particularly due to the long-term nature of many of our projects and the significant capital expenditure required.

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We may be classified as a passive foreign investment company for United States federal income tax purposes, which could result in adverse United States federal income tax consequences to United States investors in the H shares or ADSs.

Depending upon the value of our assets, which may be determined based, in part, on the market price of our H shares or ADSs, and the nature of our assets and income over time, we could be classified as a passive foreign investment company, or PFIC, for United States federal income tax purposes. Based on our income and assets and the market price of our H shares or ADSs, we do not believe that we were a PFIC for the taxable year ended December 31, 2018 and do not anticipate becoming a PFIC in the foreseeable future. Because PFIC status is a factual determination made annually after the close of each taxable year on the basis of the composition of our income and the value of our active versus passive assets for that year, there can be no assurance that we will not be a PFIC for any future taxable year. The overall level of our passive assets will be affected by how, and how quickly, we expend our liquid assets. Under circumstances where gross income from activities that produce passive income significantly increase relative to our gross income from activities that produce non-passive income or where we determine not to deploy significant amounts of cash for active purposes, our risk of becoming classified as a PFIC may substantially increase. If we were to be or become classified as a PFIC, a US 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 gains recognized on the sale or other disposition of the H shares or ADSs and on the receipt of distributions on the H shares or ADSs to the extent such gains or distributions are treated as an excess distribution under the United States federal income tax rules. For more information see Item 10. Additional Information E. Taxation United States Federal Income Tax Considerations.

Our operations may be adversely affected by cyber-attacks or similar disruptions.

We have established cybersecurity control schemes and operation and maintenance schemes for our information infrastructure and application system, built a cybersecurity risk management and control information platform, and devoted significant resources to protecting our digital infrastructure and data against cyber-attacks. If our systems against cyber-security risk prove to be ineffective, we could be adversely affected by, among other things, disruptions to our business operations, and loss of proprietary information, including intellectual property, financial information and employer and customer data, injury to people, property, environment and reputation. As cyber-security attacks continue to evolve, we may be required to expend additional resources to enhance our protective measures against cyber-security breaches.

Risks Relating to Our Industry

Our operations may be adversely affected by the global and domestic economic conditions.

Our results of operations are materially affected by economic conditions in China and elsewhere around the world. There are some uncertainty and instability in the current global economic recovery. The Chinese economy has entered the new normal stage with stable and favorable economic growth and is moving forward with high quality development. Our operations may also be adversely affected by factors such as foreign countries trade protection policies and regional trade agreements which may adversely affect our export and import activities.

Our operations may be adversely affected by the cyclical nature of the market.

Most of our revenues are attributable to sales of refined oil products and petrochemical products, and certain of these businesses and related products have historically been cyclical and sensitive to a number of factors that are beyond our control. These factors include the availability and prices of feedstock and general economic conditions, such as changes in industry capacity and output levels, changes in regional and global economic conditions, prices and availability of substitute products and fluctuation in prices and demands of natural gas, refined oil products and chemical products. Although we are an integrated company with upstream, midstream and downstream businesses, we have limited ability to mitigate the adverse influence of the cyclicality of global markets.

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We face strong competition from domestic and foreign competitors.

Among our competitors, some are major integrated petroleum and petrochemical companies within and outside China, which have recently become more significant participants in the petroleum and petrochemical industry in China. The PRC government has speeded up the release of restrictions on the right to use imported crude oil. This development may lead to refining overcapacity in China and intensify competition among local refineries. The Chinese crude oil and refined oil product markets are becoming increasingly dynamic and internationalized with implementation of tariff concessions and relaxation of market. In the opened-up wholesale market of refined oil products previously dominated by PetroChina and us, we are facing stronger competition with new players and imported products entering the market. Our market share of chemical products is also under stronger competitive pressure due to the increasingly active participation of diversified new market players including multinational petroleum and petrochemical companies and domestic private enterprises. In addition, we also expect to face competition in both domestic and international petrochemical product market as a result of our domestic and international competitors increasing production capacity. Increased competition may have a material adverse effect on our financial condition and results of operations.

Risks Relating to Our Controlling Shareholder

We engage in related party transactions with Sinopec Group from time to time which may create potential conflict of interest.

We have engaged from time to time and will continue to engage in a variety of transactions with Sinopec Group, which provides us with a number of services, including, but not limited to, ancillary supply, engineering, maintenance, transport, lease of land use right, lease of buildings, as well as educational and ancillary services. The nature of our transactions with Sinopec Group is governed by a number of service and other contracts between Sinopec Group and us. We have established various schemes in those agreements so that these transactions, when entered into, are under terms that are at arm s length. However, we cannot assure you that Sinopec Group Company or any of its members would not take actions that may favor its interests or its other subsidiaries interests over ours.

We are controlled by Sinopec Group Company, our ultimate controlling shareholder, whose interest in certain businesses are likely to compete with our business.

Sinopec Group Company has interests in certain businesses, such as petrochemical and overseas exploration and development, which compete or are likely to compete, either directly or indirectly, with our businesses. To avoid the adverse effects brought by the competition between us and Sinopec Group Company to the maximum extent possible, we and Sinopec Group Company have entered into a non-competition agreement. In 2012, we received from Sinopec Group Company an undertaking to avoid its competition with us. For details, please refer to the descriptions under Item 7. Major Shareholders and Related Party Transactions A. Major Shareholders. Notwithstanding the foregoing contractual arrangements, because Sinopec Group Company is our controlling shareholder, Sinopec Group Company may take actions that may conflict with our own interests.

It is possible that the current or future activities of our ultimate controlling shareholder, Sinopec Group Company, or its affiliates in or with certain countries that are the subject of economic sanctions under relevant U.S. laws could result in negative media and investor attention to us and possible imposition of sanctions on Sinopec Group Company, which could materially and adversely affect our shareholders value and operations.

Sinopec Group Company undertakes, from time to time and without our involvement, overseas investments and operations in the oil and gas industry, including exploration and production of oil and gas, refining and Liquefied Natural Gas or LNG, oilfield services and refining engineering projects. Sinopec Group Company s overseas asset portfolio includes a limited number of projects in countries that are subject to U.S. sanctions administrated by OFAC and by the U.S. Department of State. We currently do not believe that any existing investments of Sinopec Group Company will result in any direct sanctions imposed by OFAC. However, we cannot predict the interpretation or implementation of sanction policy at the U.S. federal, state or local levels with respect to any current or future activities by Sinopec Group Company or its affiliates, in countries or with individuals or entities that are the subject of U.S. sanctions. Similarly, we cannot predict whether U.S. sanctions will be further tightened in the case of Iran, or whether sanction scope will be modified or updated, or if any other countries or regions will be incorporated into the sanction list, or the impact that such actions may have on Sinopec Group Company and us. If becoming the target of U.S. sanctions, Sinopec Group Company may be prohibited from conducting business activities in the United States or with individuals or entities in the United States, and the transactions of the our securities in the United States will also be significantly affected. In addition, certain U.S. state and local governments and colleges have restrictions on the investment of public funds or endowment funds, respectively, in companies that are members of corporate groups with activities in certain countries that are the subject of U.S. sanctions. These investors may not wish to invest, and may divest their investment, in us because of our relationship with Sinopec Group Company and its investments and activities in those OFAC sanctioned countries. It is possible that, as a result of activities by Sinopec Group Company or its affiliates in countries that are the subject of U.S. sanctions, we may be subject to negative media or investor attention, which may distract management, consume internal resources and affect investors perception of our Company.

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Risks Relating to the PRC

Government regulations may limit our activities and affect our business operations.

The PRC government, though gradually liberalizing its regulations on entry into the petroleum and petrochemical industry, continues to exercise certain controls over the petroleum and petrochemical industry in China. These control mechanisms include granting the licenses to explore and produce crude oil and natural gas, granting the licenses to market and distribute crude oil and refined oil products, regulating the upper limit of the retail prices for gasoline and diesel; collecting special oil income levies, deciding import and export quotas and procedures, setting safety, environmental and quality standards, and formulating policies to save energy and reduce emission; meanwhile, there could be potential changes to macroeconomic and industry policies such as reforming of the oil and gas industry, further reforming and improvement of pricing mechanism of refined oil products and natural gas, and reforming in resource tax and environmental tax, which could impact the production and operations of the domestic petroleum and petrochemical industry. Such control mechanisms may have material effects on our operations and profitability.

The PRC governmental authorities, from time to time, audit or inspect our ultimate controlling shareholder. We cannot predict the impact if any, of their outcome on our reputation, business and financial condition as well as the trading prices of our ADSs and H shares.

The PRC governmental authorities, from time to time, perform audits, inspections, inquiries or similar actions on state-owned companies, such as Sinopec Group Company, our ultimate controlling shareholder. Such inspections are not conducted on a regular basis with specific targets, and therefore we cannot predict the outcome of these governmental activities. If, as a result of such audits, inspections or inquiries, (i) material irregularities are found within Sinopec Group Company or us or our employees or (ii) Sinopec Group Company or we become the target of any negative publicity, our reputation, business and financial condition as well as the trading prices of our ADSs and H shares may be materially and negatively impacted.

Our business operations may be adversely affected by present or future environmental regulations.

As an integrated petroleum and petrochemical company, we are subject to extensive environmental protection laws and regulations in China. These laws and regulations permit:

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- the imposition of environmental tax for the discharge of waste materials;

- the government, in accordance with law, to order correction, suspend production and impose fines for unlicensed or uncertified pollution discharge;

- the government, at its discretion, to seal up or close down any facility which has cause or may cause severe environmental damage and require it to correct or stop operations; and

- litigations and liabilities arising from pollutions and damages to the environment and public interests.

Our production activities produce substantial amounts of liquid, gas and solid waste materials. We have established a system to treat waste materials to prevent and reduce pollution. However, the PRC government has moved, and may move further, toward more rigorous enforcement of applicable laws, and toward the adoption of more stringent environmental standards, which, in turn, would require us to incur additional expenditures on environmental matters.

In recent years, we have commenced exploration and production of unconventional oil and gas resources, such as shale oil and gas and coal bed methane, through the application of relatively advanced technologies. As a result, our unconventional oil and gas operations rely on unproven technology which may expose us to higher environmental compliance standards and requirements. In the event of any failure to comply with such standards and requirements, we may be subject to public concerns about our unconventional oil and gas operations, which may also harm our corporate reputation.

Some of our development plans require compliance with state policies and governmental regulation.

We are currently engaged in a number of construction, renovation and expansion projects. Some of our large construction, renovation and expansion projects are subject to governmental confirmation and registration. The timing and cost of completion of these projects will depend on numerous factors, including when we can receive the required confirmation and registration from relevant PRC government authorities and the general economic condition in China. If any of our key projects required for our future growth are not confirmed or registered, or not confirmed or registered in a timely manner, our results of operations and financial condition could be adversely impacted.

Government control of currency conversion and exchange rate fluctuation may adversely affect our operations and financial results.

We receive a significant majority of our revenues in Renminbi. A portion of such revenues will need to be converted into other currencies to meet our foreign currency needs, which include, among other things:

- import of crude oil and other materials;
- debt service on foreign currency-denominated debt;
- purchases of imported equipment;
- payment of the principals and interests of bonds issued overseas; and
- payment of any cash dividends declared in respect of the H shares (including ADS).

The existing foreign exchange regulations have significantly reduced government foreign exchange controls for transactions under the current account, including trade and service related foreign exchange transactions and payment of dividends. Foreign exchange transactions under the capital account, including principal payments in respect of foreign currency-denominated obligations, continue to be subject to significant foreign exchange controls and require the approval of the State Administration of Foreign Exchange. These limitations could affect our ability to obtain foreign exchange through debt or equity financing, or to obtain foreign exchange. The PRC government has stated publicly that it intends to make the Renminbi freely convertible in the future. However, we cannot predict whether the PRC government will continue its existing foreign exchange policy and when the PRC government will allow free conversion of Renminbi.

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The exchange rate of the Renminbi against the US dollar and other foreign currencies fluctuates and is affected by, among other things, the changes in the PRC s and international political and economic conditions. On July 21, 2005, the PRC government introduced a floating exchange rate system to allow the value of the Renminbi to fluctuate within a regulated band based on market supply and demand and by reference to a basket of foreign currencies. On June 19, 2010 and August 11, 2015, respectively, the People s Bank of China (PBOC) decided to further promote the reform of exchange rate regime and enhance the flexibility of Renminbi exchange rate. The changes in foreign exchange rate will impact our cost in purchasing crude oil given the majority of our crude oil purchases are settled in foreign currencies and priced in US dollar. Besides, prices of refined oil products are guided by the PRC government and are pegged to the exchange rate of the Renminbi against the US dollar. Therefore the impact of Renminbi exchange rate fluctuation on the purchase cost of crude oil could largely be offset by the corresponding fluctuation in the prices of domestic refined oil products and chemical products.

Risks relating to enforcement of shareholder rights; Mandatory arbitration.

Currently, the primary sources of shareholder rights are our articles of association, the PRC Company Law and the Listing Rules of the Hong Kong Stock Exchange, which, among other things, impose certain standards of conduct, fairness and disclosure on us, our directors and our controlling shareholder. In general, their provisions for protection of shareholder s rights and access to information are different from those applicable to companies incorporated in the United States, the United Kingdom and other Western countries. In addition, the mechanism for enforcement of rights under the corporate framework to which we are subject may also be relatively undeveloped and untested. To our knowledge, there has not been any published report of judicial enforcement in the PRC by H share shareholders of their rights under constituent documents of joint stock limited companies or the PRC Company Law or in the application or interpretation of the PRC or Hong Kong regulatory provisions applicable to PRC joint stock limited companies. We cannot guarantee that our shareholders will enjoy protections that they may be entitled in other jurisdictions.

China does not have treaties providing for the reciprocal recognition and enforcement of judgments of courts with the United States, the United Kingdom or most other Western countries, and therefore recognition and enforcement in China of judgments of a court in any of these jurisdictions in relation to any matter not subject to a binding arbitration provision may not be assured. Our articles of association as well as the Listing Rules of the Hong Kong Stock Exchange provide that most disputes between holders of H shares and us, our directors, supervisors, officers or holders of domestic shares, arising out of the articles of association or the PRC Company Law concerning the affairs of our company, are to be resolved through arbitration, at the election of the claimant, by arbitration organizations in Hong Kong or the PRC, rather than through a court of law. On June 18, 1999, an arrangement was made between Hong Kong and the PRC for the mutual enforcement of arbitral awards. This new arrangement was approved by the Supreme People s Court of the PRC and the Hong Kong Legislative Council, and became effective on February 1, 2000. We are uncertain as to the outcome of any action brought in China to enforce an arbitral award granted to shareholders.

Our auditor, like other independent registered public accounting firms operating in China, is not permitted to be subject to inspection by Public Company Accounting Oversight Board, and as such, investors may be deprived of the benefits of such inspection.

Our independent registered public accounting firm that issued the audit reports included in our annual reports filed with the SEC, as an auditor of companies that are traded publicly in the United States and a firm registered with the Public Company Accounting Oversight Board, or PCAOB, is subject to laws in the United States pursuant to which the PCAOB conducts regular inspections to assess its compliance with applicable professional standards. Because our auditor is located in China, a jurisdiction where PCAOB has been unable to conduct inspections without the approval of the PRC authorities, our auditor, like other independent registered public accounting firms, is currently not inspected by PCAOB.

Inspections of other firms that PCAOB has conducted outside of China have identified deficiencies in those firms audit procedures and quality control procedures, which may be addressed as part of the inspection process to improve future audit quality. The lack of PCAOB inspections in

China may prevent PCAOB from regularly evaluating our auditor s audits and quality control procedures. The inability of PCAOB to conduct inspections of auditors in China makes it more difficult to evaluate the effectiveness of our auditor s audit procedures or quality control procedures. As a result, investors may be deprived of the benefits of PCAOB inspections.

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On December 7, 2018, the SEC and the PCAOB issued a joint statement highlighting continued challenges faced by the U.S. regulators in their oversight of financial statement audits of U.S.-listed companies with significant operations in China. However, it remains unclear what further actions, if any, the SEC and PCAOB will take to address this issue.

Additional remedial measures imposed on certain PRC-based accounting firms, including our independent registered public accounting firm, in proceedings brought by the SEC alleging the firms failure to meet specific criteria, could result in financial statements being determined to not be in compliance with the requirements of the Exchange Act.

In December 2012, the SEC brought administrative proceedings against the Big Four accounting firms in China, including our independent registered public accounting firm, alleging that these firms had refused to produce audit work papers and other documents related to certain other China-based companies whose securities are publicly traded in the United States. On January 22, 2014, an initial administrative law decision was issued, censuring these accounting firms and barring these firms from practicing before the SEC for a period of six months. The decision is neither final nor legally effective unless and until it is endorsed by the SEC. In February 2015, each of the four PRC-based accounting firms agreed to a censure and to pay a fine to the SEC to settle the dispute and avoid suspension of their ability to practice before the SEC. The settlement required the firms to follow detailed procedures to seek to provide the SEC with access to Chinese firms audit documents via the China Securities Regulatory Commission (CSRC) in response to future document requests by the SEC made through the CSRC. Under the terms of the settlement, the underlying proceeding against the four China-based accounting firms was deemed dismissed with prejudice for four years after entry of the settlement. The four-year mark occurred on February 6, 2019. We cannot predict if the SEC will further challenge the four China-based accounting firms compliance with U.S. law in connection with U.S. regulatory requests for audit work papers or if the results of such a challenge would result in the SEC imposing penalties such as suspensions.

In the event that the Chinese affiliates of the Big Four become subject to additional legal challenges by the SEC or PCAOB, depending upon the final outcome, listed companies in the United States with PRC operations may find it difficult or impossible to retain auditors in respect of their operations in the PRC, which could result in financial statements being determined to not be in compliance with the requirements of the Exchange Act, and hence face delisting. Moreover, any negative news about the proceedings against these audit firms may cause investor uncertainty regarding China-based, U.S.-listed companies and the market price of our ADSs may be adversely affected.

If our independent registered public accounting firm was denied, even temporarily, the ability to practice before the SEC and we were unable to timely find another registered public accounting firm to audit and issue an opinion on our financial statements, our financial statements could be determined not to be in compliance with the requirements of the Exchange Act. Such a determination could ultimately lead to delisting of our ADSs from the New York Stock Exchange (NYSE) or deregistration from the SEC, or both, which would substantially reduce or effectively terminate the trading of our ADSs in the United States.

ITEM 4. INFORMATION ON THE COMPANY

A. HISTORY AND DEVELOPMENT OF THE COMPANY

Our legal and commercial name is China Petroleum & Chemical Corporation. Our head office is located at 22 Chaoyangmen North Street, Chaoyang District, Beijing 100728, the People s Republic of China, our telephone number is (8610) 5996-0028 and our fax number is (8610) 5996-0386. We have appointed our representative office in the United States, located at 515 Madison Avenue, Suite 27 West, New York, NY

10022, USA (telephone number: (212) 759-5085; fax number: (212) 759-6882) as our agent for service of processes for actions brought under the U.S. securities laws. The SEC maintains an Internet website that contains reports, proxy and information statements, and other information regarding us that filed electronically with the SEC, which can be accessed at *http://www.sec.gov*. Information about the Company and documents the Company submitted to the SEC are available on the our investor relations website: http://www.sinopec.com/listco/en/investor_centre/corporate_governance/.

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We were established as a joint stock limited company on February 25, 2000 under the Company Law of the PRC with Sinopec Group Company as the sole shareholder at our inception. Our principal businesses consist of petroleum and petrochemical businesses transferred to us by Sinopec Group Company pursuant to a reorganization agreement. Such businesses include:

- exploration for, development, production and marketing of crude oil and natural gas;
- refining of crude oil and marketing and distribution of refined oil products, including transportation, storage, trading, import and export of petroleum products; and
- production and sales of petrochemical products.

Sinopec Group s continuing activities primarily consist, among other things, of:

- exploring and developing oil and gas reserves overseas;
- operating certain petrochemical facilities;
- providing geophysical exploration, and well drilling, survey, logging and downhole operational services;
- manufacturing production equipment and providing equipment maintenance services;
- providing construction services;
- providing utilities, such as electricity and water; and
- providing other operational services including transportation services.

Sinopec Group Company transferred the businesses to us either by transferring its equity holdings in subsidiaries or by transferring their assets and liabilities. Sinopec Group Company also agreed in the reorganization agreement to transfer to us its exploration and production licenses and all rights and obligations under the agreements in connection with its core businesses transferred to us. The employees relating to these assets were also transferred to us.

From July 8, 2015 to July 7, 2016, Sinopec Group Company increased its shareholding in the Company through acquisitions of our ordinary shares on the stock market in its own name or through other concerting parties, by way of acquiring 72,000,000 A shares. Immediately following the shareholding increase, Sinopec Group Company directly and indirectly held 86,345,821,101 shares of the Company.

On October 29, 2015, we entered into a joint venture agreement with Sinopec Assets Management Co., Ltd. (SAMC), a wholly-owned subsidiary of Sinopec Group Company, in relation to the formation of Sinopec Shanghai Gaoqiao Petrochemical Co., Ltd. (Gaoqiao). We and SAMC subscribed for 55% and 45% of the registered capital of Gaoqiao, respectively, and Gaoqiao became a subsidiary of the Company.

On August 2, 2016, our board of directors unanimously approved the proposal to introduce capitals from potential investors to invest in Sichuan-to-East China gas pipeline project, through our indirectly wholly-owned subsidiary Sinopec Sichuan-to-East China Natural Gas Pipeline Co., Ltd. (Sichuan-to-East China Pipeline Co.). On December 12, 2016, China Life Insurance Co., Ltd. (China Life) and SDIC Communications Holding Co., Ltd. (SDIC Communications) entered into the Capital Injection Agreement in relation to Sichuan-to-East China Pipeline Co. and agreed to collectively subscribe for 50% equity interest in Sichuan-to-East China Pipeline Co. for an aggregate amount of RMB 22.8 billion in cash. Upon completion of the capital injection, China Life, SDIC Communications and us hold 43.86%, 6.14% and 50% equity interest in Sichuan-to-East China Pipeline Co., respectively.

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On April 27, 2017, our board of directors unanimously approved the proposal of the acquisition of equity interest in Shanghai SECCO Petrochemical Company Limited (Shanghai SECCO) by Gaoqiao. On October 26, 2017, Gaoqiao purchased 50% equity interest in Shanghai SECCO from BP Chemicals East China Investment Limited with a cash consideration of RMB 10,135 million. Before the acquisition, we and one of our subsidiaries held 30% and 20% equity interest in Shanghai SECCO, respectively. Upon completion of the acquisition, we, together with our subsidiaries, hold 100% equity interest of Shanghai SECCO, which became a subsidiary of us.

Following the instruction by the State-owned Assets Supervision and Administration Commission of the State Council, on August 9, 2018, Sinopec Group Company gratuitously transferred 1,241,721,854 A shares of the Company to Beijing Chengtong Financial Control Investment Co., Ltd., and 1,241,721,854 A shares to Guoxin Investment Co., Ltd. Upon the completion of such transfers, Sinopec Group Company directly and indirectly held 83,862,377,393 shares of the Company.

B. BUSINESS OVERVIEW

Exploration and Production

Overview

We currently explore for, develop and produce crude oil and natural gas in a number of areas in China and overseas. As of December 31, 2018, we held 219 production licenses in China, with an aggregate acreage of 31,643 square kilometers and with terms ranging from 10 to 80 years. Our production licenses may be renewed upon our application at least 30 days prior to the expiration date, which are renewable for unlimited times. During the term of our production license, we pay an annual production license fee of RMB 1,000 per square kilometer.

As of December 31, 2018, we held 194 exploration licenses in China for various blocks in which we engaged in exploration activities, with an aggregate acreage of approximately 525,000 square kilometers.

As of December 31, 2018, our overseas subsidiary held one production licenses, with an acreage of 322.6 square kilometers. It currently does not have exploration licenses. Our overseas equity-accounted investments held 73 production licenses, with an aggregate acreage of 4,783.3 square kilometers, and no exploration license.

Properties

We currently operate 295 oil and gas producing fields and blocks.

Shengli production field is our most important crude oil production field. It consists of 75 producing blocks of various sizes extending over an area of 2,577 square kilometers in northern Shandong province, all of which are our net developed acreage. Most of Shengli s blocks are located in the Jiyang trough with various oil producing layers. In 2018, Shengli production field produced approximately 170 million barrels of crude oil and 16.94 billion cubic feet of natural gas, with an average daily production of 463 thousand BOE.

As of December 31, 2018, the total acreage of our oil and gas producing fields and blocks in China was 15,426 square kilometers, including 9,622 square kilometers of developed acreage, all of which were net developed acreage; and 5,804 square kilometers of gross undeveloped acreage, all of which were net undeveloped acreage.

As of December 31, 2018, the total acreage of our oil and gas producing fields and blocks of our overseas subsidiary was 322.6 square kilometers, including 169.2 square kilometers of developed acreage, of which 110 square kilometers were net developed acreage; and 153.4 square kilometers of gross undeveloped acreage, of which 31.8 square kilometers were net undeveloped acreage.

As of December 31, 2018, the total acreage of our oil and gas producing fields and blocks of our overseas equity-accounted investments was 1,700.7 square kilometers, including 1,626.5 square kilometers of developed acreage, of which 1,626.5 square kilometers were net developed acreage; and 74.2 square kilometers of gross undeveloped acreage, of which 74.2 square kilometers were net undeveloped acreage.

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Oil and Natural Gas Reserves

As of December 31, 2018, our estimated proved reserves of crude oil and natural gas in China were 2,471 million BOE (including 1,339 million barrels of crude oil and 6,793 billion cubic feet of natural gas), and our estimated proved reserves of crude oil and natural gas outside of China, which included a share of the estimated proved reserves of our equity-accounted investments, were 329.2 million BOE. Our estimated proved reserves do not include additional quantities recoverable beyond the term of the relevant production licenses, or that may result from extensions of currently proved areas, or from application of improved recovery processes not yet tested and determined to be economical.

The following tables set forth our proved developed and undeveloped crude oil and natural gas reserves by region as of December 31, 2018.

Crude Oil Proved Reserves	**As of December 31, 2018 (in millions of barrels)**
Developed Subsidiaries	
China	1,244
Shengli	910
Others	334
Overseas	27
Subtotal	1,271
Equity-accounted investments	
China	
Overseas	261
Subtotal	261
Total Proved Developed	1,532
Undeveloped Subsidiaries	
China	95
Shengli	16
Others	79
Overseas	1
Subtotal	96
Equity-accounted investments	
China	
Overseas	38
Subtotal	38
Total Proved Undeveloped	134
Total Crude Oil Proved Reserves	1,666

Natural Gas Proved Reserves	**As of December 31, 2018 (in billions of cubic feet)**
Developed Subsidiaries	
China	5,822
Puguang	1,904
Fuling	1,149
Others	2,769
Overseas	
Subtotal	5,822
Equity-accounted investments	
China	
Overseas	13
Subtotal	13

Total Proved Developed	5,835
Undeveloped Subsidiaries	
China	971
Puguang	
Fuling	195
Others	776
Overseas	
Subtotal	971
Equity-accounted investments	
China	
Overseas	
Subtotal	
Total Proved Undeveloped	971
Total Natural Gas Proved Reserves	6,806

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As of December 31, 2018, approximately 96 million barrels of our crude oil proved reserves and 971 billion cubic feet of our natural gas proved reserves were classified as proved undeveloped reserves in China and overseas. 2.2 million barrels of crude oil and 32.6 billion cubic feet natural gas proved reserves in China have been classified as proved undeveloped for more than five years, mainly under Sinopec Shanghai Offshore Petroleum Company, one of our subsidiaries.

During 2018, a total of 391 wells were drilled by us in China and 70 wells were drilled overseas. We converted 41.9 million barrels of proved undeveloped crude oil reserves and 117.4 billion cubic feet of proved undeveloped natural gas reserves into proved developed reserves in 2018. Total capital expenditure incurred in converting proved undeveloped reserves into proved developed reserves amounted to RMB 7,970 million, including RMB 7,740 million and RMB 230 million incurred in connection with our operations in China and overseas, respectively, in 2018.

Our reserves estimation is managed by a two-tier management system. The Oil and Natural Gas Reserves Management Committee, or the RMC, at our headquarters level, organizes, coordinates and oversees the overall reserves estimation, and is in charge of the major issues in reserves estimation and approving the reserves estimation report of our company. Each of our Branches has a reserves management committee that manages and coordinates the reserves estimation process, organizes the evaluators to do reserves estimation, reviews and inspects the evaluation materials and results at the branches level, and reports to the RMC of the Company.

Our RMC consists of our president, the senior management of related divisions at our headquarters level, our exploration and production institution and our Branches in each oil field. The current chairman of our RMC, Mr. Ma Yongsheng, is a member of China Engineering Academy and has over 30 years of experience in the oil and gas industry. A majority of our RMC members hold doctor s or master s degrees and our RMC members have an average of 20 years of technical experience in relevant industry fields, such as geology, development and economics.

Our reserves estimation is guided by procedural manuals and technical guidance. Initial collection and compilation of reserves information are conducted by different working divisions, including exploration, development and financial divisions, at production bureau level. Technical experts in exploration, development and economics divisions of our Branches in each oil field collectively prepare the initial report on reserves estimation. The reserves management committees at production bureau level then review to ensure the qualitative and quantitative compliance with technical guidance and accuracy and reasonableness of the reserves estimation. We also engage outside consultants who assist us to be in compliance with the U.S. Securities and Exchange Commission rules and regulations. Our reserves estimation process is further facilitated by a specialized reserves database which is reviewed and updated periodically.

Oil and Natural Gas Production

In 2018, we produced an average of 1,126.6 thousand BOE per day in China, of which approximately 60.5% was crude oil and 39.5% was natural gas. We produced an average of 110 thousand BOE per day overseas, of which 98.2% was crude oil and 1.8% was natural gas.

The following tables set forth our average daily production of crude oil and natural gas for the years ended December 31, 2016, 2017 and 2018. The production of crude oil includes condensate.

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	2016	Year Ended December 31, 2017 (in thousands of barrels)	2018
Average Daily Crude Oil Production			
China	692	682	682
Subsidiaries	692	682	682
Shengli	464	455	455
Others	228	227	227
Overseas	138	122	107
Subsidiary	51	41	30
Equity-accounted investments	87	81	77
Total Crude Oil Production	830	804	789

	2016	Year Ended December 31, 2017 (in millions of cubic feet)	2018
Average Daily Natural Gas Production			
China	2,083	2,490	2,668
Subsidiaries	2,083	2,490	2,668
Puguang	362	558	615
Fuling	486	581	582
Others	1,235	1,351	1,471
Overseas	10	10	8
Equity-accounted investments	10	10	8
Total Natural Gas Production	2,093	2,500	2,676

Lifting Cost & Realized Prices

The following table sets forth our average lifting costs per BOE of crude oil produced, average sales prices per barrel of crude oil and average sales prices per thousand cubic meters of natural gas for the years ended December 31, 2016, 2017 and 2018.

	Weighted Average	China (RMB)	Overseas(1)
For the year ended December 31, 2018			
Average petroleum lifting cost per BOE	112.45	111.75	116.90
Average realized sales price			
Per barrel of crude oil	432.32	426.81	467.11
Per thousand cubic meters of natural gas	1,263.41	1,263.41	
For the year ended December 31, 2017			
Average petroleum lifting cost per BOE	107.53	111.47	85.52
Average realized sales price			
Per barrel of crude oil	332.60	327.06	363.60
Per thousand cubic meters of natural gas	1,185.53	1,185.53	
For the year ended December 31, 2016			
Average petroleum lifting cost per BOE	108.21	112.19	77.62
Average realized sales price			
Per barrel of crude oil	240.70	246.10	213.41
Per thousand cubic meters of natural gas	1,266.03	1,266.03	

(1) The exchange rates we used for overseas data in this table were exchange rates for each year ended December 31, 2016, 2017 and 2018, which were RMB 6.6400 to US$1.00, RMB 6.7518 to US$ 1.00 and RMB 6.6204 to US$ 1.00, respectively.

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Exploration and Development Activities

In the low oil price environment in 2018, we prioritized low-cost and high-quality exploration activities. We continued our efforts in exploration activities, focused on increasing efficiency and effectiveness, continuously reducing our inefficient crude oil production and high cost activities, and completed the construction of the second phase of our Fuling shale gas project.

The following table sets forth the numbers of our exploratory and development wells, including a breakdown of productive wells and dry wells we drilled during the years ended December 31, 2016, 2017 and 2018.

	As of December 31,											
	2016				2017				2018			
Number of	Exploratory		Development		Exploratory		Development		Exploratory		Development	
Drilled Wells	Productive	Dry	Productive	Dry	Productive	Dry	Productive	Dry	Productive	Dry	Productive	Dry
China	266	149	801	6	266	149	1,442	9	286	131	1,941	6
Subsidiaries	266	149	801	6	266	149	1,442	9	286	131	1,941	6
Shengli	166	73	462	5	151	71	845	1	149	71	1,201	5
Others	100	76	339	1	115	78	597	8	137	60	740	1
Overseas	2	1	99		2	1	119				70	
Subsidiaries												
Equity-accounted investments	2	1	99		2	1	119				70	
Total	268	150	900	6	268	150	1,561	9	286	131	2,011	6

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The following table sets forth the number of wells being drilled by us as of December 31, 2016, 2017 and 2018:

	As of December 31,										
	2016				2017				2018		
Number of Drilling	Gross		Net		Gross		Net		Gross		
Welling	Exploratory	Development	Exploratory	Development	Exploratory	Development	Exploratory	Development	Exploratory	Development	Expl
China	78	138	78	138	62	147	62	147	69	277	
Subsidiaries	78	138	78	138	62	147	62	147	69	277	
Shengli	28	21	28	21	19		19		25	72	
Others	50	117	50	117	43	147	43	147	44	205	
Overseas		2		2		5		5		10	
Subsidiaries											
Equity-accounted investments		2		2		5		5		10	
Total	78	140	78	140	62	152	62	152	69	287	

The following tables set forth our number of productive wells for crude oil and natural gas as of December 31, 2018, as compared to December 31, 2017 and 2016:

	As of December 31,					
	2016		2017		2018	
Productive Wells for Crude Oil	**Gross**	**Net**	**Gross**	**Net**	**Gross**	**Net**
China	49,921	49,921	50,121	50,121	51,030	51,030
Subsidiaries	49,921	49,921	50,121	50,121	51,030	51,030
Shengli	32,019	32,019	32,105	32,105	32,805	32,805
Others	17,902	17,902	18,016	18,016	18,225	18,225
Overseas	7,432	3,614	7,350	3,968	7,293	3,939
Subsidiaries	28	14	28	14	28	14
Equity-accounted investments	7,404	3,600	7,322	3,954	7,265	3,925
Total	57,353	53,535	57,471	54,089	58,323	54,969

	As of December 31,					
	2016		2017		2018	
Productive Wells for Natural Gas	**Gross**	**Net**	**Gross**	**Net**	**Gross**	**Net**
China	4,966	4,932	4,800	4,762	5,068	5,028
Subsidiaries	4,966	4,932	4,800	4,762	5,068	5,028
Puguang	57	57	57	57	58	58
Fuling	253	253	266	266	368	368
Others	4,656	4,622	4,477	4,439	4,642	4,602
Total	4,966	4,932	4,800	4,762	5,068	5,028

Refining

Overview

In 2018, our refinery throughputs were approximately 244 million tonnes. We produce a full range of refined oil products. The following table sets forth our production of our principal refined oil products for the years ended December 31, 2016, 2017 and 2018.

	Year Ended December 31,		
	2016	2017	2018
		(in million tonnes)	
Gasoline	56.36	57.03	61.16
Diesel	67.34	66.76	64.72
Kerosene	25.47	26.88	28.91
Light chemical feedstock	38.54	38.60	38.52
Liquefied petroleum gas	12.12	12.37	13.17
Fuel oil	0.94	0.80	1.68

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Gasoline and diesel are our largest revenue-generating products, and are sold mostly through our marketing and distribution segment through both wholesale and retail channels. We use most of our production of chemical feedstock as feedstock for our own chemical operations. Most of our other refined oil products were sold in China to a wide variety of industrial and agricultural customers, and a small amount is exported.

Refining Facilities

Currently we operate 30 refineries in China. As of December 31, 2018, our total primary distillation capacity of crude oil was 293.5 million tonnes per annum.

The following table sets forth our total primary distillation capacity per annum of crude oil and refinery throughputs as of and for the years ended December 31, 2016, 2017 and 2018.

	As of and for the Year Ended December 31,		
	2016	**2017**	**2018**
Primary distillation capacity of crude oil (million tonnes per annum)(1)	294.7	294.7	293.5
Refinery throughputs (million tonnes)(2)	235.5	238.5	244.0

(1) The primary distillation capacity and refinery throughputs of joint ventures are fully included in our statistics.

(2) When calculating refinery throughputs, conversion from tonnes to barrels are made at a rate of one tonne to 7.35 barrels.

In 2018, our gasoline yield was 25.1%, diesel yield was 26.5%, kerosene yield was 11.9%, and light chemical feedstock yield was 15.8%. Other products include lubricant, liquefied petroleum gas, solvent, asphalt, petroleum coke, paraffin and fuel oil. For the years ended December 31, 2016, 2017 and 2018, our overall yield for all refined oil products at our refineries was 94.7%, 94.9% and 94.9%, respectively.

The following table sets forth the primary distillation capacity per annum as of December 31, 2018 of each of our refineries with the primary distillation capacity of 8 million tonnes or more per annum.

Refinery	**Primary Distillation Capacity as of December 31, 2018 (in million tonnes per annum)**
Maoming	23.5
Zhenhai	23.0
Jinling	21.0
Shanghai	16.0

Qilu	14.0
Yangzi	14.0
Fujian	14.0
Tianjin	13.8
Guangzhou	13.2
Gaoqiao	13.0
Qingdao Refining & Chemical	12.0
Changling	11.5
Yanshan	11.0
Shijiazhuang	10.0
Jiujiang	10.0
Hainan	9.2
Luoyang	9.0
Wuhan	8.5

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In 2018, our primary distillation capacity of crude oil decreased by 1.2 milllion tonnes per annum. In addition, in 2018, our hydrofining capacity increased by 1.5 million tonnes per annum. The revamping projects for a number of refining facilities to improve refined oil product quality were also completed and put into operation.

Source of crude oil

In 2018, approximately 89% of the crude oil required for our refinery business was imported.

Marketing and Sales of Refined Oil Products

Overview

We operate the largest sales and distribution network for refined oil products in China. In 2018, we distributed and sold approximately 180.2 million tonnes of gasoline, diesel and kerosene domestically. Most of the refined oil products sold by us are produced internally. In 2018, approximately 70% of our gasoline sales volume and approximately 72% of our diesel sales volumes were produced internally.

The table below sets forth a summary of key data in the marketing and sales of refined oil products in the years of 2016, 2017 and 2018.

	As of December 31,		
	2016	**2017**	**2018**
Total sales volume of refined oil products (in million tonnes)	194.84	198.75	198.32
Domestic sales volume of refined oil products (in million tonnes)	172.70	177.76	180.24
Retail	120.14	121.56	121.64
Wholesale and Distribution	52.56	56.20	58.61
Average annual throughput of service stations (in tonnes per station)	3,926	3,969	3,979

	As of December 31,		
	2016	**2017**	**2018**
Total number of service stations under Sinopec brand	30,603	30,633	30,661
Self-operated service stations	30,597	30,627	30,655

Retail

All of our retail sales are made through a network of service stations and petroleum shops operated under the Sinopec brand. Through this unified network we are able to implement consistent pricing policies, maintain both product and service quality standards and more efficiently deploy our retail network.

In 2018, we sold approximately 121.6 million tonnes of gasoline, diesel and kerosene through our retail network, representing approximately 67.5% of our total domestic gasoline, diesel, jet fuel and kerosene sales volume. Our retail network mainly consists of service stations that are wholly-owned and operated by us, and jointly-owned and generally operated or leased by us, all of which are operated under the Sinopec brand. We also franchised the Sinopec brand to third parties services stations. As of December 31, 2018, we had 6 franchised service stations that are owned and operated by third parties. In 2018, the average annual throughput of our service stations increased 0.3% from 2017, and we have further strengthened our leading position in our principal market, and further improved our brand awareness and customer loyalty.

Wholesale and Distribution

In 2018, we sold approximately 58.6 million tonnes of refined oil products, including 11.9 million tonnes of gasoline, 29.1 million tonnes of diesel and 17.6 million tonnes of kerosene, through wholesale and distribution to independent distributors such as domestic industrial enterprises, hotels, restaurants and agricultural producers and long-term large-scale end users such as railways, airlines, shipping and public utilities.

We operate 353 storage facilities with a total capacity of approximately 18.8 million cubic meters, substantially all of which are wholly-owned by us. These storage facilities and our wholesale centers are connected to our refineries by railway, waterway and pipelines. We also own some dedicated railways, oil wharfs and oil barges, as well as a number of rail tankers and oil trucks.

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Chemicals

Overview

We are the largest petrochemicals producer and distributor in China, with our petrochemical production plants located in economically developed regions such as central, eastern and southern China. We produce and distribute a full range of chemical products including intermediate petrochemicals, synthetic resins, synthetic fiber monomer and polymers, synthetic fibers and synthetic rubber. Synthetic resins, synthetic fibers, and synthetic rubber comprise a significant majority of our external sales. Synthetic fiber monomer and polymers and intermediate petrochemicals, on the other hand, are mostly internally consumed as feedstock for the production of other chemical products. Our chemical operations are integrated upstream and downstream with our refining businesses, which supply a significant portion of our naphtha and light hydrocarbons feedstock. Due to the high demand in China, we sell substantially all of our chemical products in China.

Products

Intermediate Petrochemicals

We are the largest ethylene producer in China. Our rated ethylene capacity as of December 31, 2018 was 11.1 million tonnes per annum. In 2018, we produced 11.5 million tonnes of ethylene. Nearly all of our olefins production is used as feedstock for our petrochemical operations.

We produce aromatics mainly in the forms of benzene and para-xylene, which are used primarily as feedstock for purified terephthalic acid, or PTA, the preferred raw material for polyester. We are the largest aromatics producer in China.

Chemicals extracted from olefins and aromatics are mainly used to produce synthetic resins, synthetic rubber and synthetic fibers, as well as intermediate petrochemicals.

The following table sets forth our rated capacity per annum, production volume and major plants of production as of or for the year ended December 31, 2018 for our principal intermediate chemical products.

	Our Rated Capacity (thousand tonnes per annum)	Our Production (thousand tonnes)	Major Plants of Production
Ethylene	11,128	11,512	Yanshan, Shanghai, Yangzi, Qilu, Maoming, Guangzhou, Tianjin, Zhongyuan, Shanghai SECCO, BASF-YPC*, Fujian*, Sinopec Sabic (Tianjin)*, Zhenhai, Sino-Korean (Wuhan) and Great Wall EC
Propylene	10,197	9,628	

			Yanshan, Shanghai, Yangzi, Qilu, Maoming, Guangzhou, Tianjin, Zhongyuan, Shanghai SECCO, BASF-YPC*, Jinling, Anqing, Qingdao, Hainan, Fujian*, Sinopec Sabic (Tianjin)*, Zhenhai, Sino-Korean (Wuhan) and Great Wall EC
Benzene	5,558	4,253	Yanshan, Shanghai, Yangzi, Qilu, Guangzhou, Zhenhai, Tianjin, Luoyang, Shanghai SECCO, BASF-YPC*, Fujian*, Maoming, Hainan and Sino-Korean (Wuhan), Jinling
Styrene	2,303	2,155	Zhenhai, Yanshan, Qilu, Guangzhou, Maoming, Shanghai SECCO, Anqing and BASF-YPC*
Para-xylene	4,759	4,762	Shanghai, Yangzi, Qilu, Tianjin, Luoyang, Zhenhai, Jinling, Fujian* and Hainan
Phenol	758	742	Yanshan, Gaoqiao* and Sinopec Sabic (Tianjin)*

* Joint ventures, of which the production capacities and outputs are fully included in our statistics.

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Synthetic Resins

We are the largest producer of polyethylene, polypropylene and polystyrene and supplier of major synthetic resins products in China.

The following table sets forth our rated capacity per annum, production volumes and major plants of production for each of our principal synthetic resins as of or for the year ended December 31, 2018.

	Our Rated Capacity (thousand tonnes per annum)	Our Production (thousand tonnes)	Major Plants of Production
Polyethylene	7,614	7,309	Yanshan, Shanghai, Yangzi, Qilu, Maoming, Guangzhou, Tianjin, Zhongyuan, Shanghai SECCO, BASF-YPC*, Fujian*, Sinopec Sabic (Tianjin)*, Zhenhai, Sino-Korean (Wuhan) and Great Wall EC
Polypropylene	7,404	7,354	Yanshan, Shanghai, Yangzi, Qilu, Guangzhou, Maoming, Tianjin, Zhongyuan, Shanghai SECCO, Fujian*, Sinopec Sabic (Tianjin)*, Zhenhai, Sino-Korean (Wuhan), Great Wall EC, Luoyang, Jiujiang, Jingmen, Hainan, Beihai, Jingmen Branch, and Shijiazhuang
Polyvinyl chloride	600	232	Qilu
Polystyrene	698	583	Yanshan, Qilu, Maoming, Guangzhou, and Shanghai SECCO
Acrylonitrile butadiene styrene	200	154	Gaoqiao

* Joint ventures, of which the production capacities and outputs are fully included in our statistics.

Synthetic Fiber Monomers and Polymers

Our principal synthetic fiber monomers and polymers are purified terephthalic acid, ethylene glycol, acrylonitrile, caprolactam, polyester, polyethylene glycol and polyamide fiber. Based on our 2018 production, we are the largest producer of ethylene glycol and caprolactam in China.

The following table sets forth our rated capacity per annum, our production volume and major plants of production as of or for the year ended December 31, 2018 for each type of our principal synthetic fiber monomers and polymers.

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	Our Rated Capacity (thousand tonnes per annum)	Our Production (thousand tonnes)	Major Plants of Production
Purified terephthalic acid	3,119	2,063	Shanghai, Yangzi, Yizheng, Tianjin and Luoyang
Ethylene glycol	3,299	2,751	Yanshan, Shanghai, Yangzi, Tianjin, Maoming, BASF-YPC*, Sinopec Sabic (Tianjin)*, Zhenhai
Acrylonitrile	1,070	820	Anqing, Shandong Koruhr* and Shanghai SECCO
Caprolactam	809	716	Baling, Shijiazhuang, Baling Constant*
Polyester	3,178	2,754	Shanghai, Yizheng, Tianjin and Luoyang

* Joint ventures, of which the production capacities and outputs are fully included in our statistics.

Synthetic Fibers

Our principal synthetic fiber products are polyester fiber and acrylic fiber.

The following table sets forth our rated capacity per annum, production volume and major plants of production for each type of our principal synthetic fibers as of or for the year ended December 31, 2018.

	Our Rated Capacity (thousand tonnes per annum)	Our Production (thousand tonnes)	Major Plants of Production
Polyester fiber	1,331	1,020	Yizheng, Shanghai, Tianjin and Luoyang
Acrylic fiber	265	193	Shanghai, Anqing and Qilu

Synthetic Rubbers

Our principal synthetic rubbers are cis-polybutadiene rubber, styrene butadiene rubber, or SBR, styreneic block copolymers (SBCs) thermoplastic elastomer and isobutadiene isoprene rubber, or IIR. Based on our 2018 production, we are the largest producer of SBR, cis-polybutadiene rubber and SBCs thermoplastic elastomer in China.

The following table sets forth our rated capacity per annum, production volume and major plants of production as of or for the year ended December 31, 2018 for each of our principal synthetic rubbers.

	Our Rated Capacity	Our Production	Major Plants of Operation

	(thousand tonnes per annum)	(thousand tonnes)	
Cis-polybutadiene rubber	520	431	Yanshan, Qilu, Maoming, Yangzi and Gaoqiao
Styrene butadiene rubber	430	267	Qilu, Yangzi, Gaoqiao and Yanshan
Styrene-butadiene-styrene thermoplastic elastomers	140	109	Yanshan and Maoming
Isobutylene isoprene rubber	125	27	Yanshan
Isoprene rubber	30		Yanshan
Ethylene propylene rubber	75	62	Gaoqiao*

* Joint ventures, of which the production capacities and outputs are fully included in our statistics.

Marketing and Sales of Petrochemicals

The central, eastern and southern regions in China, where most of our petrochemical plants are located, constitute the major petrochemical market in China. Our proximity to the major petrochemical market gives us a geographic advantage over our competitors.

The prices of petrochemical products in China have become market-oriented. Our principal sales channels consist of (i) direct sales to domestic and foreign large- and medium-sized manufacturing enterprises, which account for more than 75.1% of our direct sales, (ii) sales to distributors, who are responsible for sales and distribution to a portion of our smaller and scattered customers or specific customers, and (iii) sales of chemical products through our e-commerce platform Chem E-Mall, which effectively expands our traditional sales channels and provides new options for procurement.

Competition

According to the Measures for the Administration of Overseas Investment of Enterprises (Decree No. 11 of 2017 of the National Development and Reform Commission), when an investment entity conducts overseas investment, it shall undergo the formalities for the confirmation or recordation of overseas investment projects, report relevant information, and cooperate in supervision and inspection. The scope of implementation of confirmation management is sensitive projects conducted by investors directly or through overseas enterprises controlled by them, including projects involving sensitive countries and regions, and projects involving sensitive industries. The scope of the implementation of recordation management is non-sensitive projects that are directly conducted by investors, namely, non-sensitive projects that involve investors direct contribution of assets or rights and interests or provision of financing or security. The confirmation or recordation authority is the National Development and Reform Commission (NDRC).

Pursuant to the Anti-Monopoly Law of the PRC which became effective on August 1, 2008, when market concentration by business carriers through merger, acquisition of control through shares or assets acquisition, or acquisition of control or the ability to exercise decisive influence over other business carriers by contract or by other means reaches a threshold of declaration level prescribed by the State Council, the business carriers shall declare in advance to the Anti-monopoly Law enforcement agency, otherwise, the business carriers shall not implement such market concentration.

Refining and Marketing of Refined Oil Products

Market participants compete primarily on the basis of wide-established sales network and logistics system, quality of products and service, efficiency of operations including proximity to customers, awareness of brand name and price. While we constantly face competition from other market participants, we believe that we have a competitive advantage in our principal market against our competitors.

Chemicals

We compete with domestic and foreign chemicals producers and distributors in the chemicals market. We adopt the strategy of one product one policy, one customer one case to meet customers needs, coordinate production, sales, research and application, tailor supply secured plans for customers, provide customized services, and strive to create value for customers. Our petrochemical production facilities proximity to customers has given us significant regional advantages over our competitors, resulting in lower transportation costs and better competitiveness of our products.

Patents and Trademarks

In 2018, we were granted 4,434 patents in China and overseas. As of December 31, 2018, we owned a total of 30,365 patents in China and overseas.

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In 2018, we had 391 material trademarks approved internally, among which 241 were registered in China and 150 registered overseas.

Business Operations Relating to Iran Threat Reduction and Syria Human Rights Act of 2012

In 2018, we sourced approximately 8.0% of our total refinery throughputs of crude oil from Iran. In addition, we engaged in a small amount of trading activities with Iranian companies, of which trading revenue and net profit was US$526.6 million and US$4.2 million, respectively, accounting for 0.121% and 0.035% among our operating revenue and net profit respectively.

Based on feedback to our inquiries to Sinopec Group Company, our controlling shareholder, Sinopec Group Company engaged in a small amount of business activities in Iran such as providing engineering services and designs. Sales revenue from these business activities accounted for 0.041% of its total unaudited sales revenue.

Regulatory Matters

Overview

China s petroleum and petrochemical industry has seen significant liberalization in the past ten years. However, the exploration, production, marketing and distribution of crude oil and natural gas, as well as the production, marketing and distribution of certain refined oil products are still subject to regulation of many government agencies including:

National Development and Reform Commission (NDRC)

NDRC is responsible for formulating and implementing key policies in respect of petroleum and petrochemical industry, including:

- Formulating guidance plan for annual production, import and export amount of crude oil, natural gas and petroleum products nationwide based on its forecast on macro-economic conditions in China;

- Setting the pricing policy for refined oil products;

- Approving certain domestic and overseas resource investment projects which are subject to NDRC s approval as required by the Catalogue of Investment Projects Approved by the Government in effect; and

National Energy Administration (NEA)

NEA is primarily responsible for the formulation of energy development plans and annual directive plans, approving major energy-related projects and facilitating the implementation of sustainable development of energy strategies, coordinating the development and utilization of renewable energies and new energies, and organizing matters relating to energy conservation and comprehensive utilization as well as environmental protection for the energy industry.

The Ministry of Commerce (MOFCOM)

MOFCOM is responsible for the record-filing of Sino-foreign equity joint venture contracts and Sino-foreign cooperation joint venture contracts, and monitoring the foreign investors oil and gas exploration projects in the PRC. It is responsible for approving or filing of the overseas investment by PRC enterprises and issuing the enterprise overseas investment certificate and quotas and licenses for import and export of crude oil and refined oil products. According to the law, MOFCOM is also responsible for supervising, approving and record-filing of foreign investment (excluding financial investment) of domestic enterprises.

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Ministry of Natural Resources (MNR)

The MNR (formerly known as the Ministry of Land and Resources, or MLR) is responsible for issuing the licenses that are required to explore and produce crude oil and natural gas in China. In March 2018, according to the Institutional Reform Plan of the State Council, the responsibilities of the Ministry of Land and Resources were integrated to form the Ministry of Natural Resources of the People s Republic of China.

Regulation of Exploration and Production

Exploration and Production Rights

The PRC Constitution provides that all mineral and oil resources belong to the state. In 1986, the Standing Committee of the National People s Congress passed the Mineral Resources Law which authorizes MNR, to exercise administrative authority over the exploration and production of the mineral and oil resources within the PRC, including its territorial waters. The Mineral Resources Law and its supplementary regulations provide the basic legal framework under which exploration licenses and production licenses are granted. The MNR has the authority to grant exploration licenses and production licenses on a competitive bidding or other basis it considers appropriate. Applicants for these licenses must be companies approved by the State Council to engage in oil and gas exploration and production activities. Currently, we are one of the few companies that have received such exploration licenses and production licenses in oil and gas industry.

Applicants for exploration licenses must first submit applications to the MNR with respect to blocks in which they intend to engage in exploration activities. The holder of an exploration license is obligated to make an annual minimum exploration investment and pay annual exploration license fees, ranging from RMB 100 to RMB 500 per square kilometer, relating to the exploration blocks in respect of which the license is issued. The maximum term of an oil and gas exploration license is 7 years. Such exploration license may be renewed upon application by the holder at least 30 days prior to expiration date, with each renewal for a maximum two-year term. Under the PRC laws and regulations, we are entitled for reductions and exemptions of exploration license fees for exploration in the western, offshore and northeastern regions of China.

At the exploration stage, an applicant can also apply for a progressive exploration and production license that allows the holder to test and develop reserves not yet fully proved. The progressive oil and gas exploration and production license has a maximum term of 15 years. When the reserves become proved for a block, the holder must apply for a full production license in order to undertake production.

The MNR issues full production licenses to applicants on the basis of the reserve reports approved by relevant authorities. The maximum term of a full production license is 30 years unless a special dispensation is given by the State Council. Due to a special dispensation granted to us by the State Council, the maximum term of our full production licenses is 80 years. The full production license is renewable upon application by the holder at least 30 days prior to expiration of the original term. A holder of the full production license has to pay an annual full production right usage fee of RMB 1,000 per square kilometer.

Exploration and production licenses do not grant the holders the right to enter upon any land for the purpose of exploration and production. Holders of exploration and production licenses must separately obtain the right to use the land covered by the licenses, and if permissible under applicable laws, current owners of the rights to use such land may transfer or lease the land to the license holder.

Incentives for Shale Gas Development

In order to incentivize the exploration, discovery and development of China s shale gas reserves, to increase the supply of natural gas and to relieve the imbalance between supply and demand of natural gas, the Ministry of Finance of China and China National Energy Administration issued the Notice on Subsidy for Shale Gas Development and Utilization (Ministry of Finance No. 847 [2012]), pursuant to which the central government will subsidize shale gas production companies at a rate of RMB 0.4 per cubic meter of shale gas produced from 2012 to 2015.

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China National Energy Administration issued the Shale Gas Industry Policy (NEA No. 5 [2013]) in October 2013, which classifies shale gas as a national strategic new industry and calls for more fiscal support for exploration and development of shale gas. In particular, subsidies should be given directly to a shale gas production company according to the amount of its shale gas development and utilization. Local governments are also encouraged to provide subsidies to shale gas production companies, with the subsidy amount to be determined by local fiscal authorities. The Policy also reduces or waives compensatory fee for mineral resources, license and royalty fees for shale gas production companies. For encouraged projects like shale gas exploration and discovery, the policy also waives customs duty for imported equipment and machineries that cannot be manufactured domestically in accordance with relevant regulations.

In April 2015, to facilitate the development of the shale gas industry, the Ministry of Finance of China and China National Energy Administration issued the Notice on Fiscal Subsidies for Shale Gas Development and Utilization (Ministry of Finance No. 112 [2015]) to further implement the policy of fiscally subsidizing the shale gas industry during the period of the thirteenth five-year plan, and the subsidy will be RMB 0.3 per cubic meter of shale gas produced and RMB 0.2 per cubic meter of shale gas produced from 2016 to 2018 and from 2019 to 2020, respectively.

In order to promote the development and utilization of shale gas, in March 2018, the Ministry of Finance and the State Administration of Taxation jointly issued the Notice on the Reduction of Resource Tax on Shale Gas (Ministry of Finance No. 26 [2018]) which provides that from April 1, 2018 to March 31, 2021, a 30% reduction shall be applied to the 6% tax rate applicable to shale gas.

Price Controls on Crude Oil

According to the Measures for Administration of Petroleum Products Price issued by NDRC on March 26, 2013 and Measures for Administration of Petroleum Products Price issued by NDRC on January 13, 2016, the crude oil price shall be determined by the enterprises on their own accord, by reference to the international market price. The price for supplying crude oil by us and CNPC to each other shall be determined by both the parties upon consultation in accordance with the principle that the cost for transporting domestic crude oil to the refinery is equivalent to the cost for importing crude oil from international market to the refinery. The price for providing crude oil by us and the CNPC to local refineries shall be determined in reference to the supply prices between the two corporations. The price of crude oil produced by CNOOC or other enterprises shall be determined on their own accord by reference to the international market price.

Price Controls on Natural Gas

In recent years, the pace of market-oriented natural gas price reforms has accelerated significantly. In April 2015, according to the change in the price of alternative energy, NDRC has reduced the price of non-residential incremental natural gas by RMB 0.44 per cubic meter, increased the price of stock natural gas by RMB 0.04 per cubic meter, and unified the stock natural gas and incremental natural gas prices. In November 2015, pursuant to the general guideline of furthering the price reform of resource products, NDRC released the Circular on Adjustment of the City-Gate Price of Non-Residential Stock Natural Gas (NDRC Pricing Circular 2688[2015]) to further liberalize the pricing of natural gas by replacing the reference ceiling price for city-gate prices of non-residential stock natural gas with a reference base rate. Starting from November 2016, suppliers and buyers may determine through negotiations the specific prices, subject to the cap of 120% of the reference base rate. In October 2016, NDRC has relaxed the control over service prices for gas prices used for fertilizer production, determined that the relevant prices of gas storage facilities were market-oriented, and launched a trial reform of the marketization of city-gate prices in Fujian Province. The city-gate prices for the supply of natural gas in Fujian Province were determined by the supplying and demanding parties through consultation, which further promoted the market-oriented reform of natural gas prices.

In August 2017, based on the results of the supervision and review of the pricing of natural gas pipelines, NDRC adjusted the pipeline transportation prices, and issued the Notice on Reducing the Non-Residential Natural Gas Reference City-Gate Price (NDRC Pricing Circular 1582[2017]) in conjunction with the adjustment of the natural gas value-added tax rate. Since September 1, 2017, the non-residential natural gas reference city-gate prices have been reduced by RMB 0.1 per cubic meter. NDRC encouraged the natural gas production and operation enterprises and users to actively enter the natural gas trading platform, and the prices of natural gas that have been openly traded on trading platforms such as the Shanghai Oil and Gas Exchange Center and Chongqing Oil and Gas Exchange Center are formed by the market. The marketization of domestic natural gas prices is further enhanced.

In May 2018, the NDRC issued the Notice on Adjustment of the City-Gate Price of Residential Gas (NDRC Pricing Circular No.794 [2018]) which came into effect on June 10, 2018, to adjust the price of natural gas for civil use and improve price mechanism pursuant to the notice. We have adjusted the sales price of natural gas within the prescribed scope.

Regulation of Pipelines Networks

In October 2016, NDRC issued the Interim Provisions for Management Measures of Natural Gas Pipeline Transmission Prices and the Interim Provisions for Supervision and Review of Natural Gas Pipeline Transmission Cost (for Trial Implementation) (NDRC Pricing Circular 2142[2016]).

In August 2017, according to the Interim Provisions for Management Measures of Natural Gas Pipeline Transmission Prices and the Interim Provisions for Supervision and Review of Natural Gas Pipeline Transmission Cost, after the supervision and review of the pricing of natural gas interprovincial pipelines, NDRC issued the Notice on Ratifying the Natural Gas Pipeline Transmission Prices (NDRC Pricing Circular 1581[2017]) to adjust the prices of natural gas interprovincial pipelines. Since September 1, 2017, based on the pipeline transmission prices (traffic price rate) of the Sichuan-East Gas Pipeline and Yulin-Jinan Pipeline published by the NDRC, along the transportation distance of the natural gas inlet and export, we have calculated and determined the prices of the gas transmission points for Sichuan-East Gas Pipeline and the Yulin-Jinan Pipeline and published the list of prices on our official website. We have updated the information disclosure on our website regarding the cost of operation and the maintenance expense on annual basis.

Regulation of Refining and Marketing of Refined Oil Products

Gasoline and Diesel Prices

Gasoline and diesel prices are government-guided.

In March 2013, NDRC released Circular on Establishment of Sound Price Formation Mechanism of Refined Oil Products (NDRC Pricing Circular 624[2013]), which specified that a reformed refined oil product price formation mechanism shall include: shortening of the refined oil product price adjustment period to 10 working days; elimination of the 4% price fluctuation on international market as a prerequisite for price adjustment; adjustment of the composition of benchmarked crude oil as a reference for domestic oil product prices. To save social resources, if the assessed adjustment in domestic refined oil product prices is less than RMB 50 per tonne, the adjustment will be postponed to next period. In cases of special conditions such as significant increase in domestic CPI, significant emergencies or significant fluctuations of crude oil price on international market which may trigger adjustment of domestic refined oil price, NDRC may implement ad hoc suspension, delay or narrowing of price adjustment upon the approval by the State Council. Upon elimination of the special conditions, the price formation mechanism may resume operation after NDRC obtains the State Council s for approval.

On September 16, 2013, a Circular of Relevant Opinions on Pricing Policies for Upgrading Oil Product Quality (NDRC Pricing Circular 1845[2013]) was promulgated by NDRC. The Circular provides that the prices of gasoline and diesel products shall be increased if the quality of such products is upgraded. For standard gasoline and diesel products that are upgraded to GB IV standards, their prices shall be raised by RMB

290 per tonne and RMB 370 per tonne, respectively; for gasoline and diesel products that are upgraded from GB IV to GB V standards, their price shall be raised by RMB 170 per tonne and RMB 160 per tonne, respectively. Prices for regular diesel shall be benchmarked against automobile diesel with same specification.

On January 13, 2016, NDRC made further adjustments to the pricing mechanism for refined oil products, effective immediately. When benchmark crude oil price falls below US$ 40/bbl, NDRC will not further adjust oil product prices, the unadjusted portion would be transferred into a risk fund, which can be used for energy conservation and emission reduction, refined oil product quality upgrading and security of and gas supply upon approval by relevant departments.

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Jet Fuels Price

During the transition period, the ex-factory price of the jet fuels (standard) will temporarily be determined by the buyers and the sellers, subject to a limit of no more than the CIF post-duty price in the Singapore market.

Regulation of Crude Oil and Refined Oil Products Market

On December 4, 2006, Ministry of Commerce of the PRC promulgated the Administrative Rules for Crude Oil Market and Administrative Rules for Refined Oil Products Market to open the wholesale market of crude oil and refined oil products to new market entrants, respectively.

The Notice of the National Energy Administration on Issuing the Measures for the Supervision and Administration of Fair Opening of Oil and Gas Pipelines Network Facilities (for Trial Implementation) (NEA No. 84 [2014]) requires that (i) oil and gas pipelines network facilities operating enterprises, in case of spare capacity of oil and gas pipelines network facilities, shall equally provide their pipeline network facilities to main third-party market players and provide transportation, storage, gasification, liquefaction, compression, and other services; (ii) the transportation (storage, gasification, etc.) prices determined by the pricing authorities in accordance with the relevant administrative provisions shall be implemented for the opening of oil and gas pipelines network facilities; (iii) oil and gas pipelines network facilities operating enterprises shall disclose the access standards, transportation (storage and gasification) prices, conditions for application for access, acceptance procedures, and other information on oil and gas pipelines network facilities on the websites or the information platforms designated by the National Energy Administration on a quarterly basis; and (iv) oil and gas pipeline network facilities operating enterprises shall submit the relevant status of oil and gas pipelines network facilities to the National Energy Administration or its dispatched offices semiannually.

Investment

Overseas investments by Chinese enterprises (other than financial enterprises) involving sensitive countries or regions or sensitive industries shall be submitted to MOFCOM for approval, and other overseas investments by Chinese enterprises will only need to submit a filing with MOFCOM or its regional branches.

According to Measures for the Administration of Overseas Investment of Enterprises (NDRC No.11 [2017]), promulgated on December 26, 2017, investments made directly, or indirectly through offshore entities controlled by the investor, involving sensitive countries or regions or sensitive industries shall be approved by the NDRC. For non-sensitive direct investments, namely investments for which the investor provide financing or guarantee, or make asset or interest investment directly, filings with NDRC or its local branches shall be made.

According to the Measures for Supervision and Administration of Overseas Investment by Central Enterprises (SASAC Decree No. 35[2017]) promulgated by the State-owned Assets Supervision and Administration Commission of the State Council, central enterprises shall establish a negative list for overseas investment under which prohibited investments and specially supervised investments shall be administered separately. Central enterprises shall not make any investments categorized as prohibited ones. The foreign investment projects listed in the special supervision category of the negative list shall be submitted to the SASAC for approval.

In accordance with the Administrative Measures for Overseas Investments (MOFCOM Order No. 3[2014]) issued by MOFCOM, overseas investments involving sensitive countries (regions) or sensitive industries shall be approved by MOFCOM. All other investments swill require only a filing with MOFCOM.

Taxation, Fees and Royalty

Companies which operate petroleum and petrochemical businesses in China are subject to a variety of taxes, fees and royalties.

Effective from December 1, 2014, the rate of mineral resource compensation charges on crude oil and natural gas is reduced to zero, and the applicable resource tax rate is correspondingly increased from 5% to 6%.

Effective from January 1, 2015, the threshold of the special oil income levy is increased from US$55 to 65 per barrel, and a five-level progressive rate is applied to special oil income levy collection based on the sale prices.

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From November 29, 2014 to January 12, 2015, the unit tax amount of consumption tax on gasoline, naphtha, solvent and lubricant have been adjusted three times and the current applicable consumption tax rates are set forth in the table below. For further information about consumption tax rates, see Note 7 to our consolidated financial statements.

Effective from May 1, 2016, business tax has been completed replaced by value-added tax to cover all the business sectors that used to fall under the business tax regime.

In April 2017, the State Council issued a notice to implement the reform of the existing mineral resources income levy system, in which the existing license fees of exploration rights and production rights will be integrated into mining rights occupancy fees, and will be dynamically adjusted based on the changes in mineral product prices and economic development needs. Collection methods and standards have not yet been released.

Applicable tax, fees and royalties on refined oil products and other refined oil products generally payable by us or by other companies in similar industries are shown below.

Tax Item	**Tax Base**	**Tax Rate/Fee Rate**
Enterprise income tax	Taxable income	25% effective from January 1, 2008.
Value-added tax	Revenue	10% for liquefied petroleum gas, natural gas, and low density polyethylene for production of agricultural film and fertilizers and 16% for other items. 6%, 10% and 16% for taxable services. We generally charge value-added tax to our customers at the time of settlement on top of the selling prices of our products on behalf of the taxation authority. We may directly claim refund from the value-added tax collected from our customers for value-added tax that we paid for (i) purchasing materials consumed during the production process; and (ii) charges paid for drilling and other engineering services.
Consumption tax	Aggregate volume sold or self-consumed	Effective from January 13, 2015, RMB 1.52 per liter for gasoline, naphtha, solvent and lubricant, and RMB 1.2 per liter for diesel, fuel oil and jet kerosene.
Import tariff	CIF China price	5% for gasoline, 6% for diesel, 9% for jet kerosene and 6% for fuel oil. In 2017, the applicable tax rate for motor gasoline and aviation gasoline, No. 5-7 fuel oil and diesel is 1% and 0% for jet kerosene and naphtha.
Resource tax	Aggregate Sales Revenue	Effective from December 1, 2014, for domestic production of crude oil and natural gas, the applicable tax rate is increased from 5% to 6% of the sales revenue, exemption or deduction may apply if qualified.
Resource compensation tax	Sales revenue of crude oil and natural gas	Effective from December 1, 2014, the applicable tax rate is reduced from 1% to zero.

Exploration license fee	Area	RMB 100 to RMB 500 per square kilometer per annum.
Production license fee	Area	RMB 1,000 per square kilometer per annum.
Royalty fee(1)	Production volume	Progressive rate of 0-12.5% for crude oil and 0-3% for natural gas.
City construction tax	Total payment of value-added tax and consumption tax	1%, 5% and 7%.
Education surcharge and local education surcharge	Total payment of value-added tax and consumption tax	3% for education surcharge and 2% for local education surcharge.
Special Oil Income Levy	Any revenue derived from sale of domestically produced crude oil when the realized crude oil price exceeds US$65 per barrel.	Progressive rate of 20% to 40% for revenues derived from crude oil with realized price in excess of US$65 per barrel.

(1) Sino-foreign oil and gas exploration and development cooperative projects whose contracts were signed prior to November 1, 2011 and have not yet expired are still subject to royalty fee, and the project companies of those cooperative projects are not subject to any other resource taxes or fees. Sino-foreign oil and gas exploration cooperative projects whose contracts are signed after November 1, 2011 are not subject to royalty fee, but are subject to resource taxes.

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C. ORGANIZATIONAL STRUCTURE

For a description of our relationship with Sinopec Group Company, see Item 4. Information on the Company A. History and Development of the Company and Item 7. Major Shareholders and Related Party Transactions. For a description of our significant subsidiaries, see Note 37 to our consolidated financial statements.

D. PROPERTY, PLANT AND EQUIPMENT

We own substantially all of our properties, plants and equipment relating to our business activities. See Item 4. Information on the Company B. Business Overview for description of our property, plant and equipment.

Environmental Matters

We are subject to various national environmental laws and regulations and also environmental regulations promulgated by the local governments in those jurisdictions we have operations, and we must pay the environmental tax for pollutant emissions. Usually the environmental tax increases for each incremental amount of discharge up to a certain level. Above a certain level prescribed by the pollutant discharge permits or other standards, the PRC regulations permit the local government to order any of our facilities to cure certain behavior causing environmental damage and subject to the central government s approval, the local government may also issue orders to close any of our facilities that fail to comply with the existing regulations. In addition, we have incurred capital expenditure specifically in compliance with the various environmental protection objectives set by the PRC government for the petroleum and chemical industry, to promote energy saving and environmental protection.

Our Energy Management and Environmental Protection Department is responsible for environmental management functions such as energy saving, emission reduction, environmental protection, water saving, comprehensive utilization of resources and clean production. Each of our production subsidiaries has implemented policies to control its pollutant emissions and discharge and to oversee compliance with the PRC environmental regulations.

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Most of our production facilities have their own environmental protection facilities, and the rest of our production facilities utilize available social resources, to guarantee the effective treatment of waste water, solid waste and waste gases, to ensure the compliance with applicable emission standard for our emission of waste water and waste gas, and to follow applicable disposal procedures for our disposal of solid waste.

Environmental regulations also require companies to file an environmental impact report to the Ministry of Ecology and Environment or local ecology and environment department for approval before undertaking any project with negative impact on the environment. When carrying out such projects, companies shall construct and implement environmental protection facilities and measures as required by the environmental bureau. After the completion of the construction, the projects shall be assessed according to the relevant requirements of environmental assessment, and the projects will only be permitted to operate after the assessment of its discharge treatment facilities, measures and pollutant discharge satisfactory environmental assessment and approval requirements and reporting on the national information platform for completion-based environmental protection check and acceptance of construction projects.

We believe our environmental protection systems and facilities are adequate for us to comply with current applicable national and local environmental protection regulations. The PRC government, however, may impose stricter regulations which may require additional expenditure on compliance with environmental regulations.

Our environmental protection expenditures were approximately RMB 6.4 billion in 2016, RMB 7.9 billion in 2017 and RMB 7.9 billion in 2018.

Insurance

In respect of our refining, petrochemical production, and marketing and sales operations, we currently maintain with Sinopec Group Company, under the terms of its Safety Production Insurance Fund (SPI Fund), approximately RMB 805.2 billion of coverage on our property and plants and approximately RMB 87.2 billion of coverage on our inventory. In 2018, we paid an insurance premium of approximately RMB 2.1 billion to Sinopec Group Company for such coverage.

Transportation vehicles and products in transit are not covered by Sinopec Group Company and we maintain insurance policies for those assets with insurance companies in the PRC.

The insurance coverage under SPI Fund applies to all domestic enterprises controlled by Sinopec Group Company under regulations published by the Ministry of Finance. We believe that, in the event of a major accident, we will be able to recover most of our losses from insurance proceeds paid under the SPI Fund or by insurance companies.

Pursuant to an approval of the Ministry of Finance, Sinopec Group Company entered into an agreement with PICC Property and Casualty Company Limited on January 29, 2002 to purchase a property and casualty policy which would also cover our assets. The policy provides for an annual maximum cumulative claim amount of RMB 4.0 billion and a maximum of RMB 2.36 billion per occurrence.

ITEM 4A. UNRESOLVED STAFF COMMENTS

None.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

A. GENERAL

The following discussion and analysis should be read in conjunction with our audited consolidated financial statements. Our consolidated financial statements have been prepared in accordance with IFRS. Certain financial information presented in this section is derived from our audited consolidated financial statements. Unless otherwise indicated, all financial data presented on a consolidated basis or by segment, are presented net of inter-segment transactions (i.e., inter-segment and other intercompany transactions have been eliminated).

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Critical Accounting Policies

Our reported consolidated financial condition and consolidated results of operations are sensitive to accounting methods, assumptions and estimates that underlie the preparation of our financial statements. We base our assumptions and estimates on historical experience and on various other assumptions that we believe to be reasonable and which form the basis for making judgments about matters that are not readily apparent from other sources. On an on-going basis, our management evaluates its estimates. Actual results may differ from those estimates as facts, circumstances and conditions change.

The selection of critical accounting policies, the judgments and other uncertainties affecting application of those policies and the sensitivity of reported results to changes in conditions and assumptions are factors to be considered when reviewing our financial statements. Our principal accounting policies are set forth in Note 2 to the consolidated financial statements. We believe the following critical accounting policies involve the most significant judgments and estimates used in the preparation of our financial statements.

Oil and gas properties and reserves

The accounting for the exploration and production activities of oil and gas is subject to accounting rules that are unique to the oil and gas industry. There are two methods to account for oil and gas business activities, the successful efforts method and the full cost method. We have elected to use the successful efforts method. The successful efforts method reflects the volatility that is inherent in exploring for mineral resources in that costs of unsuccessful exploratory efforts are charged to expense as they are incurred. These costs primarily include dry hole costs, seismic costs and other exploratory costs. Under the full cost method, these costs are capitalized and written-off or depreciated over time.

Engineering estimates of our oil and gas reserves are inherently imprecise and represent only approximate amounts because of the subjective judgements involved in developing such information. There are authoritative guidelines regarding the engineering criteria that have to be met before estimated oil and gas reserves can be designated as proved. Proved and proved developed reserves estimates are updated at least annually and take into account recent production and technical information about each field. In addition, as prices and cost levels change from year to year, the estimate of proved and proved developed reserves also changes. This change is considered a change in estimate for accounting purposes and is reflected on a prospective basis in relation to depreciation rates. Oil and gas reserves have a direct impact on the assessment of the recoverability of the carrying amounts of oil and gas properties reported in the financial statements. If proved reserves estimates are revised downwards, earnings could be affected by changes in depreciation expense or an immediate write-down of the property s carrying amount.

Future dismantlement costs for oil and gas properties are estimated with reference to engineering estimates after taking into consideration the anticipated method of dismantlement required in accordance with industry practices in similar geographic area, including estimation of economic life of oil and gas properties, technology and price level. The present values of these estimated future dismantlement costs are capitalized as oil and gas properties with equivalent amounts recognized as provisions for dismantlement costs.

Despite the inherent imprecision in these engineering estimates, these estimates are used in determining depreciation expense, impairment loss and future dismantlement costs. Capitalized costs of proved oil and gas properties are amortized on a unit-of-production method based on volumes produced and reserves.

Impairment for long-lived assets

If circumstances indicate that the net book value of a long-lived asset may not be recoverable, the asset may be considered impaired, and an impairment loss may be recognized in accordance with IAS 36 Impairment of Assets. The carrying amounts of long-lived assets are reviewed periodically in order to assess whether the recoverable amounts have declined below the carrying amounts. These assets are tested for impairment whenever events or changes in circumstances indicate that their recorded carrying amounts may not be recoverable. When such a decline has occurred, the carrying amount is reduced to recoverable amount. For goodwill, the recoverable amount is estimated annually. The recoverable amount is the greater of the net selling price and the value in use. It is difficult to precisely estimate selling price because quoted market prices for our assets or cash-generating units are not readily available. In determining the value in use, expected cash flows generated by the asset or the cash-generating unit are discounted to their present value, which requires significant judgement relating to level of sale volume, selling price, amount of operating costs and discount rate. Management uses all readily available information in determining an amount that is a reasonable approximation of recoverable amount, including estimates based on reasonable and supportable assumptions and projections of sale volume, selling price, amount of operating costs and discount rate.

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Impairment losses recognized for each of the three years ended December 31, 2016, 2017 and 2018 in our statement of income on long-lived assets are summarized as follows:

	2016	Year ended December 31, 2017 (RMB in millions)	2018
Exploration and production	11,605*	13,556*	4,274*
Refining	1,655	1,894	353
Marketing and distribution	267	675	264
Chemicals	2,898	4,922	1,374
Corporate and others		211	16
Total	16,425	21,258	6,281

* Information relating to the detailed analysis of the change in impairment losses is presented in Note 8 to the consolidated financial statements.

Depreciation

Property, plant and equipment, other than oil and gas properties, are depreciated on a straight-line basis over the estimated useful lives of the assets, after taking into account the estimated residual value. Management reviews the estimated useful lives of the assets at least annually in order to determine the amount of depreciation expense to be recorded during any reporting period. The useful lives are based on our historical experience with similar assets and take into account anticipated technological changes. The depreciation expense for future periods is adjusted if there are significant changes from previous estimates.

Measurement of expected credit losses

We measure and recognize expected credit losses, considering reasonable and supportable information about the relevant past events, current conditions and forecasts of future economic conditions. We regularly monitor and review the assumptions used for estimating expected credit losses. The changes in the impairment losses for bad and doubtful accounts of bills receivable and accounts receivable are as follows:

	2016	Year ended December 31, 2017 (RMB in millions)	2018
Balance as of January 1	525	683	612
Impairment losses recognized for the year	238	49	83
Reversal of impairment losses	(8)	(100)	(77)
Written off	(72)	(21)	(19)
Others		1	7
Balance as of December 31	683	612	606

Allowance for diminution in value of inventories

If the costs of inventories become higher than their net realizable values, an allowance for diminution in value of inventories is recognized. Net realizable value represents the estimated selling price in the ordinary course of business, less the estimated costs of completion and the estimated costs necessary to make the sale. Management bases the estimates on all available information, including the current market prices of the finished goods and raw materials, and historical operating costs. If the actual selling prices were to be lower or the costs of completion were to be higher than estimated, the actual allowance for diminution in value of inventories could be higher than estimated. Allowance for diminution in value of inventories is analyzed as follows:

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	Year ended December 31,		
	2016	2017	2018
	(RMB in millions)		
Balance as of January 1	4,402	920	1,155
Allowance for the year	430	436	5,535
Reversal of allowance on disposal	(10)	(13)	(114)
Written off	(4,021)	(190)	(217)
Others	119	2	17
Balance as of December 31	920	1,155	6,376

Recently Pronounced International Financial Reporting Standards

Information relating to the recently pronounced IFRS is presented in Note 1 to the consolidated financial statements.

Overview of Our Operations

We are the largest integrated petroleum and petrochemical company in China and one of the largest in Asia in terms of operating revenues. We engage in exploring for, developing and producing crude oil and natural gas, operating refineries and petrochemical facilities and marketing crude oil, natural gas, refined oil products and petrochemical products. We have reported our consolidated financial results according to the following four principal business segments and the corporate and others segment.

- *Exploration and Production Segment*, which consists of our activities related to exploring for and developing, producing and selling crude oil and natural gas;

- *Refining Segment*, which consists of purchasing crude oil from our exploration and production segment and from third parties, processing of crude oil into refined oil products, selling refined oil products principally to our marketing and distribution segment;

- *Marketing and Distribution Segment*, which consists of purchasing refined oil products from our refining segment and third parties, and marketing, selling and distributing refined oil products by wholesale to large customers and independent distributors and retail through our retail network;

- *Chemicals Segment*, which consists of purchasing chemical feedstock principally from the refining segment and producing, marketing, selling and distributing chemical products; and

- *Corporate and Others Segment*, which consists principally of trading activities of the import and export subsidiaries and our research and development activities.

B. CONSOLIDATED RESULTS OF OPERATIONS

Year Ended December 31, 2018 Compared with Year Ended December 31, 2017

In 2018, our total operating revenues were RMB 2,891.2 billion, representing an increase of 22.5% over 2017. Our operating income was RMB 82.3 billion, representing an increase of 15.1% over 2017.

The following table sets forth major revenue and expense items in the consolidated statement of income for the years ended December 31, 2017 and 2018.

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	Year Ended December 31,		
	2017	2018	Change from 2017 to 2018
	(RMB in millions)		(%)
Operating revenues	2,360,193	2,891,179	22.5
Sales of goods	2,300,470	2,825,613	22.8
Other operating revenues	59,723	65,566	9.8
Operating expenses	(2,288,723)	(2,808,915)	22.7
Purchased crude oil, products and operating supplies and expenses	(1,770,651)	(2,292,983)	29.5
Selling, general and administrative expenses	(64,973)	(65,642)	1.0
Depreciation, depletion and amortization	(115,310)	(109,967)	(4.6)
Exploration expenses, including dry holes	(11,089)	(10,744)	(3.1)
Personnel expenses	(74,854)	(77,721)	3.8
Taxes other than income tax	(235,292)	(246,498)	4.8
Other operating (expenses)/income, net	(16,554)	(5,360)	(67.6)
Operating income	71,470	82,264	15.1
Net finance costs	(1,560)	1,001	(164.2)
Investment income and share of profits less losses from associates and joint ventures	16,787	15,845	(5.6)
Earnings before income tax	86,697	99,110	14.3
Tax expense	(16,279)	(20,213)	24.2
Net income	70,418	78,897	12.0
Attributable to:			
Owners of the Company	51,244	61,618	20.2
Non-controlling interests	19,174	17,279	(9.9)

Operating revenues

In 2018, our sales of goods were RMB 2,825.6 billion, representing an increase of 22.8% over 2017. This was mainly attributable to the prices increase of major products. Meanwhile, sales volume also increased as a result of the Company s efforts in bringing our advantages in distribution network into full play, constantly promoting targeted marketing, optimizing allocation of internal and external resources and reinforcing market expansion.

The following table sets forth our external sales volume, average realized prices and the respective rates of change from 2017 to 2018 for our major products:

	Sales Volume		Change from 2017 to 2018	Average Realized Price		Change from 2017 to 2018
	2017	2018		2017	2018	
	(thousand tonnes)		(%)	(RMB per tonne)		(%)
Crude oil	6,567	6,595	0.4	2,390	3,100	29.7
Natural gas	22,529(1)	24,197(1)	7.4	1,290(2)	1,400(2)	8.5
Gasoline	83,933	88,057	4.9	6,941	7,870	13.4
Diesel	88,848	84,630	(4.7)	5,038	5,996	19.0
Kerosene	25,557	25,787	0.9	3,531	4,562	29.2
Basic chemical feedstock	35,964	40,520	12.7	4,855	5,488	13.0
Monomer and polymer for synthetic fiber	10,267	11,127	8.4	6,038	6,971	15.5
Synthetic resin	13,199	14,433	9.3	8,155	8,634	5.9
Synthetic fiber	1,304	1,314	0.8	8,556	9,712	13.5
Synthetic rubber	1,128	1,114	(1.2)	11,913	10,619	(10.9)

Chemical Fertilizer	698	794	13.8	2,010	2,096	4.3

(1) million cubic meters

(2) RMB per thousand cubic meters

Sales of crude oil and natural gas

Most of crude oil and a small portion of natural gas we produced were used internally for refining and chemical production and the remaining were sold to external customers. In 2018, the total revenue from crude oil, natural gas and other upstream products that were sold externally amounted to RMB 93.5 billion, representing an increase of 35.2% over 2017. The change was mainly due to the company seized opportunities of the prices increase in crude oil and natural gas to maintain steady crude oil production and rapidly expanded production of natural gas.

Sales of refined petroleum products

In 2018, our refining segment and marketing and distribution segment sell petroleum products (mainly consisting of gasoline, diesel and kerosene which are referred to as the refined oil products and other refined petroleum products) to external parties. The external sales revenue realized by these two segments were RMB 1,557.9 billion, accounting for 53.9% of our operating revenues and representing an increase of 17.6% over 2017. The increase was mainly because of the increase in petroleum products prices, as well as the Company actively coped with market challenge caused by resources oversupply, optimized production and operation with the market-oriented approach and maintained high utilization rate. The sales revenue of gasoline, diesel and kerosene was RMB 1,318.1 billion, accounting for 84.6% of the total revenue of other refined petroleum products and representing an increase of 17.6% over 2017. The sales revenue of other refined petroleum products was RMB 239.8 billion, accounting for 15.4% of the total revenue of petroleum products and representing an increase of 17.6% over 2017.

Sales of chemical products

Our external sales revenue of chemical products was RMB 457.4 billion, accounting for 15.8% of our operating revenues and representing an increase of 22.4% over 2017. This was mainly attributable to the increase in price and sales volume of chemical products, which resulting from the Company seized good market opportunities and strengthened the coordination between production and marketing to positively expand market share and trading scale.

Revenue from corporate and others

In 2018, our corporate and others realized operating revenue of RMB 1,368.6 billion (including an operating revenue of RMB 1,363.4 billion in import and export trade business), representing an increase of 40.4% over 2017. This was mainly attributable to the increase in trade amount of both crude oil and overseas refined oil, and the high increase of our business on Epec platform, our e-commerce platform integrating procurement and sales of industrial goods.

Operating expenses

In 2018, our operating expenses were RMB 2,808.9 billion, representing an increase of 22.7 % over 2017. Among the operating expenses:

Purchased crude oil, products and operating supplies and expenses were RMB 2,293.0 billion, representing an increase of 29.5 % over 2017, accounting for 81.6 % of the total operating expenses, of which:

- crude oil purchase expenses were RMB 701.3 billion, representing an increase of 41.1% over 2017. In 2018, the total throughput of crude oil that was purchased externally was 227.2 million tonnes (excluding the volume processed for third parties), representing an increase of 7.7% over 2017; the average unit processing cost for crude oil purchased externally was RMB 3,452 per tonne, representing an increase of 30.0% over 2017;

- refined oil purchase expenses were RMB 355.5 billion, representing an increase of 18.3 % over 2017, which was mainly attributable to the increase in prices of externally purchased refined oil products, which were in line with the increase in prices of crude oil;

- trade purchase expenses were RMB 655.4 billion, representing an increase of 30.1% over 2017, which was mainly attributable to the increase in prices of externally purchased crude oil and refined oil products in the trading business; and

- other purchasing expenses were RMB 580.7 billion, representing an increase of 23.8% over 2017. This was mainly due to the increase in prices of externally purchased oil related products in line with the increase in prices of crude oil.

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Selling, general and administrative expenses totaled RMB 65.6 billion, representing an increase of 1.0% over 2017, mainly attributed to the increase of our research and development expenses.

Depreciation, depletion and amortization was RMB 110.0 billion, representing a 4.6% decrease over 2017. This was mainly due to the comprehensive impact of the increase in the Company s reserves of crude oil and natural gas and the changes in the Company s crude oil and natural gas assets.

Exploration expenses, including dry holes were RMB 10.7 billion, representing an decrease of 3.1% over 2017. This was mainly due to the Company constantly reinforced the management of exploration investment, improved exploration success rate.

Personnel expenses were RMB 77.7 billion, representing an increase of 3.8% over 2017.

Taxes other than income tax were RMB 246.5 billion, representing an increase of 4.8% over 2017. This was mainly because of increased consumption tax as a result of the increase in the sales volume of refined oil products, as well as resource tax and special oil income levy increased resulting from increase in crude oil price.

Other operating (expenses)/income, net were RMB 5.4 billion, decreased by 67.6% over the same period of 2017. This was mainly attributed to the decrease in impairment during the year.

Operating income

In 2018, our operating income was RMB 82.3 billion, representing an increase of 15.1% over 2017. Loss from upstream business greatly reduced and downstream business achieved good profit under the fierce market competition, as the Company persistently centralized on value-oriented operation, focused on improving asset quality, increasing asset efficiency, and upgrading asset structure.

Net finance costs

In 2018, our net finance costs were negative RMB 1.0 billion, representing a decrease of RMB 2.6 billion over 2017. This decrease in finance costs was mainly attributable to the increase in the interest income as a result of our cash flow management.

Earnings before income tax

In 2018, our earnings before income tax were RMB 99.1 billion, representing an increase of 14.3% over 2017.

Tax expense

In 2018, we recognized income tax expense of RMB 20.2 billion, representing an increase of 24.2% over 2017. That was mainly due to the growth in profits and the decrease in exempt investment income.

Net income attributable to non-controlling interests

In 2018, our net income attributable to non-controlling interests was RMB 17.3 billion, representing a decrease of RMB 1.9 billion over 2017.

Net income attributable to equity shareholders of the Company

In 2018, our net income attributable to our equity shareholders was RMB 61.6 billion, representing an increase of 20.2% over 2017.

Year Ended December 31, 2017 Compared with Year Ended December 31, 2016

In 2017, our total operating revenues were RMB 2,360.2 billion, representing an increase of 22.2% over 2016. Our operating income was RMB 86.7 billion, representing an increase of 8.2% over 2016.

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The following table sets forth major revenue and expense items in the consolidated statement of income for the years ended December 31, 2016 and 2017.

	Year Ended December 31,		
	2016	2017	Change from 2016 to 2017
	(RMB in millions)		(%)
Operating revenues	1,930,911	2,360,193	22.2
Sales of goods	1,880,190	2,300,470	22.4
Other operating revenues	50,721	59,723	17.7
Operating expenses	(1,853,718)	(2,288,723)	23.5
Purchased crude oil, products and operating supplies and expenses	(1,379,691)	(1,770,651)	28.3
Selling, general and administrative expenses	(64,360)	(64,973)	1.0
Depreciation, depletion and amortization	(108,425)	(115,310)	6.4
Exploration expenses, including dry holes	(11,035)	(11,089)	0.5
Personnel expenses	(63,887)	(74,854)	17.2
Taxes other than income tax	(232,006)	(235,292)	1.4
Other operating (expenses)/income, net	5,686	(16,554)	
Operating income	77,193	71,470	(7.4)
Net finance costs	(6,611)	(1,560)	(76.4)
Investment income and share of profits less losses from associates and joint ventures	9,569	16,787	75.4
Earnings before income tax	80,151	86,697	8.2
Tax expense	(20,707)	(16,279)	(21.4)
Net income	59,444	70,418	18.5
Attributable to:			
Owners of the Company	46,672	51,244	9.8
Non-controlling interests	12,772	19,174	50.1

Operating revenues

In 2017, our sales of goods were RMB 2,300.5 billion, representing an increase of 22.4% over 2016. This was mainly attributable to our expanded market by taking opportunities along with oil price s gradually rising, and the increase of prices and sales volume of main crude oil and petrochemical products in 2017.

The following table sets forth our external sales volume, average realized prices and the respective rates of change from 2016 to 2017 for our major products:

	Sales Volume		Change from 2016 to 2017	Average Realized Price		Change from 2016 to 2017
	2016	2017		2016	2017	
	(thousand tonnes)		(%)	(RMB per tonne)		(%)
Crude oil	6,808	6,567	(3.5)	1,628	2,390	46.8
Natural gas	19,008(1)	22,529	18.5	1,258(2)	1,290	2.5
Gasoline	77,480	83,933	8.3	6,386	6,941	8.7
Diesel	91,492	88,848	(2.9)	4,482	5,038	12.4
Kerosene	25,164	25,557	1.6	2,807	3,531	25.8
Basic chemical feedstock	32,248	35,964	11.5	4,054	4,855	19.8

Monomer and polymer for synthetic fiber	7,146	10,267	43.7	5,325	6,038	13.4
Synthetic resin	12,223	13,199	8.0	7,488	8,155	8.9
Synthetic fiber	1,369	1,304	(4.7)	7,113	8,556	20.3
Synthetic rubber	1,098	1,128	2.7	9,608	11,913	24.0
Chemical Fertilizer	714	698	(2.2)	1,612	2,010	24.7

(1) million cubic meters

(2) RMB per thousand cubic meters

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Sales of crude oil and natural gas

Most of crude oil and a portion of natural gas we produced were used internally for refining and chemical production and the remaining were sold to external customers. In 2017, the total revenue from crude oil, natural gas and other upstream products that were sold externally amounted to RMB 69.2 billion, representing an increase of 45.8% over 2016. The change was mainly due to price increase of crude oil and sales volume increase of natural gas in 2017.

Sales of refined petroleum products

In 2017, our refining segment and marketing and distribution segment sell petroleum products (mainly consisting of gasoline, diesel and kerosene which are referred to as the refined oil products and other refined petroleum products) to external parties. The external sales revenue realized by these two segments were RMB 1,324.4 billion, accounting for 56.1% of our operating revenues and representing an increase of 17.2% over 2016. The increase was mainly because of the increase in prices of various refined petrochemical products. The sales revenue of gasoline, diesel and kerosene was RMB 1,120.4 billion, accounting for 84.6% of the total revenue of other refined petroleum products and representing an increase of 14.8% over 2016. The sales revenue of other refined petroleum products was RMB 204.0 billion, accounting for 15.4% of the total revenue of petroleum products and representing an increase of 31.8% over 2016.

Sales of chemical products

Our external sales revenue of chemical products was RMB 373.8 billion, accounting for 15.8% of our operating revenues and representing an increase of 31.5% over 2016. This was mainly attributable to the increase in prices and sales volume of chemical products.

Revenue from corporate and others

In 2017, our corporate and others realized sales revenue of RMB 533.1 billion, accounting for 22.6% of our operating revenue and representing an increase of 27.5% over 2016. This was mainly attributable to the price increase of trading crude oil and refined oil.

Operating expenses

In 2017, our operating expenses were RMB 2,288.7 billion, representing an increase of 23.5% over 2016, which was mainly attributable to the prices increase of crude oil and petrochemical products. Among the operating expenses:

Purchased crude oil, products and operating supplies and expenses were RMB 1,770.7 billion, representing an increase of 28.3% over 2016, accounting for 77.4% of the total operating expenses, of which:

- crude oil purchase expenses were RMB 497.1 billion, representing an increase of 33.0% over 2016. In 2017, the total throughput of crude oil that was purchased externally was 211.03 million tonnes (excluding the amount processed for third parties), representing an increase of 4.3% over 2016; the average unit processing cost for crude oil purchased externally was RMB 2,655 per tonne, representing an increase of 27.4% over 2016;

- refined oil purchase expenses were RMB 300.5 billion, representing an increase of 23.3% over 2016, which was mainly attributable to the prices increase of purchased refined oil along with the price increase of crude oil;

- trade purchase expenses were RMB 503.9 billion, representing an increase of 27.7% over 2016, which was mainly attributable to the price increase of trading crude oil and refined oil; and

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- other purchasing expenses were RMB 469.2 billion, representing an increase of 27.6% over 2016. This was mainly due to the price increase of other petroleum related products purchased from external sources along with the price increase of crude oil.

Selling, general and administrative expenses totaled RMB 65.0 billion, representing an increase of 1.0% over 2016.

Depreciation, depletion and amortization was RMB 115.3 billion, representing an increase of RMB 6.9 billion and 6.4% over 2016. This was mainly due to the increase of exploration and production segment by RMB 4.9 billion over 2016.

Exploration expenses, including dry holes were RMB 11.1 billion, representing an increase of 0.5% over 2016.

Personnel expenses were RMB 74.9 billion, representing an increase of 17.2% over 2016. That was mainly because the Company promoted the reform of employment system, transferred some labours into contracted employees, which increased salary and other expenses. To implement the requirement of deepening the reform as required by the Central government, the Company handed over parts of its subsidiaries social insurance to local government, and paid relevant fees according to the local government s requirements. As the Company improved its profit in 2017, income of employee was increased accordingly in line with its incentive mechanism.

Taxes other than income tax were RMB 235.3 billion, representing an increase of 1.4% over 2016.

Other operating (expenses)/income, net were RMB 16.6 billion, increased by RMB 22.2 billion over the same period of 2016. That was mainly due to the non-operating income from capital injection of Sichuan-to-East China Pipeline Co.

Operating income

In 2017, our operating income was RMB 71.5 billion, representing a decrease of 7.4% over 2016. Excluding the capital introduction in Sichuan-to-East China gas pipeline in 2016 and the acquisition of Shanghai SECCO in 2017, our operating income in 2017 increased by 19.2% over 2016.

Net finance costs

In 2017, our net finance costs were RMB 1.6 billion, representing a decrease of 76.4% over 2016. This decrease in finance costs was mainly attributable to (i) interest expenses decreased by RMB 2.1 billion as a result of the significant decrease of interest-bearing debts ; (ii) foreign exchange gain of RMB 0.3 billion, increased by RMB 0.9 billion as compared with 2016; (iii) interest income increased by RMB 2.0 billion due to the increase of monetary reserve.

Earnings before income tax

In 2017, our earnings before income tax were RMB 86.7 billion, excluding the capital introduction in Sichuan-to-East China gas pipeline in 2016 and the acquisition of Shanghai SECCO in 2017, representing an increase of 38.9% over 2016.

Tax expense

In 2017, we recognized income tax expense of RMB 16.3 billion, representing a decrease of 21.4% over 2016. That was mainly due to the increase in exempt investment income.

Net income attributable to non-controlling interests

In 2017, our net income attributable to non-controlling interests was RMB 19.2 billion, representing an increase of RMB 6.4 billion over 2016.

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Net income attributable to equity shareholders of the Company

In 2017, our net income attributable to our equity shareholders was RMB 51.2 billion, representing an increase of 9.8% over 2016.

C. DISCUSSIONS ON RESULTS OF SEGMENT OPERATIONS

We divide our operations into four business segments (exploration and production segment, refining segment, marketing and distribution segment and chemicals segment) and corporate and others. Unless otherwise specified, the inter-segment transactions have not been eliminated in the financial data discussed in this section. In addition, the operating revenue data of each segment have included the other operating revenues of this segment.

The following table sets forth the operating revenues by each segment, the contribution of external sales and inter-segment sales as a percentage of operating revenues before elimination of inter-segment sales, and the contribution of external sales as a percentage of consolidated operating revenues (i.e. after elimination of inter-segment sales) for the periods indicated.

	Year Ended December 31,			As a Percentage of Consolidated Operating Revenues Before Elimination of Inter-segment Sales		As a Percentage of Consolidated Operating Revenues After Elimination of Inter-segment Sales	
	2016	2017	2018	2017	2018	2017	2018
		(RMB in billions)		(%)	(%)	(%)	(%)
Exploration and production							
External sales(1)	57	80	104	2.1	2.2	3.4	3.6
Inter-segment sales	59	78	96	2.0	2.0		
Total operating revenue	116	158	200	4.1	4.2		
Refining							
External sales(1)	108	138	154	3.6	3.2	5.8	5.3
Inter-segment sales	748	874	1,109	23.0	22.9		
Total operating revenue	856	1,012	1,263	26.6	26.1		
Marketing and distribution							
External sales(1)	1,049	1,220	1,441	32.1	29.9	51.7	49.9
Inter-segment sales	4	4	5	0.1	0.1		
Total operating revenue	1,053	1,224	1,446	32.2	30.0		
Chemicals							
External sales(1)	297	388	473	10.2	9.8	16.5	16.4
Inter-segment sales	38	50	74	1.3	1.5		
Total operating revenue	335	438	547	11.5	11.3		
Corporate and others							
External sales(1)	420	534	719	14.0	14.9	22.6	24.8
Inter-segment sales	320	440	650	11.6	13.5		
Total operating revenue	740	974	1,369	25.6	28.4		
Total operating revenue before inter-segment eliminations	3,100	3,806	4,825	100.0	100.0		
Elimination of inter-segment sales	(1,169)	(1,446)	(1,934)				
Consolidated operating revenues	1,931	2,360	2,891			100.0	100.0

(1) include other operating revenues.

The following table sets forth the operating revenues, operating expenses and operating income/(loss) by each segment before elimination of the inter-segment transactions for the periods indicated, and the changes from 2017 to 2018.

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	Year Ended December 31,			Change from
	2016	2017 (RMB in billions)	2018	2017 to 2018 (%)
Exploration and production				
Total operating revenues	116	158	200	27.1
Total operating expenses	(153)	(204)	(210)	3.4
Total operating income/(loss)	(37)	(46)	(10)	(78.0)
Refining				
Total operating revenues	856	1,012	1,263	24.9
Total operating expenses	(800)	(947)	(1,209)	27.6
Total operating (loss)/income	56	65	54	(15.7)
Marketing and distribution				
Total operating revenues	1,053	1,224	1,446	18.2
Total operating expenses	(1,021)	(1193)	(1,423)	19.3
Total operating income/(loss)	32	31	23	(25.7)
Chemicals				
Total operating revenues	335	438	547	24.9
Total operating expenses	(314)	(411)	(520)	26.5
Total operating (loss)/income	21	27	27	0.1
Corporate and others				
Total operating revenues	740	974	1,369	40.4
Total operating expenses	(737)	(979)	(1,378)	40.7
Total operating (loss)/income	3	(5)	(9)	
Elimination of inter-segment income	2	(2)	(4)	

Exploration and Production Segment

Most of the crude oil and a small portion of the natural gas produced by the exploration and production segment were used for our refining and chemicals operations. Most of our natural gas and a small portion of crude oil were sold to other customers.

Year Ended December 31, 2018 Compared with Year Ended December 31, 2017

In 2018, the operating revenues of this segment were RMB 200.2 billion, representing an increase of 27.1% over 2017. This was mainly attributed to the rise of realized price of crude oil and natural gas as well as the expansion of natural gas and LNG business.

This segment sold 34.8 million tonnes of crude oil and 26.3 billion cubic meters of natural gas in 2018, representing a decrease of 1.5% and an increase of 7.2% over 2017, respectively; 8.3 billion cubic meters of gasified LNG, representing an increase of 72.9% over 2017; and 2.9 million tonnes of LNG, representing an increase of 25.1% over 2017, The average realized price of crude oil and natural gas was RMB 3,046 per tonne and RMB 1,410 per thousand cubic meters, respectively, representing an increase of 30.1% and 8.8%, respectively, over 2017, and the average realized price of gasified LNG and LNG was RMB 1,934 per thousand cubic meters and RMB 3,779 per tonne, respectively, representing an increase of 11.0% and 23.7%, respectively.

In 2018, the operating expenses of this segment were RMB 210.3 billion, representing an increase of 3.4% over 2017. This was mainly due to:

- Taxes such as resource taxes and special oil income levy increased by RMB2.8 billion due to increase of crude oil prices;

- Personnel expenses increased by RMB 2.4 billion;

- Increase of purchasing expenses by RMB 16.2 billion as a result of the expansion of LNG business as well as the increase in purchase price;

- Depreciation, depletion and amortization decreased by RMB 6.5 billion; and

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- Impairment of assets decreased by RMB 9.3 billion.

The lifting cost for oil and gas was RMB 796 per tonne in 2018, representing a slight increase of 1.0% over 2017.

In 2018, the exploration and production segment seized the opportunity of oil price increase, focused on high-efficiency exploration and production, and effectively increased the production of crude oil and natural gas. The operating loss of the exploration and production segment were RMB 10.1 billion, representing a decrease by RMB 35.8 billion over 2017. Excluding the long-term impairment of assets, the operating loss of the exploration and production segment was RMB 5.8 billion over 2017.

Year Ended December 31, 2017 Compared with Year Ended December 31, 2016

In 2017, the operating revenues of this segment were RMB 157.5 billion, representing an increase of 35.9% over 2016. This was mainly attributed to the rise of realized price of crude oil and natural gas as well as expansion of LNG business.

This segment sold 35.31 million tonnes of crude oil and 24.48 billion cubic meters of natural gas in 2017, representing a decrease of 2.9% and an increase of 19.1% over 2016, respectively; 4.82 billion cubic meters of gasified LNG, representing an increase of 118.9% over 2016; and 2.28 million tonnes of LNG, representing an increase of 43.7% over 2016, The average realized price of crude oil and natural gas were RMB 2,341 per tonne and RMB 1,296 per thousand cubic meters, respectively, representing an increase of 35.0% and 2.3%, respectively, over 2016, and the average realized price of gasified LNG and LNG were RMB 1,742 per thousand cubic meters and RMB 3,056 per tonne, respectively, representing an increase of 2.0% and 24.0%, respectively.

In 2017, the operating expenses of this segment were RMB 204 billion, representing an increase of 33.3% over 2016. This was mainly due to:

- Depreciation, depletion and amortization increased by RMB 4.9 billion;

- Impairment of assets increased by RMB 2.0 billion;

- Personnel expenses increased by RMB 1.7 billion;

- Increase of resources tax by RMB 1.0 billion over the same period of 2016 due to price increase of crude oil;

- Increase of purchasing expenses by RMB 15.1 billion as a result of the expansion of LNG business; and

- other income (net) decreased by RMB 20.6 billion, as a result of the restructuring of Sichuan-to-East China Pipeline Co in 2016.

The lifting cost for oil and gas was RMB 788.3 per tonne in 2017, representing a slight increase of 0.3% over 2016.

In 2017, the operating loss of the exploration and production segment were RMB 45.9 billion, representing an increase by RMB 9.3 billion over 2016. Excluding the restructuring of Sichuan-to-East China Pipeline Co., the operating loss of the exploration and production segment decreased by 11.3 billion over 2016.

Refining Segment

Business activities of the refining segment consist of purchasing crude oil from third parties and from our exploration and production segment, processing crude oil into refined oil products, selling gasoline, diesel and kerosene to the marketing and distribution segment, selling a portion of chemical feedstock to our chemicals segment, and selling other refined oil products to the domestic and overseas customers.

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Year Ended December 31, 2018 Compared with Year Ended December 31, 2017

In 2018, the operating revenues of this segment were RMB 1,263.4 billion, representing an increase of 24.9% over 2017. This was mainly attributable to the increase in products prices, as well as the Company s efforts in expanding the refinery throughput and increasing the sales volumes.

The table below sets forth sales volume and average realized prices by product for 2018 and 2017, as well as the percentage changes in sales volume and average realized prices for the periods shown.

	Sales volume		Change from	Average realized prices		Change from
	2017	**2018**	**2017 to 2018**	**2017**	**2018**	**2017 to 2018**
	(thousand tonnes)		**(%)**	**(RMB per tonne)**		**(%)**
Gasoline	54,273	59,746	10.1	6,538	7,386	13.0
Diesel	60,680	62,676	3.3	4,962	5,766	16.2
Kerosene	17,080	22,418	31.3	3,527	4,515	28.0
Chemical feedstock	36,951	38,524	4.3	3,204	3,910	22.0
Other refined oil products	58,801	61,439	4.5	2,929	3,312	13.1

In 2018, our sales revenues of gasoline were RMB 441.3 billion, representing an increase of 24.4% over 2017; the sales revenues of diesel were RMB 361.4 billion, representing an increase of 20.0% over 2017; the sales revenues of kerosene were RMB 101.2 billion, representing an increase of 68.0% over 2017; the sales revenues of chemical feedstock were RMB 150.6 billion, representing an increase of 27.2% over 2017; and the sales revenues of other refined oil products other than gasoline, diesel, kerosene and chemical feedstock were RMB 203.5 billion, representing an increase of 18.2% over 2017.

This segment s operating expenses were RMB 1,208.6 billion in 2018, representing an increase of 27.6% over 2017, which is mainly attributable to the increase in refinery throughput and procurement cost of crude oil.

In 2018, the average processing cost of crude oil was RMB 3,548 per tonne, representing an increase of 27.9 % over 2017. Refining throughput were 248.3 million tonnes (excluding the volume processed for third parties), representing an increase of 7.8 % over 2017. In 2018, the total costs of crude oil processed were RMB 880.8 billion, representing an increase of 37.9 % over 2017.

The refining margin was RMB 461 per tonne in 2018, representing a decrease of RMB 49 per tonne compared with 2017. This is mainly due to the increased procurement cost of crude oil, as well as the narrowed gross margin of refined petroleum products other than gasoline, diesel, kerosene and chemical feedstock.

In 2018, the unit refining cash operating cost (defined as operating expenses less the processing cost of crude oil and refining feedstock, depreciation and amortization, taxes other than income tax and other operating expenses, then divided by the throughput of crude oil and refining feedstock) was RMB 180 per tonne, an increase of RMB 5.1 per tonne over 2017, mainly because of increased operating expenses resulted from quality upgrading of refined oil products as well as product mix optimization.

This segment s operating profit of the segment was RMB 54.8 billion in 2018, representing a decrease of RMB 10.2 billion as compared with 2017.

Year Ended December 31, 2017 Compared with Year Ended December 31, 2016

In 2017, the operating revenues of this segment were RMB 1,011.9 billion, representing an increase of 18.2% over 2016. This was mainly attributable to the price increase of refined oil products.

The table below sets forth sales volume and average realized prices by product for 2017 and 2016, as well as the percentage changes in sales volume and average realized prices for the periods shown.

	Sales volume 2016	2017	Change from 2016 to 2017	Average realized prices 2016	2017	Change from 2016 to 2017
	(thousand tonnes)		(%)	(RMB per tonne)		(%)
Gasoline	52,461	54,273	3.5	5,904	6,538	10.7
Diesel	58,734	60,680	3.3	4,505	4,962	10.1
Kerosene	14,529	17,080	17.6	2,814	3,527	25.3
Chemical feedstock	36,408	36,951	1.5	2,584	3,204	24.0
Other refined oil products	55,742	58,801	5.5	2,529	2,929	15.8

In 2017, the domestic gasoline and diesel prices were raised 11 times and lowered 6 times. The 90# gasoline price (tax included) was accumulatively increased by RMB 435 per tonne, and the 0# diesel price (tax included) was increased by RMB 420 per tonne cumulatively.

In 2017, our sales revenues of gasoline were RMB 354.8 billion, representing an increase of 14.6% over 2016; the sales revenues of diesel were RMB 301.1 billion, representing an increase of 13.8% over 2016; the sales revenues of kerosene were RMB 60.2 billion, representing an increase of 47.3% over 2016; the sales revenues of chemical feedstock were RMB 118.4 billion, representing an increase of 25.8% over 2016; and the sales revenues of other refined oil products other than gasoline, diesel, kerosene and chemical feedstock were RMB 172.2 billion, representing an increase of 22.2% over 2016.

This segment s operating expenses were RMB 946.8 billion in 2017, representing an increase of 18.4% over 2016, which is mainly attributable to the increase in procurement cost of crude oil.

In 2017, the average processing cost of crude oil was RMB 2,774 per tonne, representing an increase of 26.4% over 2016. Refining throughput were 230.30 million tonnes (excluding the volume processed for third parties), representing an increase of 4.2% over 2016. In 2017, the total costs of crude oil processed were RMB 638.8 billion, representing an increase of 31.8% over 2016.

The refining margin was RMB 510.7 per tonne in 2017, representing an increase of RMB 38.8 per tonne compared with 2016. This is mainly due to the increased proportion of high value added products (volume of gasoline with high octane number and jet fuel increased by 0.7% and 5.6% over 2016 and diesel to gasoline ratio down to 1.17), the promotion of quality upgrading of refined oil products (output of gasoline and diesel with GB V standard or above increased by 58% over 2016), enlarged total refinery throughput by increasing the export volume, and further improved margins for LPG, asphalt and other refined oil products by our centralized marketing advantages brought fully into play.

In 2017, the unit refining cash operating cost (defined as operating expenses less the processing cost of crude oil and refining feedstock, depreciation and amortization, taxes other than income tax and other operating expenses, then divided by the throughput of crude oil and refining feedstock) was RMB 175.2 per tonne, an increase of RMB 9.5 per tonne over 2016, mainly because of increased operating expenses resulting from newly operated facilities related to quality upgrading of refined oil products as well as safety enhancement and environment protection.

This segment s operating profit of the segment was RMB 65.0 billion in 2017, representing an increase of RMB 8.7 billion or 15.5% as compared with 2016.

Marketing and Distribution Segment

The business activities of the marketing and distribution segment include purchasing refined oil products from our refining segment and third parties, making wholesale and distribution to domestic customers, and retail of the refined oil products through this segment s retail distribution network, as well as providing related services.

Year Ended December 31, 2018 Compared with Year Ended December 31, 2017

In 2018, the operating revenues of this segment were RMB 1,446.6 billion, representing an increase of 18.2% compared with 2017.

In 2018, the sales revenues of gasoline, diesel and kerosene were RMB 693.1 billion, RMB 509.0 billion and RMB 117.6 billion, representing an increase of 18.9%, 13.3% and 30.4%, respectively, over 2017.

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The following table sets forth the sales volumes, average realized prices and the respective rates of changes of the four major product categories in 2018 and 2017, including breakdown in retail, wholesale and distribution of gasoline and diesel.

	Sales Volume		Change from	Average Realized Prices		Change from
	2017	2018	2017 to 2018	2017	2018	2017 to 2018
	(thousand tonnes)		(%)	(RMB per tonne)		(%)
Gasoline	83,980	88,076	4.9	6,941	7,870	13.4
Retail sale	66,364	66,855	0.7	7,346	8,296	12.9
Wholesale and distribution	17,616	21,221	20.5	5,412	6,524	20.6
Diesel	89,146	84,865	(4.8)	5,039	5,998	19.0
Retail sale	44,736	43,327	(3.1)	5,588	6,435	15.2
Wholesale and distribution	44,410	41,537	(6.5)	4,486	5,541	23.5
Kerosene	25,555	25,787	0.9	3,531	4,562	29.2
Fuel oil	23,299	23,372	0.3	2,251	2,974	32.1

In 2018, the operating expenses of the segment were RMB 1,423.2 billion, representing an increase of RMB 230.5 billion or 19.3% as compared with that of 2017. This was mainly due to the increase in refined oil products procurement price.

In 2018, the segment s marketing cash operating cost (defined as the operating expenses less purchase costs, taxes other than income tax, depreciation and amortization, and then divided by the sales volume) was RMB 207 per tonne, representing an increase of 4.2% compared with that of 2017.

In 2018, the segment actively coped with the fierce market competition by taking advantages of integrated business and distribution network into full play, reinforcing the coordination of internal and external resources, constantly intensifying the market strategy of balancing profits and sales volume, and putting efforts to expand non-fuel business scale and profitability.

The operating income of this segment in 2018 was RMB 23.5 billion, representing a decrease of 25.7% compared with 2017.

Year Ended December 31, 2017 Compared with Year Ended December 31, 2016

In 2017, the operating revenues of this segment were RMB 1,224.2 billion, representing an increase of 16.3% compared with 2016.

In 2017, the sales revenues of gasoline, diesel and kerosene were RMB 582.9 billion, RMB 449.2 billion and RMB 90.2 billion, representing an increase of 17.7%, 9.0% and 27.8%, respectively, over 2016.

The following table sets forth the sales volumes, average realized prices and the respective rates of changes of the four major product categories in 2017 and 2016, including breakdown in retail, distribution and wholesale of gasoline and diesel.

	Sales Volume		Change from	Average Realized Prices		Change from
	2016	2017	2016 to 2017	2016	2017	2016 to 2017
	(thousand tonnes)		(%)	(RMB per tonne)		(%)
Gasoline	77,613	83,980	8.2	6,380	6,941	8.8
Retail sale	63,718	66,364	4.2	6,722	7,346	9.3
Wholesale and distribution	13,895	17,616	26.8	4,812	5,412	12.5
Diesel	91,998	89,146	(3.1)	4,478	5,039	12.5
Retail sale	46,656	44,736	(4.1)	5,088	5,588	9.8
Wholesale and distribution	45,342	44,410	(2.1)	3,851	4,486	16.5
Kerosene	25,164	25,555	1.6	2,807	3,531	25.8
Fuel oil	22,034	23,299	5.7	1,703	2,251	32.2

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In 2017, the operating expenses of the segment were RMB 1,192.6 billion, representing an increase of RMB 171.9 billion or 16.8% as compared with that of 2016. This was mainly due to increased procurement prices of refined oil products and volume of gasoline.

In 2017, the segment s marketing cash operating cost (defined as the operating expenses less purchase costs, taxes other than income tax, depreciation and amortization, and then divided by the sales volume) was RMB 198.7 per tonne, representing an increase of 0.7% compared with that of 2016.

In 2017, the operating revenues of non-fuel business was RMB 27.6 billion, representing an increase of RMB 6.2 billion compared with 2016; the profit of non-fuel business was RMB 2.2 billion, representing an increase of RMB 0.7 billion compared with 2016.

The operating income of this segment in 2017 was RMB 31.6 billion, representing a decrease of 1.8% compared with 2016.

Chemicals Segment

The business activities of the chemicals segment include purchasing chemical feedstock from the refining segment and third parties, producing, marketing and distributing petrochemical and inorganic chemical products.

Year Ended December 31, 2018 Compared with Year Ended December 31, 2017

The operating revenues of the chemicals segment in 2018 were RMB 546.7 billion, representing an increase of 24.9% over 2017, which was mainly attributable to the increase in sales volume and price of chemical products as a result of the Company s effort in actively expanding sales volume and market share, optimizing product mix.

The sales revenues generated by the segment s six major categories of chemical products (namely basic organic chemicals, synthetic resin, synthetic fiber monomer and polymer, synthetic fiber, synthetic rubber, and chemical fertilizer) totaled RMB 516.2 billion, representing an increase of 24.8% as compared with 2017, and accounted for 94.4% of the operating revenues of the segment.

The following table sets forth the sales volume, average realized price and the respective rates of changes for each of these six categories of chemical products of this segment from 2017 to 2018.

	Sales Volume		Change from	Average Realized Prices		Change from
	2017	2018	2017 to 2018	2017	2018	2017 to 2018
	(thousand tonnes)		(%)	(RMB per tonne)		(%)

Basic organic chemicals	46,351	52,450	13.2	4,684	5,281	12.7
Synthetic fiber monomers and polymers	10,332	11,252	8.9	6,047	6,978	15.4
Synthetic resins	13,215	15,325	16.0	8,153	8,646	6.0
Synthetic fiber	1,304	1,314	0.8	8,556	9,712	13.5
Synthetic rubber	1,138	1,278	12.3	11,957	10,750	(10.1)
Chemical fertilizer	700	796	13.7	2,008	2,093	4.2

In 2018, the operating expenses of the chemicals segment were RMB 519.7 billion, representing an increase of 26.5% over 2017, mainly because of the significant increase in the price of externally procured raw materials.

In 2018, the segment seized the opportunities of high chemical margin, continuously optimized the structures of feedstock, product and facilities, strengthened the coordination among research, development, production and marketing, intensified allocation of resources, improved targeted marketing strategy, and achieved remarkable profits with increased sales volume of petrochemicals.

In 2018, the operating income of this segment was RMB 27.0 billion, staying stable compared with 2017.

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Year Ended December 31, 2017 Compared with Year Ended December 31, 2016

The operating revenues of the chemicals segment in 2017 were RMB 437.7 billion, representing an increase of 30.6% over 2016, which was mainly attributable to the increase in sales volume and price of chemical products.

The sales revenues generated by the segment s six major categories of chemical products (namely basic organic chemicals, synthetic resin, synthetic fiber monomer and polymer, synthetic fiber, synthetic rubber, and chemical fertilizer) totaled RMB 413.5 billion, representing an increase of 30.8% as compared with 2016, and accounted for 94.5% of the operating revenues of the segment.

The following table sets forth the sales volume, average realized price and the respective rates of changes for each of these six categories of chemical products of this segment from 2016 to 2017.

	Sales Volume		**Change from**	**Average Realized Prices**		**Change from**
	2016	**2017**	**2016 to 2017**	**2016**	**2017**	**2016 to 2017**
	(thousand tonnes)		**(%)**	**(RMB per tonne)**		**(%)**
Basic organic chemicals	41,605	46,351	11.4	3,963	4,684	18.2
Synthetic fiber monomers and polymers	7,169	10,332	44.1	5,328	6,047	13.5
Synthetic resins	12,250	13,215	7.9	7,482	8,153	9.0
Synthetic fiber	1,369	1,304	(4.7)	7,113	8,556	20.3
Synthetic rubber	1,099	1,138	3.5	9,609	11,957	24.4
Chemical fertilizer	714	700	(2.0)	1,612	2,008	24.6

In 2017, the operating expenses of the chemicals segment were RMB 410.8 billion, representing an increase of 30.6% over 2016, mainly because of the significant increase in the price of externally procured raw materials.

In 2017, the segment seized the opportunities of the improving market conditions, coordinated production with sales, intensified structural adjustment, increased the production of synthetic resin, rubber and some organic products which were more profitable, positively expanded the market, strictly controlled costs and expenses, thus, resulting in remarkable profits.

In 2017, the operating income of this segment was RMB 27.0 billion, representing an increase of RMB 6.4 billion or 30.8% as compared with 2016.

Corporate and Others

The business activities of corporate and others mainly consist of the import and export business activities of our subsidiaries, research and development activities of us and managerial activities of our headquarters.

Year Ended December 31, 2018 Compared with Year Ended December 31, 2017

In 2018, the operating revenue generated from corporate and others was RMB 1,368.6 billion, representing increase of 40.4% over 2017, which was mainly attributable to the increase in revenues from crude oil and overseas refined oil products trading business, as well as the rapid growth of the petrochemicals business scale through Epec platform.

In 2018, the operating expenses of this segment was RMB 1,377.9 billion, representing an increase of 40.7 % over 2017.

In 2018, the operating loss of this segment was RMB 9.3 billion.

Year Ended December 31, 2017 Compared with Year Ended December 31, 2016

In 2017, the operating revenue generated from corporate and others was RMB 974.9 billion, representing increase of 31.8% over 2016, which was mainly attributable to the increase in crude oil trading incomes caused by price increase of crude oil as compared with 2016.

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In 2017, the operating expenses of this segment was RMB 979.3 billion, representing an increase of 32.9% over 2016.

In 2017, the operating loss of this segment was RMB 4.5 billion.

D. LIQUIDITY AND CAPITAL RESOURCES

Our primary sources of funding have been cash provided by our operating activities, along with short-term and long-term loans. Our primary uses of cash have been for working capital, capital expenditures and repayment of short-term and long-term loans. We arrange and negotiate financing with financial institutions to finance our capital resource requirement, and maintain a certain level of standby credit facilities to reduce liquidity risk. We believe that our current cash on hand, expected cash flows from operations and available standby credit facilities from financial institutions will be sufficient to meet our working capital requirements and repay our short term debts and obligations when they become due.

The following table sets forth a summary of our consolidated statements of cash flow data for the years ended December 31, 2016, 2017 and 2018.

Statement of cash flow data	2016	Year Ended December 31, 2017 (RMB in millions)	2018
Net cash generated from operating activities	214,543	190,935	175,868
Net cash used in investing activities	(66,217)	(145,323)	(66,422)
Net cash generated from/(used in) financing activities	(93,047)	(56,509)	(111,260)
Net increase/(decrease) in cash and cash equivalents	55,279	(10,897)	(1,814)

The net cash generated from our operating activities in 2018 was RMB 175.9 billion, representing a decrease of RMB 15.1 billion over 2017, among which, profit before taxation increased by RMB 12.4 billion, depreciation, depletion and amortization and assets impairment loss decreased by RMB 15.5 billion, accounts receivable and net change for other current assets decreased by RMB 30.1 billion, net change for inventory decreased by RMB 25.6 billion, accounts payable and net change for other current liabilities decreased by RMB 57.1 billion, and the paid income tax increased by RMB 13.0 billion as compared with 2017.

The net cash generated from our operating activities in 2017 was RMB 190.9 billion, representing a decrease of RMB 23.6 billion over 2016, which was mainly due to the increase in receivables and inventory resulted from the rising oil prices and inventory level.

The net cash generated from our operating activities in 2016 was RMB 214.5 billion, representing an increase of RMB 48.8 billion over 2015, which was mainly due to an increase in earnings before income tax by RMB 23.7 billion, optimized fund utilization and improvement on working capital.

The net cash used in our investing activities in 2018 was RMB 66.4 billion, representing a decrease of RMB 78.9 billion over 2017, which was mainly due to an increase in capital expenditure of RMB 31.2 billion, an increase of RMB55.0 billion in proceeds from the matured structural deposits, and an increase of RMB 30.5 billion in gains from the time deposits with maturities over three months.

The net cash used in our investing activities in 2017 was RMB 145.3 billion, representing an increase of RMB 79.1 billion over 2016, which was mainly due to an increase of fixed deposits due over three months and an increase of acquisitions and investments in associates and joint ventures.

The net cash used in our investing activities in 2016 was RMB 66.2 billion, representing a decrease of RMB 50.5 billion over 2015, which was mainly due to the decrease of capital expenditure by RMB 30.0 billion and RMB 13.2 billion received as proceeds from the sale of equity interest in Sinopec Sichuan-to-East China Pipeline Co., Ltd.

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The net cash used in the Company s financing activities in 2018 was RMB 111.3 billion, representing an increase of cash out flow by RMB 54.8 billion over 2017, among which, the dividend payment increased by RMB 35.1 billion, the net repayments of bank and other loans increased by RMB 13.9 billion and the distributions by subsidiaries to non-controlling shareholders increased by RMB 6.2 billion.

The net cash used in the Company s financing activities in 2017 was RMB 56.5 billion, representing a decrease of cash out flow by RMB 36.5 billion over 2016. This was mainly due to the decrease in borrowing repayment.

The net cash used in our financing activities in 2016 was RMB 93.0 billion, representing a net cash outflow increase of RMB 102.1 billion over 2015, which was mainly due to a cash inflow of RMB 105.0 billion from the capital introduction of Sinopec Marketing Co., Ltd. in 2015 and the significant reduction in interest bearing debts for two consecutive years, of which, the Company repaid RMB 62.6 billion and RMB 63.0 billion in 2015 and 2016, respectively.

In respect of our cash flow situation of 2018, we further intensified central management of funds, strictly controlled the size of monetary funds and interest bearing debts, reduced capital precipitation, accelerated cash flow to continuously maintain a high level of our operating cash flow.

In respect of our debts and borrowings in 2018, due to our stable cash flow, we decreased our debts to RMB 154.7 billion at the end of 2018 from RMB 179.8 billion from the beginning of 2018. Among which, our short-term debts decreased by RMB 19.5 billion as compared to the beginning of 2018, representing a decrease from 44.86% at the beginning of 2018 to 39.53% at the end of 2018 of the debts, primarily because we repaid the matured bonds and returned short-term loans according to our production and operation needs. Our long-term debts decreased by RMB 5.6 billion from the beginning of 2018, representing an increase from 55.14% at the beginning of 2018 to 60.47% at the end of 2018 of the debts, which was mainly due to the repayment of discounted loans made by our subsidiaries for oil quality upgrading projects and the increase in new project loans made by our subsidiaries. Our short-term debts consist of revolving loans borrowed according to our business plan and operation needs and overdrawing agreements entered into on the corporate bank account with our strategic-alliance banks to meet our intra-day payment requirements.

Contractual Obligations and Commercial Commitments

The following table sets forth our obligations and commitments to make future payments under contracts and commercial commitments as of December 31, 2018.

	As of December 31, 2018				
	Total	**less than 1 year**	**1-3 years**	**4-5 years**	**After 5 years**
			(RMB in millions)		
Contractual obligations(1)					
Short-term debt	62,078	62,078			
Long-term debt	105,061	2,061	61,799	24,047	17,154
Total contractual obligations	167,139	64,139	61,799	24,047	17,154
Other commercial commitments					
Operating lease commitments	352,794	15,625	28,654	27,228	281,287

Capital commitments	195,437	195,437			
Exploration and production licenses	1,400	380	112	56	852
Guarantees(2)	24,398	24,398			
Total commercial commitments	574,029	235,840	28,766	27,284	282,139

(1) Contractual obligations include the contractual obligations relating to interest payments.

(2) Guarantee is not limited by time, therefore specific payment due period is not applicable. As of December 31, 2018, with respect to guarantees in relation to banking facilities granted to certain parties, we have not entered into any off-balance sheet arrangements. As of December 31, 2018, the maximum amount of potential future payments under the guarantees was RMB 24.4 billion. As of December 31, 2017, the maximum amount of potential future payments under the guarantees was RMB 24.2 billion. See Note 32 to the consolidated financial statements for further information of the guarantees.

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Historical and Planned Capital Expenditure

The following table sets forth our capital expenditure by segment for the years of 2016, 2017 and 2018 and the capital expenditure in each segment as a percentage of our total capital expenditure for such year.

	2016		2017		2018		Total	
	RMB	Percent	RMB	Percent	RMB	Percent	RMB	Percent
	(in billions, except percentage data)							
Exploration and production	32.19	42.10%	31.34	31.54%	42.16	35.73%	105.69	35.97%
Refining	14.35	18.77%	21.07	21.21%	27.91	23.66%	63.33	21.55%
Marketing and distribution	18.49	24.18%	21.54	21.67%	21.43	18.16%	61.46	20.92%
Chemicals	8.85	11.58%	23.03	23.17%	19.58	16.59%	51.46	17.51%
Corporate and others	2.58	3.37%	2.40	2.41%	6.90	5.86%	11.89	4.05%
Capital Expenditure	76.46	100.00%	99.38	100.00%	117.98	100.00%	293.82	100.00%

In 2018, focusing on quality and profitability of investment, we continuously optimized our investment projects. As a result, our capital expenditure amounted to RMB 118.0 billion, among which:

- *Exploration and production*. RMB 42.2 billion was mainly for Fuling and Weirong shale gas and Hangjinqi natural gas field development projects, Shengli and Northwest crude development projects, phase I of Xinjiang gas pipeline, phase I of Erdos-Anping-Cangzhou gas pipeline, Wen 23 gas storage, and Jintan gas storage, as well as overseas projects.

- *Refining*. RMB 27.9 billion was mainly for Zhongke Refining and Petrochemical project, adjustments in the product mix of Zhenhai, Tianjin, Maoming and Luoyang refineries, and gasoline and diesel GB VI quality upgrading projects as well as the Rizhao-Puyang-Luoyang crude oil pipeline construction.

- *Marketing and distribution*. RMB 21.4 billion was mainly for construction of service stations and refined oil product pipelines, depots storage facilities and non-fuel business, and special protection for safety and environmental hazards during underground oil tank renovation.

- *Chemicals*. RMB 19.6 billion was mainly for Zhongke, Zhenhai and Gulei ethylene projects, phase II of Hainan high-efficiency and environment-friendly aromatics project, Zhongsha polycarbonate project and Zhong an coal chemical projects.

- *Corporate and others*. RMB 6.9 billion was mainly for capital contribution to set up Sinopec Capital Co., Ltd. with Sinopec Group Company, R&D facilities and information technology application projects.

In 2019, we will devote attention to the quality and profitability of investments, and constantly optimize our investment projects. Capital expenditures for the year are budgeted at RMB 136.3 billion, including:

- *Exploration and production*. The planned capital expenditure in 2019 for this segment is approximately RMB 59.6 billion, mainly for capacity building in Shengli and Northwest oilfields, Chuanxi Leikoupo, Fuling and Weirong shale gas, as well as natural gas pipelines and storage projects, and overseas oil and gas projects.

- *Refining*. The planned capital expenditure in 2019 for this segment is RMB 27.9 billion, mainly for Zhongke Refining and Petrochemical Project and Zhenhai Project, the structural adjustments of refining business in Tianjin, Maoming, Luoyang, Wuhan, Beihai and Yangzi subsidiaries.

- *Marketing and distribution*. The planned capital expenditure in 2019 for this segment is RMB 21.8 billion. We expect to focus on constructing and renovating pipelines and service stations and building refined oil product storage and non-fuel business, as well as special protection for safety and environmental hazards during underground oil tank renovation.

- *Chemicals*. The planned capital expenditure in 2019 for this segment is RMB 23.3 billion, mainly for Zhongke, Zhenhai, Gulei, Hainan, and Wuhan refining and petrochemical projects, Zhong an and Bijie coal chemical projects, and the resource utilisation and structural adjustment projects in Yangzi and Zhongsha subsidiaries.

- *Corporate and others*. The planned capital expenditure in 2019 for this segment is RMB 3.7 billion, mainly for R&D facilities and information technology projects.

Research and Development

Our expenditures for research and development were RMB 10.0 billion in 2016, RMB 11.5 billion in 2017, and RMB 12.9 billion in 2018, among which, the research expenses were RMB 5.9 billion, RMB 6.4 billion and RMB 8.0 billion for each of the three years, respectively.

Consumer Price Index

According to the data provided by the National Bureau of Statistics, the consumer price index (CPI) in the PRC increased by 2.1% in 2018 (CPI increased by 1.6% in 2017) over 2017 and increased by 3.7% over 2016. According to China s official analysis, the increase of consumer price index in the PRC during 2018 was due to the increase in prices of housing and medical services. Inflation has not had a significant impact on our results of operations in 2018.

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

A. DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

Directors

The table and discussion below set forth certain information concerning our directors. The current term for all our directors is three years, which will expire in May 2021.

Name	Age	Position with the Company
Dai Houliang	55	Chairman
Li Yunpeng	59	Director
Yu Baocai	53	Director
Ma Yongsheng	57	Director, President
Ling Yiqun	56	Director, Senior Vice President
Liu Zhongyun	55	Director, Senior Vice President
Li Yong	55	Director
Tang Min	65	Independent Director
Fan Gang	65	Independent Director
Cai Hongbin	51	Independent Director
Ng, Kar Ling Johnny	58	Independent Director

Dai Houliang, aged 55, Chairman of the Board of Directors of Sinopec Corp. Mr. Dai is a professor level senior engineer with a Ph.D. degree and an academician of the Chinese Academy of Engineering. Mr. Dai is the alternate member of the nineteenth Central Committee of the Communist Party of China. In December 1997, he was appointed as Vice President of Yangzi Petrochemical Corporation; in April 1998, he served as Director and Vice President of Yangzi Petrochemical Co., Ltd.; in July 2002, he served as Vice Chairman of Board of Directors, President of Yangzi Petrochemical Co., Ltd. and Director of Yangzi Petrochemical Corporation; in December 2003, he served as Chairman of Board of Directors and President of Yangzi Petrochemical Co., Ltd. and concurrently as Chairman of Board of Directors of Yangzi Petrochemical Corporation; in December 2004, he served concurrently as Chairman of Board of Directors of BASF-YPC Company Limited; in September 2005, he was appointed as Deputy CFO of Sinopec Corp.; in November 2005, he was appointed as Vice President of Sinopec Corp.; in May 2006, he served as Director, Senior Vice President and CFO of Sinopec Corp.; in June 2008, he served as a member of the Leading Party Member Group of China Petrochemical Corporation; in May 2009, he was elected as Director and appointed as Senior Vice President of Sinopec Corp.; in August 2012, he was appointed concurrently as Chairman of Sinopec Great Wall Energy & Chemical Ltd.; in March 2013, he was appointed concurrently as Chairman of Sinopec Catalyst Ltd.; in May 2016, he was appointed as the President and Deputy Secretary of the Leading Party Member Group of China Petrochemical Corporation and since August 2016, he was elected as the Vice Chairman of the Board; between August 2016 and October 2018, he acted as President of Sinopec Corp.; in July 2018, he was appointed as the Chairman of the Board of Sinopec Petrochemical Corporation; in May 2018, he was appointed as the Chairman of the Board.

Li Yunpeng, aged 59, Director of Sinopec Corp. Mr. Li is a senior administration engineer with a master degree in engineering. In January 1998, he was appointed as deputy General Manager of Executive Division of China Ocean Shipping (Group) Company (COSCO); in September 1998, he served as Deputy Secretary of Discipline Inspection Committee, Director of Supervision Office and concurrently served as General Manager of Supervision Division of COSCO; in November 1999, he was appointed as General Manager of Human Resource Division of COSCO; and in September 2000, he served as Head of the Party Organisation Department of COSCO; in December 2000, he was appointed as Secretary of Communist Youth League Committee of COSCO; in April 2003, he was appointed as Assistant President of COSCO; in April 2004, he served as a member of the Leading Party Member Group and Team Leader of the Discipline Inspection Group of the Leading Party Member Group of COSCO; in December 2011, he was appointed as Vice President and a member of the Leading Party Member Group of COSCO; in June 2013, he served as President and a member of the Leading Party Member Group of COSCO; in July 2013, he served as Director of COSCO; and in February 2017, Mr. Li was appointed as Deputy Secretary of the Leading Party Member Group and Vice President of China Petrochemical Corporation. In June 2017, he was elected as Director of Sinopec Corp.

Yu Baocai, aged 53, Director of Sinopec Corp. Mr. Yu is a senior engineer and master in economics. In September 1999, Mr. Yu was appointed as the Deputy General Manager of Daqing Petrochemical Company; In December 2001, he was appointed as the General Manager and Deputy Secretary of CPC Committee of Daqing Petrochemical Company; In September 2003, he was appointed as the General Manager and Secretary of CPC Committee of Lanzhou Petrochemical Company; In June 2007, he was appointed as the General Manager and Deputy Secretary of CPC Committee of Lanzhou Petrochemical Company and the General Manager of Lanzhou Petroleum & Chemical Company; He had been a member of the Leading Party Member Group and the Deputy General Manager of China National Petroleum Corporation since September 2008 and had been acting concurrently as director of Petrochina Company Limited since May 2011; Since June 2018, he has been a member of the Leading Party Member Group and the Vice President of China Petrochemical Corporation. In August 2018, he was appointed concurrently as Chairman of Sinopec Enginnering (Group) Co., Ltd. In October 2018, Mr. Yu was elected as Director of Sinopec Corp.

Ma Yongsheng, aged 57, Director and President of Sinopec Corp. Mr. Ma is a professor level senior engineer with a Ph.D. degree and an academician of the Chinese Academy of Engineering. Mr. Ma is the member of the thirteenth national committee of CPPCC. In April 2002, he was appointed as Chief Geologist of Sinopec Southern Exploration and Production Company; in April 2006, he was appointed as Executive Deputy Manager (in charge of overall management), Chief Geologist of Sinopec Southern Exploration and Production Company; in January 2007, he was appointed as General Manager and Party Secretary of CPC Committee of Sinopec Southern Exploration and Production Company; in March 2007, he served as General Manager and Deputy Party Secretary of CPC Committee of Sinopec Exploration Company; in May 2007, he was appointed as Deputy Commander of Sichuan-East China Gas Pipeline Project Headquarter of Sinopec Corp., General Manager and Deputy Secretary of CPC Committee of Sinopec Exploration Company; in May 2008, he was appointed as Deputy Director General of Exploration and Production Department of Sinopec Corp. (Director General Level) and Deputy Commander of Sichuan-East China Gas Pipeline Project Headquarter; in July 2010, he served as Deputy Chief Geologist of Sinopec Corp.; in August 2013, he was appointed as Chief Geologist of Sinopec Corp.; in December 2015, he served as Vice President of China Petrochemical Corporation and appointed as Senior Vice President of Sinopec Corp.; in February 2016, he was elected as Director of Sinopec Corp.; in January 2017, he was appointed as Member of the Leading Party Member

Group of China Petrochemical Corporation; in October 2018, he was appointed as President of Sinopec Corp.

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Ling Yiqun, aged 56, Director and Senior Vice President of Sinopec Corp. Mr. Ling is a professor level senior engineer with a Ph.D. degree. From 1983, he worked in the refinery of Beijing Yanshan Petrochemical Company and the Refining Department of Beijing Yanshan Petrochemical Company Ltd. In February 2000, he was appointed as the Deputy Director General of Refining Department of Sinopec Corp.; in June 2003, he was appointed as the Director General of Refining Department of Sinopec Corp.; in July 2010, he was appointed as Vice President of Sinopec Corp.; in May 2012, he was appointed concurrently as Executive Director, President and Secretary of CPC Committee of Sinopec Refinery Product Sales Company Limited; in August 2013, he was appointed concurrently as the President of Sinopec Qilu Company; in December 2016, he was elected concurrently as Chairman of Board of Directors of Sinopec Engineering (Group) Co., Ltd.; in March 2017, he was appointed as Vice President of China Petrochemical Corporation and in February 2018, he was appointed as Senior Vice President of Sinopec Corp. In May 2018, he was elected as Director of Sinopec Corp.

Liu Zhongyun, aged 55, Director and Senior Vice President of Sinopec Corp. Mr. Liu is a professor level senior engineer with a Ph.D. in engineering. In December 2002, he was appointed as a standing committee member of CPC Committee and Director of the Party Organisation Department of Shengli Petroleum Administration Bureau; in November 2004, he was appointed as Deputy Secretary of CPC Committee of Shengli Petroleum Administration Bureau; in December 2005, he was appointed as Manager of Sinopec Shengli Oilfield Branch; in December 2008, he was appointed as Secretary of CPC Committee of Sinopec International Petroleum Exploration and Production Limited; in July 2010, he was appointed as General Manager of Sinopec Northwest Oilfield Company, Director General of Northwest Petroleum Bureau under China Petrochemical Corporation. Since August 2014, Mr. Liu has acted as Assistant to President and Director General of HR Department of China Petrochemical Corporation, and in May 2015, he was elected as Supervisor of Sinopec Corp.; in March 2017, he was appointed as Vice President of China Petrochemical Corporation; in February 2018, he was appointed as Senior Vice President of Sinopec Corp. In December 2018, he was appointed concurrently as the Chairman of Sinopec Oilfield Service Corporation. In May 2018, Mr. Liu was elected as Director of Sinopec Corp.

Li Yong, aged 55, Director of Sinopec Corp. Mr. Li is a senior engineer with a master degree. In April 2003, he was appointed as Deputy General Manager of Tianjin Branch of China National Offshore Oil Corporation (China) Limited; in October 2005, he was appointed as Executive Vice President of China Oilfield Services Limited; in April 2009, he was appointed as President of China Oilfield Services Limited; in September 2010, he was appointed as Chief Executive Officer and President of China Oilfield Services Limited; in July 2012, he was appointed as the Chief Executive Officer, President and Secretary of CPC Committee of China Oilfield Services Limited; in June 2016, he was appointed as Assistant President of China National Offshore Oil Corporation and Executive Vice President of China National Offshore Oil Corporation Limited, as well as Chief Director (General Manager) and Secretary of CPC Committee of China National Offshore Oil Corporation Bohai Petroleum Administration Bureau (China National Offshore Oil Corporation (China) Limited Tianjin Branch); in March 2017, he was appointed as Vice President of China Petrochemical Corporation, and since July 2017, he concurrently served as Vice Chairman of the Board of Directors, President and Secretary of CPC Committee of Sinopec International Petroleum Exploration and Production Corporation, as well as Chairman of Board of Directors and President of Sinopec International Petroleum Exploration and Production Limited. In May 2018, he was elected as Director of Sinopec Corp.

Tang Min, aged 65, Independent Director of Sinopec Corp. Mr. Tang has a Ph.D. in economics. He presently acts as Counsellor of the State Council of the PRC and Executive Vice Chairman of YouChange China Social Entrepreneur Foundation, Independent Director of Baoshang Bank Co., Ltd, and Independent Director of China Minmetals Development Co., Ltd. He was an economist and senior economist at the Economic Research Centre of the Asian Development Bank between 1989 and 2000; chief economist at the Representative office of the Asian Development Bank in China between 2000 and 2004; Deputy Representative at the Representative Office of the Asian Development Bank in China between 2004 and 2007 and Deputy Secretary-General of the China Development Research Foundation between 2007 and 2010. In May 2015, he acted as Independent Director of Sinopec Corp.

Fan Gang, aged 65, Independent Director of Sinopec Corp. Mr. Fan has a Ph.D. in economics. He presently acts as Vice President of China Society of Economic Reform, Head of the National Economic Research Institution of China Reform Foundation, President of China Development Institute (Shenzhen) and an economics professor at Peking University. He began to work for Chinese Academy of Social Sciences in 1988, and subsequently served as Director of Editorial Department for the Economic Research Journal between 1992 and 1993 and as Deputy Head of the Institute of Economics of Chinese Academy of Social Sciences between 1994 and 1995. In 1996, he was redesignated to work for China Society of Economic Reform, and subsequently founded the National Economic Research Institution. From 2006 to 2010, and between 2015 and 2018, he served as a member of the Monetary Policy Committee of the People s Bank of China. Mr. Fan is recognized as one of the National Young and Middle-Aged Experts with Outstanding Contributions. In May 2015, he acted as Independent Director of Sinopec Corp.

Cai Hongbin, aged 51, Independent Director of Sinopec Corp. Mr. Cai is dean of Faculty of Business and Economics and Professor of Economics of the University of Hong Kong. Mr. Cai has a Ph.D. degree in Economics. From 1997 to 2005, Mr. Cai taught at University of California, Los Angeles; since 2005, he served as a professor and Ph.D. supervisor in Applied Economics Department at Guanghua School of Management at Peking University, he once served as Director, Assistant to the Dean and Vice Dean of the Applied Economics Department. From December 2010 to January 2017, he served as the dean of Guanghua School of Management at Peking University. In June 2017, he joined the Faculty of Business and Economics of the University of Hong Kong. Professor Cai Hongbin is a member of the 12th National People s Congress and a member of Beijing Municipal Committee of Chinese People s Political Consultative Conference, serving as member of the eleventh Central Committee of China Democratic League, deputy Chairman of Beijing Municipal Committee of China Democratic League, and a special auditor of the National Audit Office. Mr. Cai once served as external director of China Petrochemical Corporation, independent directors of China Unicom and China Everbright Bank, etc. Mr. Cai currently serves as independent director of CCB International (Holdings) Ltd., Rightway Holdings Co., Ltd. and Beijing Landsky Environmental Technology Co., Ltd., In May 2018, Mr. Cai acted as Independent Director of Sinopec Corp.

Ng, Kar Ling Johnny, aged 58, Independent Director of Sinopec Corp. Mr. Ng currently is a practicing certified public accountant in Hong Kong, a practicing auditor and certified public accountant in Macau, a fellow member of the Hong Kong Institute of Certified Public Accountants (FCPA), a fellow member of the Association of Chartered Certified Accountant (FCCA), and a member of the Institute of Chartered Accountants in England and Wales (AICAEW). Mr. Ng obtained a Bachelor s degree and a Master s degree in Business Administration from the Chinese University of Hong Kong in 1984 and 1999, respectively. Mr. Ng joined KPMG (Hong Kong) in 1984 and became a Partner in 1996. He acted as a Managing Partner from June 2000 to September 2015 and the Vice Chairman of KPMG (China) from October 2015 to March 2016. Mr. Ng currently serves as Independent Non-executive Director and Chairman of the audit committee of China Vanke Co., Ltd. In May 2018, Mr. Ng acted as Independent Director of Sinopec Corp.

Supervisors

The table and discussion below set forth certain information concerning our supervisors. The current term of our supervisors is three years, which will expire in May 2021.

Name	Age	Position with the Company
Zhao Dong	48	Chairman
Jiang Zhenying	54	Supervisor
Yang Changjiang	58	Supervisor
Zhang Baolong	59	Supervisor
Zou Huiping	58	Supervisor
Zhou Hengyou	55	Employee Representative Supervisor
Yu Renming	55	Employee Representative Supervisor
Yu Xizhi	56	Employee Representative Supervisor

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Zhao Dong, aged 48, Chairman of Board of Supervisors of Sinopec Corp. Mr. Zhao is a professor-level senior accountant with a doctor s degree. In July 2002, he was appointed as chief accountant and general manager of financial assets department of CNPC International (Nile) Ltd.; in January 2005, he was appointed as deputy chief accountant and executive deputy director of financial and capital operation department of China National Oil and Gas Exploration and Development Corporation; in April 2005, he was appointed as deputy chief accountant and general manager of financial and capital operation department of China National Oil and Gas Exploration and Development Corporation; in June 2008, he was appointed as chief accountant of China National Oil and Gas Exploration and Development Corporation; in October 2009, he was appointed as chief accountant of China National Oil and Gas Exploration and Development Corporation and chief financial officer of PetroChina International Investment Company Limited; in September 2012, he was appointed as vice general manager of CNPC Nile Company and in August 2013, he was appointed as general manager of CNPC Nile Company; in November 2015, he was appointed as chief financial officer of PetroChina Company Limited. He has been a member of the Leading Party Member Group and chief accountant of China Petrochemical Corporation since November 2016; in June 2017, he was elected as Chairman of Board of Supervisors of Sinopec Corp.

Jiang Zhenying, aged 54, Supervisor of Sinopec Corp. Mr. Jiang is a professor level senior economist with a doctor degree. In December 1998, he was appointed as the Vice President of the China Petrochemical Supplies & Equipment Co., Ltd.; in February 2000, he was appointed as the Deputy Director General of Sinopec Procurement Management Department; in December 2001, he was appointed as the Director General of Sinopec Procurement Management Department and in November 2005 he concurrently held the positions of Chairman of Board of Directors, President and Secretary of CPC Committee of China Petrochemical International Co., Ltd.; in March 2006, he was appointed as the Director General (General Manager), Executive Director and Secretary of the CPC Committee of Sinopec Procurement Management Department (Sinopec International Co. Ltd.); in April 2010, he was appointed as the Director General (General Manager), Executive Director and Deputy Secretary of the CPC Committee of Sinopec Procurement Management Department (Sinopec International Co. Ltd); in November 2014, he was appointed as Director General of Safety Supervisory Department of Sinopec Corp.; in May 2017, he was appointed as Deputy Director of the Office of Leading Party Member Group Inspection Work of China Petrochemical Corporation and since December 2010, he was elected as the Employee s Representative Supervisor of Sinopec Corp. Since December 2018, he was appointed as Director of Audit Bureau of China Petrochemical Corporation, and Director of Audit Department of Sinopec Corp. In May 2018, he was elected as Supervisor of Sinopec Corp.

Yang Changjiang, aged 58, Supervisor of Sinopec Corp. Mr. Yang is a professor-level senior administration engineer with a Master s degree. In October 2007, he was appointed as a standing committee member of CPC Committee of Shengli Petroleum Administration Bureau; in April 2009, he was appointed as Deputy Secretary of CPC Committee and Secretary of Discipline Inspection Committee of Shengli Petroleum Administration Bureau, as well as a standing committee member of CPC Committee of Dongying City, Shandong Province; in December 2012, he was appointed as Secretary of CPC Committee and Deputy Director of Southwest Petroleum Bureau, Deputy General Manager of Sinopec Southwest Oil & Gas Company and a member of the Coordination Committee of Sinopec Southwest Petroleum Bureau, Sinopec Southwest Oil & Gas Company and Sinopec Southern Exploration Company; in December 2016, he was appointed as Secretary of CPC Committee and Deputy Director General of Shengli Petroleum Administration Bureau, and Deputy General Manager of Shengli Oilfield Company; in October 2017, he was appointed as Secretary of CPC Committee and Deputy General Manager of Shengli Petroleum Administration Bureau Co., Ltd., and Deputy General Manager of Sinopec Shengli Oilfield Company. Since March 2018, he has served as

Director General of Party Affairs and Employee Relations Department (Leading Party Member Group Office), Deputy Secretary of the CPC Committee directly under China Petrochemical Corporation, Deputy Director General of Working Committee of Trade Union, and Deputy Director of the Youth Working Committee of China Petrochemical Corporation. In May 2018, he was elected as Supervisor of Sinopec Corp.

Zhang Baolong, aged 59, Supervisor of Sinopec Corp. Mr. Zhang is a professor-level senior economist with a Master degree. In July 1995, he served as General Manager of Hong Kong Century Bright Capital Investment Limited; in August 1996, he served as Deputy General Manager of Sinopec Finance Co., Ltd.; in December 2001, he was appointed as Deputy General Manager and Chief Accountant of China International United Petroleum & Chemicals Co., Ltd.; in August 2004, he was appointed concurrently as Secretary of Disciplinary Inspection Committee of China International United Petroleum & Chemicals Co., Ltd.; since March 2006, he has served as General Manager and Secretary of CPC Committee of Sinopec Finance Co., Ltd. In June 2018, he was appointed as Deputy Director of Department of Capital Management and Financial Services of China Petrochemical Corporation. In May 2018, he was elected as Supervisor of Sinopec Corp.

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Zou Huiping, aged 58, Supervisor of Sinopec Corp. Mr. Zou is a professor level senior accountant with a university diploma. In November 1998, he was appointed as Chief Accountant in Guangzhou Petrochemical General Plant of China Petrochemical Corporation; in February 2000, he was appointed as Deputy Director General of Finance & Assets Department of China Petrochemical Corporation; in December 2001, he was appointed as Deputy Director General of Finance & Planning Department of China Petrochemical Corporation; in March 2006, he was appointed as Director General of Finance & Assets Department of Assets Management Co., Ltd. of China Petrochemical Corporation; in March 2006, he was appointed as Director General of Auditing Department of Sinopec Corp and Director General of China Petrochemical Corporation Audit Bureau. In September 2018, he was appointed as Chief Representative of Sinopec Corp. Hong Kong Office. In May 2006, he was elected as Supervisor of Sinopec Corp.

Zhou Hengyou, aged 55, Employee s Representative Supervisor of Sinopec Corp. Mr. Zhou is a professor level senior administration engineer and with a master degree. In December 1998, Mr. Zhou was appointed as a standing committee member of CPC Committee and Vice Chairman of Trade Union of Jiangsu Petroleum Exploration Bureau; in February 1999, he was appointed as a standing committee member of CPC Committee and Trade Union Chairman of Jiangsu Petroleum Exploration Bureau of China Petrochemical Corporation; in December 2002, he was appointed as Deputy Secretary of CPC Committee and Trade Union Chairman of Jiangsu Petroleum Exploration Bureau; in June 2004, he was appointed as Deputy Secretary of CPC Committee and Secretary of CPC Disciplinary Inspection Committee of Jiangsu Petroleum Exploration Bureau; in August 2005, he was appointed as Secretary of CPC Committee of Jiangsu Petroleum Exploration Bureau; in March 2011, he was appointed as Director General and Secretary of CPC Committee of China Petrochemical News. In March 2015, he was appointed as Director General of the General Office of China Petrochemical Corporation, Director General of Policy Research Department of the General Office of China Petrochemical Corporation and Director General of President s office of Sinopec Corp. In August 2015, he was appointed as Director General of Board of Directors Office under China Petrochemical Corporation; and in May 2015, he was elected as Supervisor of Sinopec Corp. In May 2018, he was elected as Employee s Representative Supervisor of Sinopec Corp.

Yu Renming, aged 55, Employee s Representative Supervisor of Sinopec Corp. Mr. Yu is a professor level senior engineer with a university diploma. In June 2000, he was appointed as the Deputy General Manager of Sinopec Zhenhai Refining & Chemical Co., Ltd.; in June 2003, he was appointed as the Board Director and Deputy General Manager of Sinopec Zhenhai Refining & Chemical Co., Ltd.; in September 2006, he was appointed as the Vice President of Sinopec Zhenhai Refining & Chemical Company; in September 2007, he was appointed as the President and the Vice Secretary of CPC committee of Sinopec Zhenhai Refining & Chemical Company; in January 2008, he was appointed as the Director General of Sinopec Production Management Department; in December 2017, he was appointed as the Director General of Refining Department of Sinopec Corp.; and in December 2010, he was elected as Employee s Representative Supervisor of Sinopec Corp.

Yu Xizhi, aged 56, Employee s Representative Supervisor of Sinopec Corp. Mr Yu is a professor-level senior engineer with a Ph.D. in engineering. In August 1997, he was appointed as Deputy General Manager of Anqing Petrochemical General Plant and concurrent General Manager of Fertiliser Plant; in September 1999, he became a member of the CPC Standing Committee of Anqing Petrochemical General Plant; in February 2000, he was appointed as Deputy General Manager of Sinopec Anqing Company and in September 2000, he was appointed as General Manager of Sinopec Anqing Company. In January 2005, he was appointed as General Manager of Anqing Petrochemical General

Plant and from May 2009 to July 2010, he served a interim position at the Standing Committee of the CPC Anqing Municipal Committee. In July 2010, he became General Manager and Deputy Secretary of the CPC Committee of Maoming Petrochemical Company and General Manager of Sinopec Maoming Company; in July 2016, Mr. Yu was appointed as head of Maoming-Zhanjiang Integration Leading Group; in December 2016, he became Executive Director, General Manager and Deputy Secretary of the CPC Committee of Zhongke (Guangdong) Refining and Petrochemical Co., Ltd. Since April 2017, Mr. Yu has been Director General of Human Resources Department of Sinopec Corp. In June 2017, he was elected as Employee s Representative Supervisor of Sinopec Corp.

Other Executive Officers

Name	Age	Positions with Sinopec Corp.
Lei Dianwu	56	Senior Vice President
Chen Ge	56	Senior Vice President
Wang Dehua	52	CFO
Zhao Rifeng	55	Vice President
Huang Wensheng	52	Vice President/Secretary to the Board of Directors

Lei Dianwu, aged 56, Senior Vice President of Sinopec Corp. Mr. Lei is a Professor level Senior Engineer with a university diploma. In October 1995, he was appointed as Vice President of Yangzi Petrochemical Corporation; in December 1997, he was appointed as Director General of Planning & Development Department in China Eastern United Petrochemical (Group) Co., Ltd. in May 1998, he was appointed as Vice President of Yangzi Petrochemical Corporation; in August 1998 he was appointed as Vice President of Yangzi Petrochemical Co., Ltd. in March 1999, he was appointed temporarily as Deputy Director General of Development & Planning Department of China Petrochemical Corporation; in February 2000, he was appointed as Deputy Director General of Development & Planning Department of Sinopec Corp.; in March 2001, he was appointed as Director General of Development & Planning Department of Sinopec Corp.; in March 2009, he was appointed as Assistant to President of China Petrochemical Corporation; in May 2009, he was appointed as Vice President of Sinopec Corp.; in August 2013, he was appointed as the Chief Economist of China Petrochemical Corporation; in October 2015, he was appointed as Secretary to the Board of Directors of China Petrochemical Corporation; in June 2018, he was appointed concurrently as Director General of International Cooperation Department of Sinopec Corp. In October 2018, he was appointed as Senior Vice President of Sinopec Corp.

Chen Ge, aged 56, Senior Vice President of Sinopec Corp. Mr. Chen is a senior economist with a master degree. In February 2000, he was appointed as Deputy Director General of the Board Secretariat of Sinopec Corp. In December 2001, he was appointed as Director General of the Board Secretariat of Sinopec Corp. In April 2003, he was appointed as Secretary to the Board of Directors of Sinopec Corp. From April 2005 to August 2013, he was appointed concurrently as Director General of Corporate Reform & Management Dept. of Sinopec Corp. In July 2010, he was appointed as Assistant to President of China Petrochemical Corporation. From December 2013 to December 2015, he was appointed temporarily as Deputy Secretary-General of Guizhou Provincial People s Government and a member of the Leading Party Member Group of Guizhou Provincial General Office. In November 2015, he was appointed as Employee s Representative Director of China Petrochemical Corporation. In December 2017, he was appointed concurrently as Director General of Corporate Reform & Management Dept. of Sinopec Corp. In October 2018, he was appointed as Senior Vice President of Sinopec Corp.

Wang Dehua, aged 52, Chief Financial Officer of Sinopec Corp. Mr.Wang is a senior accountant with university diploma. In January 2001, he was appointed as Deputy Director General of Finance Department of Sinopec Corp.; in May 2014, he was appointed as Acting Director General of Finance Department of Sinopec Corp.; in October 2015, he was promoted to Director General of Finance Department of Sinopec Corp.; in November 2015, he was appointed as Director General of Finance Department of China Petrochemical Corporation; in August 2016, he was appointed as Director General of Finance Department of Sinopec Corp.. Mr. Wang now concurrently acts as Vice Chairman of

Sinopec Finance CO., Ltd. in September 2016, he was appointed as Chief Financial Officer of Sinopec Corp.

Zhao Rifeng, aged 55, Vice President of Sinopec Corp. Mr. Zhao is a Professor level Senior Engineer with a master degree. In July 2000, he was appointed as Deputy General Manager of Sinopec Jinling Petrochemical Co., Ltd and Deputy Manager of Sinopec Jinling Company; in October 2004, he was appointed as General Manager of Sinopec Jinling Company; in October 2006, he was appointed as Vice Chairman and General Manager of Sinopec Jinling Petrochemical Co., Ltd; in November 2010, he was appointed as Chairman, General Manger, Deputy Secretary of CPC Committee of Sinopec Jinling Petrochemical Co., Ltd; in August 2013, he was appointed as Director General of Refining Department of Sinopec Corp.; and in December 2017, he was appointed as the Chairman and Secretary of CPC Committee of Sinopec Marketing Company Limited. In February 2018, he was appointed as Vice President of Sinopec Corp.

Huang Wensheng, aged 52, Vice President of Sinopec Corp., Secretary to the Board of Directors. Mr. Huang is a professor level senior economist with a university diploma. In March 2003, he was appointed as Deputy Director General of the Board Secretariat of Sinopec Corp.; in May 2006, he was appointed as Representative on Securities Matters of Sinopec Corp.; since August 2009, He has served as the Deputy Director General of President s office of Sinopec Corp. In September 2009, he was appointed as Director General of the Board Secretariat of Sinopec Corp.; In May 2012, he was appointed as Secretary to the Board of Directors of Sinopec Corp.; In June 2018, he was appointed concurrently as Director General of Department of Capital Management and Financial Services of China Petrochemical Corporation. In July 2018, he was appointed concurrently as Chairman, President and Secretary of CPC Committee of Sinopec Capital Co., Ltd.; and in May 2014, he was appointed as Vice President of Sinopec Corp.

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B. COMPENSATION

Salaries of Directors, Supervisors and Members of the Senior Management

Our directors and supervisors who hold working posts with us and other senior management members receive all their compensation from us in cash. Our compensation committee, with assistances from relevant administrative departments, determines the appropriate level of annual compensation for each of our directors and supervisors who hold working posts with us and other senior management members in two components: a base salary component and a performance rewards component. The base salary component is a fixed amount that will be paid on monthly basis. The performance rewards component is paid in one lump sum at about year end and the exact amounts of the performance rewards to be paid will be based on the completion by the Company of certain performance targets (key performance indicators, or KPIs) which are set at the beginning of the year and reviewed at year end. The KPIs cover areas such as profitability, workplace safety and environmental protection. Based on the annual review by our compensation committee, with the assistances from relevant administrative departments, of the Company s completion of various KPIs, our directors and supervisors who hold working posts with us and other senior management members will receive full or partial payments as their performance rewards.

The following table sets forth the compensation on individual basis for our directors, supervisors and executive officers who received compensation from us in 2018.

Name	Position with the Company	Remuneration paid by the Company in 2018 (RMB in thousands before tax)
Directors		
Dai Houliang	Chairman	467.8
Li Yunpeng	Director	
Yu Baocai	Director	
Ma Yongsheng	Director, President	394.6
Ling Yiqun	Director, Senior Vice President	
Liu Zhongyun	Director, Senior Vice President	
Li Yong	Director	
Tang Min	Independent Director	333.3
Fan Gang	Independent Director	333.3
Cai Hongbin	Independent Director	233.3
Ng, Kar Ling Johnny	Independent Director	233.3
Wang Zhigang	Former Director, Senior Vice President	482.9
Zhang Haichao	Former Director, Senior Vice President	
Jiao Fangzheng	Former Director, Senior Vice President	
Jiang Xiaoming	Former Independent Director	125.0
Andrew Y. Yan	Former Independent Director	125.0
Supervisors		
Zhao Dong	Chairman	
Jiang Zhenying	Supervisor	
Yang Changjiang	Supervisor	
Zhang Baolong	Supervisor	
Zou Huiping	Supervisor	1,034.7
Zhou Hengyou	Employee Representative Supervisor	340.8
Yu Renming	Employee Representative Supervisor	984.1

Yu Xizhi	Employee Representative Supervisor	1,008.6
Other Executive officers		
Lei Dianwu	Senior Vice President	1,155.6
Chen Ge	Senior Vice President	129.7
Wang Dehua	CFO	1,130.0
Zhao Rifeng	Vice President	606.6
Huang Wensheng	Vice President/Secretary to the Board of Directors	1,130.0
Chang Zhenyong	Former Vice President	748.9

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Note: Mr. Dai Houliang received remuneration paid by the Company during January to October in 2018.

Mr. Ma Yongsheng received remuneration paid by the Company since November 2018.

Mr. Zhou Hengyou received remuneration paid by the Company since May 2018.

Mr. Chen Ge received remuneration paid by the Company since November 2018.

C. BOARD PRACTICE

We have eleven directors. We have five special board committees, namely, the strategic committee, the audit committee, the remuneration and evaluation committee, the nominating committee and social responsibility management committee. All members of the audit committee and the majority of the members of the remuneration and evaluation committee and the nominating committee are independent directors. In addition, there is at least one independent director who is a financial expert in the audit committee.

The main responsibilities of the strategy committee are to conduct research and put forward proposals on the long-term development strategy and significant investments.

The members of our strategy committee are Dai Houliang, Ma Yongsheng, Ling Yiqun, Liu Zhongyun, and Fan Gang and Cai Hongbin.

The main responsibilities of the audit committee include:

- to propose the appointment or replacement of the independent auditor;
- to oversee the internal auditing system and its implementation;
- to coordinate the communication between the internal auditing department and the independent auditor;
- to examine and approve financial information and it disclosure; and
- to examine the financial policies, internal auditing, internal control and risk management system.

The members of our audit committee are Ng, Kar Ling Johnny, Tang Min and Cai Hongbin, all of whom are our Independent Non-executive Directors. Our Board has determined that Ng, Kar Ling Johnny qualifies as an audit committee financial expert.

The main responsibilities of the remuneration and appraisal committee (remuneration committee) include:

- to review evaluation standards on the performance of directors and senior management, to conduct their evaluations and make suggestions to the Board; and

- to review compensation policies and scheme in respect of the remuneration of directors, supervisors and executive officers, and make suggestions to the Board.

The members of our remuneration committee are Fan Gang, Li Yunpeng and Ng, Kar Ling Johnny.

The main responsibilities of the nominating committee include:

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- to advise the Board on the size and composition of the Board based on the company s business activities, asset size and shareholding structure;

- to review the selection criteria and procedures for directors and senior management, and to make suggestions to the Board; and

- to search in the domestic and overseas talent market and within the Company for qualified candidates, review the director and president candidates, senior vice president candidates, chief financial officer and vice president candidates as suggested by the president, and secretary to the Board as proposed by the chairman, and make recommendations to the Board.

The members of nominating committee are Dai Houliang, Tang Min and Ng, Kar Ling Johnny.

The main responsibilities of the social responsibility management committee are to research on the policy, governance, strategy and planning for the Company s social responsibility and put forward proposals to the Board.

The members of social responsibility management committee are Dai Houliang, Tang Min and Fan Gang.

Our directors have entered into directors service contracts with us and under such contracts, there is no severance pay arrangements for our directors.

As a joint stock company incorporated in the PRC, we are required by the PRC law to have in place a board of supervisors. The board of supervisors shall consist of no less than three supervisors, and at least one third of the board of supervisors shall be employee representative supervisors. Employee representative supervisors shall be elected by our employees at a meeting of employee representatives, a general meeting of employees or through other means.

According to our articles of association, the main responsibilities of our board of supervisors include:

- to review the Company s financial affairs;

- to supervise directors and executive officers when they perform their duties, and to propose to our shareholders the dismissal of any director or executive officer who has violated our articles of association and relevant laws and regulation;

- to demand directors or executive officers to rectify their conducts that conflict with our interests;

- to propose the call of any extraordinary general meeting of shareholders to the Board, and to convene and preside over such shareholders meeting if the Board fails to do so; and

- to initiate legal proceedings against directors and executive officers on behalf of the Company.

Our board of supervisors currently consists of eight supervisors including three employee representative supervisors. In 2018, some of the supervisors attended the Company s shareholders meetings and presented at the Company s board meetings, and made assessment on the work of the Board. The supervisors went to the Company s subsidiaries for research, made suggestions to improve management of the Company.

D. EMPLOYEES

As of December 31, 2016, 2017 and 2018, we had approximately 451,611, 446,225 and 423,543 employees, respectively. The following table sets forth the number of our employees by our business segments, their scope of work and their education as of December 31, 2018.

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By Segment	Number of Employees	Percentage of Total Number of Employees (%)
Exploration and production	139,873	33
Refining	60,492	14
Marketing and distribution	142,669	34
Chemicals	60,062	14
Research and Development	5,873	1
Corporate and other	14,574	4
Total	423,543	100

By Employee s Scope of Work	Number of Employees	Percentage of Total Number of Employees (%)
Production	153,867	37
Sales	131,180	31
Technical	81,778	19
Finance	9,479	2
Administration	33,883	8
Others	13,356	3
Total	423,543	100

By Education	Number of Employees	Percentage of Total Number of Employees (%)
Master s degree and above	16,535	4
University	108,165	25
Junior college	94,162	22
Technical secondary school	37,015	9
Senior high school and technical school degree or below	167,666	40
Total	423,543	100

During this report period, there has been no significant change to our core technical team and key technicians.

We have a workers association that protects employee rights, organizes educational programs, assists in the fulfillment of economic objectives, encourages employee participation in management decisions, and assists in mediating disputes between us and individual employees. We regulate employee behavior through the Employee Code of Conduct and build a good working atmosphere. We have not been subject to any strikes or other labor disturbances that have interfered with our operation, and we believe that our relations with our employees are good.

The total remuneration of our employees includes salary, performance bonuses and allowances. Employees also receive certain subsidies in housing, health services, education and other miscellaneous items.

E. SHARE OWNERSHIP

As of December 31, 2018, except our director and senior vice president Ling Yiqun who holds 13,000 shares of our A shares, none of our directors, supervisors and executive officers beneficially own any of our shares.

ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

A. MAJOR SHAREHOLDERS

The following table sets forth information regarding our 5% or more shareholders as of April 15, 2019.

Shareholder	Number of Shares Owned (in millions)	Percentage of Ownership (%)
Sinopec Group Company(1)	83,262	68.77

(1) Inclusive of 553,150,000 H shares held by Sinopec Century Bright Capital Investment Ltd. (overseas wholly-owned subsidiary of Sinopec Group Company) under HKSCC Nominees Limited.

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As of April 15, 2019, 1,592,180,600 H shares were registered in the name of a nominee of Citibank, N.A., the depositary under our ADS deposit agreement. Citibank, N.A. has advised us that, as of April 15, 2019, 15,921,806 ADSs, representing 1,592,180,600 H shares, were held of record by Cede & Co. and 34 other registered shareholders domiciled in and outside of the United States. We have no further information as to our shares held, or beneficially owned, by U.S. persons.

To avoid the adverse effects brought by intra-industry competition to the maximum extent possible, we and Sinopec Group Company have entered into a non-competition agreement whereby Sinopec Group Company has agreed to: refrain from operating new businesses which compete or could compete with us in any of our domestic or international markets; grant us an option to purchase Sinopec Group Company s operations that compete or could compete with our businesses; operate its sales enterprises in a manner uniform to our sales and service operations; and appoint us as sales agent for certain of its products which compete or could compete with our products.

In March 2017, Sinopec Group has earnestly fulfilled its undertaking in eliminating competitions in chemical business with us through: (1) subscribing capital contribution of joint ventures controlled by us, by way of injecting net assets of certain chemical business and cash; (2) authorizing us to be in charge of production plan, management and sales of the remaining chemical business. The competition in chemical business between Sinopec Group and us has been eliminated.

Given that Sinopec Group Company engages in the same or similar businesses as us with regard to the exploration and production of overseas petroleum and natural gas, Sinopec Group Company issued an undertaking on April 28, 2014, granting us an option, in ten years since the issue date of the undertaking, (1) after thorough analysis from political, economic and other perspectives, to require Sinopec Group Company to sell its overseas oil and gas assets owned at the time, to the extent remaining in its possession, to us, (2) to require Sinopec Group Company to sell its overseas oil and gas assets to us, provided that the aforementioned proposed acquisitions comply with the applicable laws and regulations, contractual obligations and other procedural requirements. By then, to the extent in compliance with the applicable law and the requirements of the contract and procedures, Sinopec Group Company will sell the oil and gas assets as mentioned in (1) and (2) to us as required.

B. RELATED PARTY TRANSACTIONS

Sinopec Group Company owned 68.77% of our outstanding equity as of April 15, 2019. Sinopec Group Company is able to exercise all the rights of a controlling shareholder, including the election of directors and voting in respect of amendments to our articles of association. Sinopec Group Company, as our controlling shareholder, is subject to certain non-controlling shareholder protection provisions under our articles of association.

We have engaged from time to time and will continue to engage in a variety of transactions with Sinopec Group Company, which provide a number of services to us, including ancillary supply, transport, educational and community services. The nature of our transactions with Sinopec Group Company is governed by a number of service and other contracts between Sinopec Group Company and us. A discussion of these agreements and arrangements is set forth under the heading Item 7. Major Shareholders and Related Party Transactions B. Related Party Transactions in our annual report on Form 20-F filed with the Securities and Exchange Commission on October 10, 2000, April 13, 2007, May 20, 2009, April 30, 2010, April 11, 2013, April 16, 2014, April 10, 2015, April 20, 2016, April 24, 2017 and April 27, 2018, respectively.

On August 26, 2015, we entered into an equity transfer agreement relating with Sinopec Baichuan Economic and Trading Company (Baichuan Co., a wholly-owned subsidiary of Sinopec Group Company), pursuant to which, we proposed to transfer 100% of the equity interest of Sinopec

Beijing Jingtian Engineering and Construction Co., Ltd. (Jingtian Co.) held by us to Baichuan Co. The final consideration of above-mentioned equity interest was around RMB 1.869 billion.

On October 29, 2015, we entered into a joint venture agreement with SAMC in relation to the formation of Gaoqiao. We and SAMC subscribed 55% and 45% of the registered capital of Gaoqiao, respectively.

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On December 28, 2015, the Proposal on Providing Completion Guarantee for the Project Financing of Zhongtian Synergetic was considered and approved at the fourth meeting of the sixth session of Board, where our directors unanimously agreed to us providing a completion guarantee to Zhongtian Synergetic Ordos coal deep processing demonstration project subject to the provision of completion guarantees by the other shareholders of Zhongtian Synergetic on a pro-rata basis (the Guarantee). The Guarantee has been considered and approved at the first extraordinary general meeting for the year 2016. Zhongtian Synergetic is a connected party of the Company under the Shanghai Listing Rules because its vice chairman, Mr. Chang Zhenyong is a vice president of the Company. However, Zhongtian Synergetic is not a connected person under the Hong Kong Listing Rules. For our related party transaction starting from January 1, 2016, please also see Note 34 of our consolidated financial statements included elsewhere in this annual report for a detailed discussion of our related party transactions.

On July 9, 2018, we entered into the Articles of Association of Sinopec Capital Co., Ltd., or Sinopec Capital, with Sinopec Group Company, pursuant to which, we will establish Sinopec Capital with Sinopec Group Company with a registered capital of RMB 10 billion, of which, we will subscribe capital contribution of RMB 4.9 billion by cash, representing 49% of the registered capital of Sinopec Capital, and Sinopec Group will subscribe capital contribution of RMB 5.1 billion by cash, representing 51% of the registered capital of Sinopec Capital. Upon the establishment of Sinopec Capital, its investments will focus on strategic emerging industries, including new energy, new material, energy conservation and environmental protection, and intelligence manufacturing in relation to the industry chain. In respect of the investment projects which are related to our principal business, we will have the right of first refusal to acquire such projects.

On August 24, 2018, we entered into the Continuing Connected Transaction Fifth Supplemental Agreement with Sinopec Group Company, pursuant to which the terms of Continuing Connected Transactions under the Mutual Supply Agreement and the Cultural, Educational, Hygiene and Auxiliary Agreement (formerly named Cultural, Educational, Hygiene and Community Services Agreement) were renewed as January 1, 2019 to December 31, 2021. On October 23, 2018 the First Extraordinary General Meeting of 2018 of the Company approved the Continuing Connected Transactions for the three years ending December 31, 2021. See Exhibit 4.15.4 herewith for details of the Continuing Connected Transactions.

In 2018, our related connected transactions occurred in accordance with the abovementioned Continuing Connected Transaction agreements amounted to RMB 417.2 billion, among which, our purchase amounted to RMB 267.51 billion, accounting for 9.0% of the amount of similar transactions, including products and services (purchasing, storage and transportation, exploration and development services, and production-related services) of RMB 251.4 billion, auxiliary and community service of RMB 6.66 billion, house rental payment of RMB 522 million, land rental payment of RMB 7.77 billion, and the interest expense of RMB 1.11 billion. The amount of our sales was RMB 149.7 billion, accounting for 4.9% of the transaction amount of similar transactions, including sales of goods of RMB 148.8 billion, agency commission income of RMB 69 million and interest income of RMB 848 million.

The above-mentioned variety of transactions with Sinopec Group Company are in compliance with the upper limit of the amount of related party transactions approved by the shareholders and the Board.

C. INTERESTS OF EXPERTS AND COUNSEL

Not applicable.

ITEM 8. FINANCIAL INFORMATION

A. CONSOLIDATED STATEMENTS AND OTHER FINANCIAL INFORMATION

See consolidated financial statements included in this annual report following Item 19.

Legal Proceedings

We are involved in certain judicial and arbitral proceedings before Chinese courts or arbitral bodies concerning matters arising in connection with the conduct of our businesses. We believe, based on currently available information, that the results of such proceedings, in the aggregate, will not have a material adverse effect on our financial condition or results of operations.

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Dividend Distribution Policy

In 2012, we amended our articles of association based on its original framework. Our dividend distribution policy was amended. According to our amended articles of association:

Our board of directors will determine the payment of dividends, if any, with respect to our shares on a per share basis. Any final dividend for a financial year shall be subject to shareholders approval. The board may declare interim and special dividends at any time under general authorization by a shareholders ordinary resolution. A decision to declare or to pay any dividends in the future, and the amount of any dividends, will depend on our results of operations, cash flows, financial condition, the payment by our subsidiaries of cash dividends to us, future prospects and other factors which our directors may determine are important.

For holders of our H shares, cash dividend payments, if any, shall be declared by our board of directors in Renminbi and paid in HK dollars. The depositary will convert the HK dollar dividend payments and distribute them to holders of ADSs in US dollars, less expenses of conversion.

The Company may distribute dividends in the following forms: cash, shares or other forms provided by laws, administrative rules, regulations of competent authorities and regulatory provisions in the place where the Company s shares are listed. The Company shall give priority to the distribution of dividends in cash. The Company may make interim dividends distribution. The Company shall distribute cash dividends when the Company s net profit and retained earnings, in separate financial statement, are positive and the Company has adequate cash inflows over the requirements of cash outflows of operation and sustainable development. The cash dividends per annum should not be less than thirty percent of the net profit of the Company in the current year. Dividends in the form of shares will be distributed to the depositary and, except as otherwise described in the Deposit Agreement, will be distributed by the depositary in the form of additional ADSs, to holders of ADSs.

At the fifth meeting of the seventh session of our board, our board approved the proposal to distribute a final cash dividend of RMB 0.26 (including tax) per share, combining with an interim distributed dividend of RMB 0.16 (including tax) per share, the total dividend for 2018 is RMB 0.42 (including tax) per share. The proposal is subject to the shareholder s approval at the annual general meeting.

B. SIGNIFICANT CHANGES

None.

ITEM 9. THE OFFER AND LISTING

A. OFFER AND LISTING DETAILS

Not applicable, except for Item 9A(4) and Item 9C.

Our H Shares have been listed on the Hong Kong Stock Exchange (Code: 0386), and our ADSs, each representing 100 H Shares, have been listed on the New York Stock Exchange and the London Stock Exchange under the symbol SNP, since we completed our initial public offering on October 19, 2000. Prior to that time, there was no public market for our H Shares. The Hong Kong Stock Exchange is the principal non-U.S. trading market for our H Shares. Our publicly traded domestic shares, or A shares, are listed on the Stock Exchange of Shanghai since August 8, 2001 (Code: 600028).

On 14 February 2013, we issued 2,845,234,000 listed H shares with a par value of RMB 1.00 each at the price of HKD 8.45 per share. The aggregate gross proceeds from the placing amounted to approximately HKD 24.0 billion.

On January 26, 2015, the conditional redemption of the 2011 convertible bonds amounting to RMB 23 billion, was triggered. As of February 11, 2015 (the redemption registration date), the cumulative conversion of the 2011 convertible bonds to listed A shares is 4,623,769,047 shares, and the balance of registered 2011 convertible bonds is RMB 52,766,000. On February 17, 2015, we redeemed the balance plus interests payable at the aggregate amount of RMB 53,348,948.28. The 2011 convertible bonds were delisted from the Shanghai Stock Exchange.

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ITEM 10. ADDITIONAL INFORMATION

A. SHARE CAPITAL

Not applicable.

B. MEMORANDUM AND ARTICLES OF ASSOCIATION

In 2018, we amended the articles of association and rules and procedures for the board meetings.

The following is a summary of certain provisions of our articles of association and its appendices, as amended, the Company Law of the PRC (2018) and certain other applicable laws and regulations of the PRC. You and your advisors should refer to the text of our articles of association, as amended, and to the texts of applicable laws and regulations for further information.

Objects and Purposes

We are a joint stock limited company established in accordance with the Company Law and certain other laws and regulations of the PRC. We are registered with the PRC State Administration of Industry and Commerce with business license number 100000000032985. Article 13 of our articles of association provides that our scope of businesses includes, among other things, the production, storage, pipeline transportation, land transportation, water transportation and sale of non-coal mines (oil and natural gas etc.), dangerous chemicals (ethylene, propylene, butadiene and naphtha etc.), heavy oil, rubber and other chemical raw materials and products; oil refining; wholesaling and retailing (for subsidiaries only) of gasoline, kerosene and diesel oil; the production, storage, transportation and sale of natural gas chemicals and coal chemicals; sale of lubricant, fuel oil, solvent naphtha and asphalt; production of chemical fertilizer; operation of LPG station, sale of CNG, LNG, LPG and city gas; operation of electrical vehicle charging station; production, supervision of manufacturing, installation of oil and petrochemical machinery and equipment; manufacturing of equipment, tools, instruments and gauges in petroleum drilling and production; purchase and sale of oil and petrochemical raw and auxiliary materials, equipment and parts; technology and information, research, development, application and consultation of alternative energy products; production and sale of electricity, steam, water and industrial gases; wholesaling of farm, forestry and pasture products; operation of general merchandise convenience stores; wholesaling and retailing of knitted garments and housewares; wholesaling and retailing of cultural and sports goods and equipment; sale of food, beverages and tobacco products; wholesaling and retailing of pharmaceuticals and medical devices; retailing of automobiles, motorcycles and components; repair and maintenance of and technical training for automobiles and motorcycles; wholesaling and retailing of machineries, hardware products, electronic products and household appliances; retailing of furniture and materials for indoor decoration; stalls, no-store sale and other forms of retail business; general merchandise retail; accommodation and catering services; manufacturing of food and food additives; residents´ services; transportation agency services; warehousing; operation of self-owned properties; leasing of natural gas storage facility; leasing of houses, working places, vehicles and equipment; lease of machineries; media, advertising and acting as commission agent; insurance brokerage and agency services; financial trust and management services; E-commerce; self-operation of and acting as agency for the import and export of various commodities and technologies other than those restricted or prohibited by the state from import and export; contractor of overseas mechanical, electronics, petrochemical projects and domestic international bid-inviting projects; export of equipment and materials required for the aforementioned overseas projects; dispatch of labor required for the aforementioned overseas projects; railway transportation; coastal engineering auxiliary operations, port operations, oil spill response, safety guard, ship pollution removal operations; professional technical service industry quality inspection technical services, environmental and ecological monitoring and testing services; edible salt production, wholesale, retail; shale gas , coalbed methane, shale oil, combustible ice, uranium and other resources exploration, development, storage and transportation, pipeline transportation, sales; natural gas power generation, power supply; power installation and maintenance, power technology development and services.

Directors

Our directors shall be elected at our shareholders general meeting. Cumulative voting shall be adopted for the election of directors if a controlling shareholder controls 30% or more of our shares. Details of the cumulative voting mechanism are set forth in Article 59 of the Rules and Procedures for the Shareholders General Meetings that is an appendix to, and forms an integral part of, our articles of association. Our directors shall be elected for a term of three years and may serve consecutive terms upon re-election, except that independent directors may only serve a maximum of two terms. Our directors are not required to hold any shares in us, and there is no age limit requirement for the retirement or non-retirement of our directors.

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Where a director is materially interested, directly or indirectly, in a contract, transaction or arrangement (including any proposed contract, transaction or arrangement) with us, he or she shall declare the nature and extent of his or her interests to the board of directors at the earliest opportunity, whether or not such contract, transaction or arrangement is otherwise subject to the approval of the board. A director shall not vote, and shall not be counted in the quorum of the meeting, on any resolution concerning any contract, transaction or arrangement where the director owns material rights or interests therein. A director is deemed to be interested in a contract, transaction or arrangement in which his associate (as defined by the Listing Rule of the Hong Kong Stock Exchange) is interested.

Unless the interested director discloses his interests to the board and the contract, transaction or arrangement in which the director is materially interested is approved by the board at a meeting in which the director neither votes nor is not counted in the quorum, such contract, transaction or arrangement shall be voidable by us except with respect to a bona fide party thereto who does not have notice of the director s interests.

We are prohibited from making loans or providing guarantees to our directors and their associates except where such loan or guarantee is to meet expenditure requirement incurred or to be incurred by the director for the purposes of the company or for the purpose of enabling the director to perform his or her duties properly in accordance with the terms of a service contract approved by the shareholders in a general meeting.

The board of directors shall examine and approve the amount of the long-term loans for the current year according to the annual investment plan as approved by the shareholders general meeting. The chairman of the board of directors is authorized to make adjustments of no more than 10% of the total amount of the long-term loans as approved by the board of directors for the current year. Within the total amount of the long-term loans as approved by the board of directors, the chairman of the board of directors is authorized to approve and execute individual long-term loan agreement with the loan amount exceeding RMB 1 billion, and the president is authorized to approve and execute individual long-term loan agreement with the loan amount not exceeding RMB 1 billion. Within the total amount of the working capital loans for the current year as approved by the board of directors, the chairman of the board of directors is authorized to execute the overall short-term loan facility agreement for raising working capitals as we need.

Matters relating to the remuneration of our directors shall be determined by the shareholders general meeting.

Dividends

A distribution of final dividends for any financial year is subject to shareholders approval. Except as otherwise decided by Shareholders meeting, the board of directors may make decision on the distribution of interim dividends. Except as otherwise provided by laws and regulations, the sum of interim dividends shall not exceed 50 percent of the net profit for the half year interim period. Dividends may be distributed in the forms of cash, shares or other forms provided by laws, administrative rules or regulations of competent authorities and regulatory provisions in the place where the Company s shares are listed. The Company shall give priority to the distribution of dividends in cash. A distribution of shares, however, must be approved by special resolution of the shareholders.

Dividends may only be distributed after allowance has been made for:

- recovery of losses, if any;

- allocations to the statutory surplus reserve fund; and

- allocations to a discretionary surplus reserve fund if approved by the shareholders.

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The allocations to the statutory surplus reserve fund shall be 10% of our after-tax profits of the current year determined in accordance with ASBE. In the event that the statutory surplus reserve balance reaches fifty (50) percent of the registered capital of the Company, no allocation is needed.

The articles of association require us to appoint on behalf of the holders of H shares a receiving agent which is registered as a trust corporation under the Trustee Ordinance of Hong Kong to receive dividends declared by us in respect of the H shares on behalf of such shareholders. The articles of association require that cash dividends in respect of H shares be declared in Renminbi and paid by us in HK dollars. The depositary of our ADSs will convert such proceeds into US dollars and will remit such converted proceeds to our holders of ADSs. If we record no profit for the year, we may not normally distribute dividends for the year.

Dividend payments may be subject to PRC withholding tax.

Voting Rights and Shareholders Meetings

Our board of directors shall convene a shareholders annual general meeting once every year and within six months from the end of the preceding financial year. Our board shall convene an extraordinary general meeting within two months of the occurrence of any one of the following events:

- where the number of directors is less than the number stipulated in the PRC Company Law or two-thirds of the number specified in our articles of association;
- where our unrecovered losses reach one-third of the total amount of our actually paid-in share capital;
- where shareholder(s) holding 10% or more of our issued and outstanding voting shares request(s) in writing the convening of an extraordinary general meeting;
- whenever our board deems necessary or our board of supervisors so requests; or
- circumstances provided in the articles of association.

Meetings of a special class of shareholders must be called in certain enumerated situations when the rights of the holders of such class of shares may be modified or adversely affected as discussed below. Proposals made by the board of directors, the board of supervisors or shareholder(s) holding 3% or more of the total number of voting shares shall be included in the agenda for the relevant general meeting if they are matters which fall within the scope of the functions and powers of shareholders in general meeting. Shareholder(s) holding 3% or more of the total shares of the Company may put forward interim motions by written proposals to the convener 10 days before the shareholders general meeting. The convener shall publish supplementary notice to announce the interim motion within two days upon receiving.

All shareholders meetings must be convened by our board of directors by written notice given to shareholders no less than 45 days before the meeting, by our board of supervisors or certain qualified shareholders in case a shareholders meeting is not convened by our board of directors and board of supervisors. Shareholder(s) holding 10% or more the total number of shares of the Company have the right to convene and chair the interim shareholders general meeting or class shareholders meeting in accordance with the provisions in laws, administrative rules and the articles of association, in the event that the board of directors and the board of supervisors fail to convene and chair such meeting upon demand made by such shareholders. Based on the written replies received by us 20 days before a shareholders meeting, we shall calculate the number of voting shares represented by shareholders who have indicated that they intend to attend the meeting. Where the number of voting shares represented by those shareholders amount to more than one-half of our total voting shares, we may convene the shareholders general meeting (regardless of the number of shareholders who actually attend). Otherwise, we shall, within five days, inform the shareholders again of the motions to be considered and the date and venue of the meeting by way of public announcement. After the announcement is made, the shareholders meeting may be convened. The accidental omission by us to give notice of a meeting to, or the non-receipt of notice of a meeting by, a shareholder will not invalidate the proceedings at that shareholders meeting.

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Shareholders at meetings have the power, among other things, to approve or reject our profit distribution plans, annual budget, financial statements, increase or decrease in share capital, issuance of debentures, merger or liquidation and any amendment to our articles of association. Shareholders of the shares which the Company issues to foreign investors for subscription in foreign currencies possess the same rights and undertake the same obligations as those of the shares which the Company issues to domestic investors for subscription in Renminbi. In addition, the rights of a class of shareholders may not be modified or abrogated, unless approved by a special resolution of all shareholders at a general shareholders meeting and by a special resolution of shareholders of that class of shares at a separate meeting. Our articles of association enumerate, without limitation, certain amendments which would be deemed to be a modification or abrogation of the rights of a class of shareholders, including increasing or decreasing the number of shares of a class disproportionate to increases or decreases of other classes of shares, removing or reducing rights to receive dividends in a particular currency or creating shares with voting or equity rights superior to shares of such class.

Cumulative voting in accordance with the relevant laws and regulations in effect is adopted for the election of directors and supervisors. For all other matters, each share is entitled to one vote on all such matters submitted to a vote of our shareholders at all shareholders meetings, except for meetings of a special class of shareholders where only holders of shares of the affected class are entitled to vote on the basis of one vote per share of the affected class.

Shareholders are entitled to attend and vote at meetings either in person or by proxy. Proxies must be in writing and deposited at our legal address, or such other place as is specified in the meeting notice, no less than 24 hours before the time for holding the meeting at which the proxy proposes to vote or the time appointed for the passing of the relevant resolution(s). When the instrument appointing a proxy is executed by the shareholder s attorney-in-fact, such proxy when deposited must be accompanied by a notary certified copy of the relevant power of attorney or other authority under which the proxy was executed.

Except for those actions discussed below which require supermajority votes (special resolutions), resolutions of the shareholders are passed by a simple majority of the voting shares held by shareholders who are present in person or by proxy. Special resolutions must be passed by or more than two-thirds of the voting rights represented held by shareholders who are present in person or by proxy.

The following decisions must be adopted by special resolution:

- an increase or reduction of our share capital or the issue of shares, including stock distributions, of any class, warrants and other similar securities;

- issuance of debentures;

- our division, merger, dissolution and liquidation; (Shareholders who object to a proposed division or merger are entitled to demand that either we or the shareholders who approved the merger purchase their shares at a fair price.)

- amendments to our articles of association and its appendices;

- change of our company form;

- acquisition or disposal of material assets or provision of material guarantee within one year, with the value exceeding 30% of our latest audited total assets;

- any stock incentive plan;

- any other matters required by laws and regulations or our articles of association and its appendices or considered by the shareholders in a general meeting and which they have resolved by way of an ordinary resolution to be of a nature which may have a material impact on us and should be adopted by special resolution.

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All other actions taken by the shareholders, including the appointment and removal of our directors and supervisors and the declaration of cash dividend payments, will be decided by an ordinary resolution of the shareholders. The listing agreement between us and the Hong Kong Stock Exchange (Listing Agreement) provided that we may not permit amendments to certain sections of the articles of association which have been mandated by the Hong Kong Stock Exchange. These sections include provisions relating to:

- varying the rights of existing classes of shares;
- voting rights;
- our power to purchase our own shares;
- rights of non-controlling shareholders; and
- procedure on liquidation.

In addition, certain amendments to the articles of association require the approval and consent of the relevant PRC authorities.

Any shareholder resolution which is in violation of any laws or administrative regulations of the PRC will be null and void subject to statutory procedures.

Liquidation Rights

In the event of our liquidation, the H shares will rank pari passu with the domestic ordinary shares, and payment of debts out of our remaining assets shall be made in the order of priority prescribed by applicable laws and regulations or, if no such standards exist, in accordance with such procedure as the liquidation committee which has been appointed either by us or the People s Court of the PRC may consider to be fair and reasonable. After payment of debts, we shall distribute the remaining property to shareholders according to the class and proportion of their shareholders.

Further Capital Call

Shareholders are not liable to make any further contribution to the share capital other than according to the terms, which were agreed by the subscriber of the relevant shares at the time of subscription.

Increases in Share Capital and Preemptive Rights

The articles of association require the approval by a special resolution of the shareholders and by special resolution of holders of domestic ordinary shares and overseas-listed foreign invested shares at separate shareholder class meetings be obtained prior to authorizing, allotting, issuing or granting shares, securities convertible into shares or options, warrants or similar rights to subscribe for any shares or such convertible securities. No such approval is required if, but only to the extent that:

- we issue domestic ordinary shares and/or overseas-listed foreign-invested shares, either separately or concurrently, in numbers not exceeding 20% of the number of domestic ordinary shares and overseas-listed foreign-invested shares then in issue, respectively, in any 12-month period, as approved by a special resolution of the shareholders; or

- if our plans for issuing domestic ordinary shares and overseas-listed foreign-invested shares upon our establishment are implemented within fifteen months of the date of approval by the China Securities Regulatory Commission.

New issues of shares must also be approved by the relevant PRC authorities.

Reduction of Share Capital and Purchase by Us of Our Shares and General Mandate to Repurchase Shares

We may reduce our registered share capital only upon obtaining the approval of the shareholders by a special resolution and, in certain circumstances, of relevant PRC authorities. The number of H shares, which may be purchased is subject to the Hong Kong Takeovers and Share Repurchase Codes.

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Restrictions on Large or Controlling Shareholders

Our articles of association provide that, in addition to any obligation imposed by laws and administration regulations or required by the listing rules of the stock exchanges on which our H shares are listed, a controlling shareholder shall not exercise his voting rights in a manner prejudicial to the interests of the shareholders generally or of some part of the shareholders:

- to relieve a director or supervisor from his or her duty to act honestly in our best interests;

- to approve the expropriation by a director or supervisor (for his or her own benefit or for the benefit of another person) of our assets in any way, including, without limitation, opportunities which may benefit us; or

- to approve the expropriation by a director or supervisor (for his or her own benefit or for the benefit of another person) of the individual rights of other shareholders, including, without limitation, rights to distributions and voting rights (save according to a restructuring of our company which has been submitted for approval by the shareholders in a general meeting in accordance with our articles of association and its appendices).

A controlling shareholder, however, will not be precluded by our articles of association or any laws and administrative regulations or the listing rules of the stock exchanges on which our H shares are listed from voting on these matters.

A controlling shareholder is defined by our articles of association as any person who acting alone or in concert with others:

- is in a position to elect half or more of the board of directors;

- has the power to exercise, or to control the exercise of, 30% or more of our voting rights;

- acting separately or in concert with others, holds 30% or more of our issued and outstanding shares,; or

- acting separately or in concert with others, has de facto control of us in any other way.

As of the date of this annual report, Sinopec Group Company is and will be our only controlling shareholder.

Disclosure

The Listing Agreement imposes a requirement on us to keep the Hong Kong Stock Exchange, our shareholders and other holders of our listed securities informed as soon as reasonably practicable of any information relating to us and our subsidiaries, including information on any major new developments which are not public knowledge, which:

- is necessary to enable them and the public to appraise the position of us and our subsidiaries;
- is necessary to avoid the establishment of a false market in its securities; and
- might be reasonably expected materially to affect market activity in and the price of its securities.

There are also requirements under the Listing Rules for us to obtain prior shareholders approval and/or to disclose to shareholders details of certain acquisitions or disposals of assets and other transactions (including transactions with controlling shareholders).

Sources of Shareholders Rights

The PRC s legal system is based on written statutes and is a system in which decided legal cases have little precedent value. The PRC s legal system is similar to civil law systems in this regard. In 1979, the PRC began the process of developing its legal system by undertaking to promulgate a comprehensive system of laws. In December 1993, the Standing Committee of the 8th National People s Congress adopted the PRC Company Law. On October 27, 2005, the PRC Company law was amended by the Standing Committee of the 10th National People s Congress, and came into force on January 1, 2006. The amended PRC Company Law enhanced the protection of shareholders rights primarily in the following regards:

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- Shareholders holding 10 percent or more of the shares of the Company are entitled to petition the court to dissolve the Company if (i) the Company is in serious operational difficulties; (ii) its continuing existence will seriously prejudice the interests of the shareholders; and (iii) such difficulties cannot be resolved through any other means;

- Shareholders holding 1 percent or more of the shares of the Company for more than 180 consecutive days are entitled to request the board of supervisors (in terms of directors and senior management) or the board of directors (in terms of supervisors) to bring legal proceedings, or bring legal proceedings in their own name on behalf of the Company where it is in emergency and the Company will be subject to irreparable loss if not to do so, against directors, supervisors or senior management who fail to comply with the laws and regulations or the Company s articles of association in the course of performing their duties and cause loss to the Company;

- Shareholders who oppose the Company s decision on merger or separation are entitled to request the Company to repurchase their shares; and

- Shareholders holding 10 percent or more of the voting rights of the Company are entitled to convene a shareholders meeting.

Currently, the primary sources of shareholder rights are our articles of association, as amended, the PRC Company Law and the Listing Rules of the Hong Kong Stock Exchange, which, among other things, impose certain standards of conduct, fairness and disclosure on us, our directors and our controlling shareholder, i.e., Sinopec Group Company. To facilitate the offering and listing of shares of PRC companies overseas, and to regulate the behavior of companies whose shares are listed overseas, the State Council Securities Committee and the State Commission for Restructuring the Economic System issued on August 27, 1994 the Mandatory Provisions for articles of association of Company Listing Overseas (Mandatory Provisions). These Mandatory Provisions become entrenched in that, once they are incorporated into the articles of association of a PRC company, any amendment to those provisions will only become effective after approval by the SASAC. The Listing Rules require a number of additional provisions to the Mandatory Provisions to be included in the articles of association of PRC companies listing H shares on the Hong Kong Stock Exchange (Additional Provisions). The Mandatory Provisions and the Additional Provisions have been incorporated into our articles of association.

In addition, upon the listing of and for so long as the H shares are listed on the Hong Kong Stock Exchange, we will be subject to those relevant ordinances, rules and regulations applicable to companies listed on the Hong Kong Stock Exchange, including the Listing Rules of the Hong Kong Stock Exchange, the Securities (Disclosure of Interests) Ordinance (SDI Ordinance), the Securities (Insider Dealing) Ordinance and the Hong Kong Codes on Takeovers and Mergers and Share Repurchases (Hong Kong Takeovers and Repurchase Codes).

Unless otherwise specified, all rights, obligations and protections discussed below derive from our articles of association and/or the PRC Company Law.

Enforceability of Shareholders Rights

There has not been any public disclosure in relation to the enforcement by holders of H shares of their rights under constitutive documents of joint stock limited companies or the PRC Company Law or in the application or interpretation of the PRC or Hong Kong regulatory provisions applicable to PRC joint stock limited companies.

In most states of the United States, shareholders may sue a corporation derivatively. A derivative suit involves the commencement by a shareholder of a corporate cause of action against persons (including corporate officers, directors or controlling shareholders) who have allegedly wronged the corporation, where the corporation itself has failed to enforce such claim against such persons directly. Such action is brought based upon a primary right of the corporation, but is asserted by a shareholder on behalf of the corporation. The PRC company law as amended in October 2005 and effective in January 2006 has also granted shareholders with the rights to bring such derivative suits.

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Our articles of association provide that all differences or claims, arising from any provision of our articles of association, any right or obligation conferred or imposed by the PRC Company Law or any other relevant law or administrative regulation which concerns our affairs:

- between a holder of overseas-listed foreign-invested shares and us;
- between a holder of overseas-listed foreign-invested shares and any of our directors, supervisors, general managers, deputy general managers or other senior officers; or
- between a holder of overseas-listed foreign-invested shares and a holder of domestic ordinary shares

must be referred to arbitration at either the China International Economic and Trade Arbitration Commission in the PRC or the Hong Kong International Arbitration Center, and the laws of the PRC shall apply, save as otherwise provided in the laws and administrative regulations. Our articles of association provide that such arbitration will be final and conclusive. In June 1999, an arrangement was made between the People s Courts of the PRC and the courts of Hong Kong to mutually enforce arbitration rewards rendered in the PRC and Hong Kong according to their respective laws. This new arrangement was approved by the Supreme Court of the PRC and the Hong Kong Legislative Council and became effective on February 1, 2000. We have provided an undertaking to the United States Securities and Exchange Commission that, at such time, if any, as all applicable laws and regulations of the PRC and (unless our H shares are no longer listed on the Hong Kong Stock Exchange) all applicable regulations of the Stock Exchange of Hong Kong Ltd. shall not prohibit, and to the extent Section 14 under the United States Securities Act of 1933, as amended, so requires, our board of directors shall propose an amendment to the articles of association which would permit shareholders to adjudicate disputes arising between our shareholders and us, our directors, supervisors or officers by means of judicial proceedings.

The holders of H shares will not be able to bring actions on the basis of violations of the Listing Rules and must rely on the Hong Kong Stock Exchange to enforce its rules. The SDI Ordinance establishes certain obligations in relation to disclosure of shareholder interests in Hong Kong listed companies, the violation of which is subject to prosecution by the Securities and Futures Commission of Hong Kong. The Hong Kong Takeovers and Repurchase Codes do not have the force of law and are only standards of commercial conduct considered acceptable for takeover and merger transactions and share repurchases in Hong Kong as established by the Securities and Futures Commission and the securities and futures industry in Hong Kong.

We have appointed our representative office, located at 515 Madison Avenue, Suite 27 West, New York, NY 10022, USA, as our agent to receive service of process with respect to any action brought against us in certain courts in New York under the United States federal and New York State s securities laws. However, as the PRC does not have treaties providing for the reciprocal recognition and enforcement of judgments of courts within the United States, the United Kingdom, Japan or most other the Organization for Economic Cooperation and Development countries, administrative actions brought by regulatory authorities, such as the Commission, and other actions which result in foreign court judgments, could (assuming such actions are not required by PRC law and the articles of association to be arbitrated) only be enforced in the PRC on a reciprocal basis or according to relevant international treaty to which China is a party if such judgments or rulings do not violate the basic principles of the law of the PRC or the sovereignty, security and public interest of the society of the PRC, as determined by a People s Court of the PRC which has the jurisdiction for recognition and enforcement of judgments. We have been advised by our PRC counsel, Haiwen & Partners, that there is certain doubt as to the enforceability in the PRC of actions to enforce judgments of United States courts arising out of or based on the ownership of H shares or ADSs, including judgments arising out of or based on the civil liability provisions of United States federal or state securities laws.

Restrictions on Transferability and the Share Register

As provided in the articles of associations we may refuse to register a transfer of H shares unless:

- any relevant transfer fee is paid;
- the instrument of transfer is only related to H shares listed in Hong Kong;
- the instrument of transfer is accompanied by the share certificates to which it relates, or such other evidence is given as may be reasonably necessary to show the right of the transferor to make the transfer;
- the stamp duty which is chargeable on the instrument of transfer has already been paid;
- if it is intended that the shares be transferred to joint owners, the maximum number of joint owners shall not be more than four (4); and
- the Company does not have any lien on the relevant shares.

We are required to keep a register of our shareholders which shall be comprised of various parts, including one part which is to be maintained in Hong Kong in relation to H shares to be listed on the Hong Kong Stock Exchange. Shareholders have the right to inspect and, for a nominal charge, to copy the share register. No transfers of ordinary shares shall be recorded in our share register within 30 days prior to the date of a shareholders general meeting or within 5 days prior to the record date established for the purpose of distributing a dividend.

We have appointed HKSCC Registrars Limited to act as the registrar of our H shares. This registrar maintains our register of holders of H shares at our offices in Hong Kong and enters transfers of shares in such register upon the presentation of the documents described above.

C. MATERIAL CONTRACTS

We have not entered into any material contracts other than in the ordinary course of business and other than those described under Item 4. Information on the Company, Item 7. Major Shareholders and Related Party Transactions or elsewhere in this Form 20-F.

D. EXCHANGE CONTROLS

The existing foreign exchange regulations have significantly reduced government foreign exchange controls for transactions under the current account, including trade and service related foreign exchange transactions and payment of dividends. We may undertake current account foreign exchange transactions without prior approval from the State Administration of Foreign Exchange by producing commercial documents evidencing such transactions, provided that they are processed through Chinese banks licensed to engage in foreign exchange transactions. The PRC government has stated publicly that it intends to make the Renminbi freely convertible in the future. However, we cannot predict whether the PRC government will continue its existing foreign exchange policy and when the PRC government will allow free conversion of Renminbi to foreign currency.

Foreign exchange transactions under the capital account, including principal payments in respect of foreign currency-denominated obligations, continue to be subject to significant foreign exchange controls and require the approval of the State Administration of Foreign Exchange. These limitations could affect our ability to obtain foreign exchange through debt or equity financing, or to obtain foreign exchange for capital expenditures.

The exchange rate of the Renminbi against the US dollar and other foreign currencies fluctuates and is affected by, among other things, the changes in the PRC s and international political and economic conditions. The PRC government has been gradually promoting the reform of exchange rate regime and enhance the flexibility of Renminbi exchange rate. On August 11, 2015, the PBOC decided to further improve the mechanism of RMB s central parity rate against the US dollar. Any fluctuation of exchange rate of the Renminbi against US dollars and Hong Kong dollars may have an effect on our revenues and financial condition, and the value of, and any dividends payable on, our ADSs in foreign currency terms. We cannot assure you that the fluctuation of exchange rate of the Renminbi against US dollars or other foreign currencies would not have a material and adverse effect on our operation and financial condition in the future. Information relating to the exchange risk, exchange rate and hedging activities is presented in Item 11. Qualitative and Quantitative Disclosures about Market risk Foreign Exchange Rate Risk.

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E. TAXATION

PRC Taxation

The following discussion addresses the principal PRC tax consequences of investing in the H shares or ADSs.

Taxation of Dividends

Individual Investors

According to the PRC Individual Income Tax Law, as amended, dividends paid by Chinese companies are ordinarily subject to a Chinese withholding tax levied at a flat rate of 20%. For a foreign individual who has no domicile and does not stay in the territory of China or who has no domicile but has stayed in the territory of China for less than one year, the receipt of dividends from a company in China is normally subject to a withholding tax of 20% unless reduced or exempted by an applicable tax treaties.

Foreign Enterprises

In accordance with the new Enterprise Income Tax Law and its implementation rules that became effective on January 1, 2008 and amended on February 24, 2017 and December 29, 2018, dividends derived from the revenues accumulated from January 1, 2008 and are paid to non-resident enterprises, which are established under the laws of non-PRC jurisdictions and have no establishment or place of business in China or whose dividends from China do not relate to their establishment or place of business in China, are generally subject to a PRC withholding tax levied at a rate of 10% unless exempted or reduced pursuant to an applicable double-taxation treaty or other exemptions. Dividends paid by PRC companies to resident enterprises, including enterprises established under the laws of non-PRC jurisdictions but whose de facto management body is located in the PRC, are not subject to any PRC withholding tax, unless the investment income are derived from the publicly traded shares which have been held continuously by the resident enterprises for less than twelve months. Dividends, bonuses and other return based on equity investment that a non-resident enterprise with establishment or place of business in China receives from a resident enterprise and that have actual connection with such establishment or place of business are also exempted from any PRC withholding tax, except for investment income derived from the publicly traded shares which have been held continuously by the resident enterprises for less than 12 months. Chinese resident enterprises are required to withhold PRC enterprise income tax at the rate of 10% on dividends paid for 2009 and later years earnings payable to their respective H Shares holders that are non-resident enterprises, except for those holders whose dividend income is not subject to PRC enterprise income tax pursuant to PRC governmental approval.

Tax Treaties

Holders resident in countries which have entered into avoidance of double taxation treaties or arrangements with the PRC may be entitled to a reduction or exemption of the withholding tax imposed on the payment of dividends.

Under a tax treaty between United States and China, China may tax dividends paid by Sinopec Corp. to eligible US Holders up to a maximum of 10% of the gross amount of such dividend. Under the tax treaty, an eligible US Holder is a person who, by reason of domicile, residence, place of head office, place of incorporation or any other criterion of similar nature is liable to tax in the United States, subject to a detailed treaty shopping provision.

Taxation of Capital Gains

In accordance with the new Enterprise Income Tax Law effective from January 1, 2008 and amended on January 8, 2011, February 24, 2017 and December 29, 2018, and its implementation rules, capital gains realized by foreign enterprises which are non-resident enterprises in China upon the sale of overseas-listed shares are generally subject to a PRC withholding tax levied at a rate of 10%, unless exempted or reduced pursuant to an applicable double-taxation treaty or other exemptions. The capital gains realized by resident enterprises, including enterprises established under the laws of non-PRC jurisdictions but whose de facto management body is located in the PRC, upon the sales of overseas-listed shares are subject to the PRC enterprise income tax.

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PRC Stamp Tax Considerations

Under the Provisional Regulations of The People s Republic of China Concerning Stamp Tax, which was effective on October 1, 1988 and amended in January 2011, PRC stamp tax should not be imposed on the transfer of shares of H Shares or ADSs of PRC publicly traded companies.

United States Federal Income Tax Considerations

The following is a summary of United States federal income tax considerations relating to the ownership and disposition of our H shares or ADSs by a US Holder (as defined below). This summary is based upon existing United States federal income tax law, which is subject to differing interpretations or change, possibly with retroactive effect. This summary does not discuss all aspects of United States federal income taxation which may be important to particular investors in light of their individual investment circumstances, such as certain investors subject to special tax rules including: financial institutions, regulated investment companies, real estate investment trusts, broker-dealers, cooperatives, pension plans, insurance companies, traders in securities that elect mark-to-market treatment, partnerships and their partners, tax-exempt organizations (including private foundations), non-US Holders, holders who own (directly, indirectly, or constructively) 10% or more of our stock (by vote or value), investors that hold H shares or ADSs as part of a straddle, hedge, conversion, constructive sale, or other integrated transaction for United States federal income tax purposes, holders who acquired their H shares or ADSs pursuant to any employee share option or otherwise as compensation, investors required to accelerate the recognition of any item of gross income with respect to H shares or ADSs as a result of such income being recognized on an applicable financial statement, or US Holders that have a functional currency other than the United States dollar, all of whom may be subject to tax rules that differ significantly from those summarized below. In addition, this summary does not discuss any state, local, non-United States, alternative minimum tax, non-income tax (such as the U.S. federal estate and gift tax) or Medicare considerations. This summary assumes that our H shares or ADSs held by investors are capital assets (generally, property held for investment) under the United States Internal Revenue Code of 1986, as amended (Code). US Holders should consult their tax advisors regarding the United States federal, state, local, and non-United States income and other tax considerations relating to their ownership or disposition of our H shares or ADSs.

For purposes of this summary, a US Holder is a beneficial owner of H shares or ADSs that is, for United States federal income tax purposes:

- an individual who is a citizen or resident of the United States;

- a corporation created in or organized under the laws of, the United States or any State thereof or the District of Columbia;

- an estate the income of which is includible in gross income for United States federal income tax purposes regardless of its source; or

- a trust (a) the administration of which is subject to the primary supervision of a United States court and which has one or more United States persons who have the authority to control all substantial decisions of the trust or (b) a trust that has otherwise elected to be treated as a United States person under the Code.

If a partnership (including any entity treated as a partnership for United States federal income tax purposes) is a beneficial owner of H shares or ADSs, the tax treatment of a partner in such partnership will depend upon the status of the partner and the activities of the partnership. Partners in a partnership holding our H shares or ADSs should consult their tax advisors regarding the United States federal income tax considerations relating to the investment in our H shares or ADSs.

For United States federal income tax purposes, it is generally expected that US Holders of ADSs will be treated as the beneficial owners of the underlying H shares represented by the ADSs. The remainder of this discussion assumes that a holder of ADSs will be treated in this manner. Accordingly, deposits or withdrawals of H shares for ADSs will generally not be subject to United States federal income tax.

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Passive Foreign Investment Company Considerations

A non-United States corporation, such as our company, will be a passive foreign investment company (PFIC), for United States federal income tax purposes for any taxable year, if either (a) 75% or more of its gross income for such year consists of certain types of passive income or (b) 50% or more of its average quarterly assets as determined on the basis of fair market value during such year produce or are held for the production of passive income. For this purpose, cash and assets readily convertible into cash are categorized as passive assets and the Company s goodwill and other unbooked intangibles associated with active business activities may generally be classified as active assets. We will be treated as owning a proportionate share of the assets and earning a proportionate share of the income of any other corporation in which we own, directly or indirectly, 25% (by value) of the stock.

We do not believe that we were classified as a PFIC for the taxable year ended December 31, 2018 and we do not expect to be classified as a PFIC for the foreseeable future. The determination of whether we will be or become a PFIC will depend, in part, upon the composition of our income and our assets (which are subject to change from year to year) and the market price of our H shares or ADSs (of which we cannot control). Although we do not expect that our business plans will change in a manner that will affect our PFIC status, no assurance can be given in this regard. Because there are uncertainties in the application of the relevant rules and PFIC status is a fact-intensive determination made on an annual basis, no assurance can be given that we will not be classified as a PFIC for any taxable year.

The discussion below under Dividends and Sale or Other Disposition of H shares or ADSs assumes that we will not be classified as a PFIC for United States federal income tax purposes. See the discussion below under the heading Passive Foreign Investment Company Rules for a brief summary of the PFIC rules.

Dividends

The gross amount of any cash distributions (including the amount of any tax withheld) paid on our H shares or ADSs out of our current or accumulated earnings and profits, as determined under United States federal income tax principles, will be subject to tax as dividend income on the day actually or constructively received by a US Holder, in the case of H shares, or by the depositary bank, in the case of ADSs. Because we do not intend to determine our earnings and profits on the basis of United States federal income tax principles, any distribution paid will generally be reported as a dividend for United States federal income tax purposes. A non-corporate recipient of dividend income will generally be subject to tax on dividend income from a qualified foreign corporation at a reduced capital gains rate rather than the marginal tax rates generally applicable to ordinary income provided that the holding period requirement is met.

A non-U.S. corporation (other than a corporation that is classified as a PFIC for the taxable year in which the dividend is paid or the preceding taxable year) generally will be considered to be a qualified foreign corporation (i) if it is eligible for the benefits of a comprehensive tax treaty with the United States which the Secretary of Treasury of the United States determines is satisfactory for purposes of this provision and which includes an exchange of information program or (ii) with respect to any dividend it pays on stock which is readily tradable on an established securities market in the United States. There is currently a tax treaty in effect between the United States and the People s Republic of China (U.S.-PRC Treaty) which the Secretary of Treasury of the United States determined is satisfactory for these purposes and we believe that we are eligible for the benefits of such treaty. Additionally, our ADSs trade on the New York Stock Exchange, an established securities market in the United States. Although we presently believe that we are a qualified foreign corporation for purposes of the reduced tax rate, no assurance can be given that we will continue to be treated as a qualified foreign corporation in the future. US Holders should consult their tax advisors regarding the availability of the reduced tax rate on dividends under their particular circumstances. Dividends received on H shares or ADSs will not be eligible for the dividends received deduction allowed to corporations.

Dividends paid in non-United States currency will be includible in income in a United States dollar amount based on the exchange rate prevailing at the time of receipt of such dividends by the depositary, in the case of ADSs, or by the US Holder, in the case of H shares held directly by such US Holder, regardless of whether the non-United States currency is actually converted into United States dollars at that time. Gain or loss, if any, recognized on a subsequent sale, conversion or other disposition of the non-United States currency will generally be United States source income or loss.

Dividends received on H shares or ADSs will be treated, for United States foreign tax credit purposes, as foreign source income. A US Holder may be eligible, subject to a number of complex limitations, to claim a foreign tax credit in respect of any non-United States withholding taxes imposed on dividends received on H shares or ADSs. US Holders who do not elect to claim a foreign tax credit for foreign income tax withheld may instead claim a deduction, for United States federal income tax purposes, in respect of such withholdings, but only for a year in which the US Holder elects to do so for all creditable foreign income taxes. US Holders should consult their tax advisors regarding the availability of the foreign tax credit under their particular circumstances.

Sale or Other Disposition of H shares or ADSs

A US Holder will recognize capital gain or loss upon the sale or other disposition of H shares or ADSs in an amount equal to the difference between the amount realized upon the disposition and the US Holder s adjusted tax basis in such H shares or ADSs. Any capital gain or loss will be long-term if the H shares or ADSs have been held for more than one year and will generally be United States source gain or loss for United States foreign tax credit purposes. If any PRC tax were to be imposed on any gain from the disposition of H shares or ADSs, however, a US Holder that is eligible for the benefits of the U.S.- PRC Treaty may elect to treat the gain as non-United States source gain or loss. The deductibility of a capital loss may be subject to limitations. The rules governing the foreign tax credit are complex and their outcome depends in large part on the US Holder s individual facts and circumstances. Accordingly, US Holders should consult their tax advisors regarding the availability of the foreign tax credit under their particular circumstances.

US Holders that receive currency other than the United States dollar upon the sale or other disposition of H shares will realize an amount equal to the United States dollar value of the non-United States currency on the date of such sale or other disposition, or if the shares are traded on an established securities market, in the case of cash basis and electing accrual basis taxpayers, the settlement date. US Holders will recognize currency gain or loss if the United States dollar value of the currency received on the settlement date differs from the amount realized. US Holders will have a tax basis in the currency received equal to the United States dollar amount at the spot rate on the settlement date. Generally, any gain or loss realized by US Holders on a subsequent conversion or disposition of such currency will be United States source ordinary income or loss.

Passive Foreign Investment Company Rules

If we were to be classified as a PFIC in any taxable year, a special tax regime will apply to both (a) any excess distribution by us to a US Holder (generally, the US Holder s ratable portion of distributions in any year which are greater than 125% of the average annual distribution received by such US Holder in the shorter of the three preceding years or the US Holder s holding period for our H shares or ADSs) and (b) any gain realized on the sale or other disposition of the H shares or ADSs. Under this regime, any excess distribution and realized gain will be treated as ordinary income and will be subject to tax as if (a) the excess distribution or gain had been realized ratably over the US Holder s holding period, (b) the amount deemed realized in each year had been subject to tax in each year of that holding period at the highest marginal rate for such year (other than income allocated to the current period or any taxable period before we became a PFIC, which would be subject to tax at the US Holder s regular ordinary income rate for the current year and would not be subject to the interest charge discussed below), and (c) the interest charge generally applicable to underpayments of tax had been imposed on the taxes deemed to have been payable in those years. In addition, dividends made to a US Holder will not qualify for the lower rates of taxation applicable to long-term capital gains discussed above under Dividends.

If a mark-to-market election is available and a US Holder validly makes such an election, notwithstanding the foregoing, such a holder generally will be required to take into account the difference, if any, between the fair market value and its adjusted tax basis in H shares or ADSs at the end of each taxable year as ordinary income or ordinary loss (to the extent of any net mark-to-market gain previously included in income). In addition, any gain from a sale or other disposition of H shares or ADSs will be treated as ordinary income, and any loss will be treated as ordinary loss (to the extent of any net mark-to-market gain previously included in income).

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Because a mark-to-market election cannot be made for any lower-tier PFICs that we may own, a US Holder may continue to be subject to the PFIC rules with respect to such US Holder s indirect interest in any investments held by us that are treated as an equity interest in a PFIC for United States federal income tax purposes.

We do not intend to provide information necessary for US Holders to make qualified electing fund elections which, if available, would result in tax treatment different from (and generally less adverse than) the general tax treatment for PFICs described above.

Each US Holder is urged to consult its tax advisor concerning the United States federal income tax consequences of holding and disposing H shares or ADSs if we are or become treated as a PFIC, including the possibility of making a mark-to-market election, the deemed sale and deemed dividend elections and the unavailability of the election to treat us as a qualified electing fund.

Withholding Tax and Information Reporting

Certain US Holders are required to report information relating to an interest in specified foreign financial assets, including shares issued by a non-United States corporation, for any year in which the aggregate value of all specified foreign financial assets exceeds US$50,000, subject to certain exceptions (including an exception for ordinary shares held in custodial accounts maintained with a United States financial institution). A US Holder who fails to timely furnish the required information may be subject to a penalty. In addition, information reporting generally will apply to dividends on and proceeds from the sale or other disposition of our H shares or ADSs. US withholding tax is generally inapplicable to dividends on or proceeds from the sale or other disposition of our H shares or ADSs (provided that various certification requirements have been met). US Holders are advised to consult with their tax advisors regarding the application of the United States information reporting and withholding rules.

F. DIVIDENDS AND PAYING AGENTS

Not applicable.

G. STATEMENT BY EXPERTS

Not applicable.

H. DOCUMENTS ON DISPLAY

This annual report contains exhibits and schedules. Any statement in this annual report about any of our contracts or other documents is not necessarily complete. If the contract or document is filed or incorporated by reference as an exhibit to this annual report, the contract or document is deemed to modify the description contained in this annual report. You must review the exhibits themselves for a complete description of the contracts or documents.

Copies of reports and other information, when so filed, may be inspected without charge and may be obtained at prescribed rates at the public reference facilities maintained by the SEC at Judiciary Plaza, 450 Fifth Street, Room 1024, NW, Washington, D.C. 20549; or at New York (address: 233 Broadway, New York, NY 10279) and Chicago (address: Citicorp Center, 500 West Madison Street, Suite 1400, Chicago, Illinois 60661). Copies of the above materials may also be obtained from the Public Information Department of SEC at 450 Fifth Street, NW, Washington DC 20549, charges as appropriate. You may also view the registration statement (including attachments and schedules) at the New York Stock Exchange at Wall Street, New York, NY 10005. The public may obtain information regarding the Washington, D.C. Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains a web site at www.sec.gov. As a foreign private issuer, we are exempt from the rules under the Exchange Act prescribing the furnishing and content of quarterly reports and proxy statements, and officers, directors and principal shareholders are exempt from the reporting and short-swing profit recovery provisions contained in Section 16 of the Exchange Act.

I. SUBSIDIARY INFORMATION

Not applicable.

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ITEM 11. QUALITATIVE AND QUANTITATIVE DISCLOSURES ABOUT MARKET RISK

Our primary market risk exposures are to fluctuations in oil and gas prices, exchange rates and interest rates. Please also refer to Note 38 to the consolidated financial statements included elsewhere in this annual report for a detailed discussion of other market risks that we have exposure to.

Commodity Price Risk

The Group engages in oil and gas operations and is exposed to commodity price risk related to price volatility of crude oil, refined oil products and chemical products. The fluctuations in prices of crude oil, refined oil products and chemical products could have significant impact on the Group. The Group uses derivative financial instruments, including commodity futures and swaps, to manage a portion of such risk.

At December 31, 2018, the Group had certain commodity contracts of crude oil, refined oil products and chemical products designated as qualified cash flow hedges and economic hedges. At December 31, 2018, the net fair value of such derivative hedging financial instruments is derivative financial assets of RMB 7,844 million (2017: RMB 515 million) recognized in other receivables and derivative financial liabilities of RMB 13,568 million (2017: RMB 2,624 million) recognized in other payables.

At December 31, 2018, it is estimated that a general increase/decrease of USD 10 per barrel in basic price of derivative financial instruments, with all other variables held constant, would impact the fair value of derivative financial instruments, which would decrease/increase the Group s profit for the year by approximately RMB 197 million (2017: decrease/increase RMB 4,049 million), and increase/decrease the Group s other comprehensive income by approximately RMB 6,850 million (2017: decrease/increase RMB 701 million). This sensitivity analysis has been determined assuming that the change in prices had occurred at the balance sheet date and the change was applied to the Group s derivative financial instruments at that date with exposure to commodity price risk. The analysis is performed on the same basis for 2017.

Foreign Exchange Rate Risk

The Renminbi is not a freely convertible currency. With the authorization from the PRC government, the PBOC announced that the PRC government reformed the exchange rate regime by moving into a managed floating exchange rate regime based on market supply and demand with reference to a basket of currencies on July 21, 2005. The PRC government has been gradually promoting the Renminbi exchange rate formation mechanism to enhance the flexibility of Renminbi exchange rate. On August 11, 2015, the PBOC decided to further improve the mechanism of RMB s central parity rate against the US dollar. Actions taken by the PRC government could cause future exchange rates to vary significantly from current or historical exchange rates. Fluctuations in exchange rates may adversely affect the value, translated or converted into US dollars or Hong Kong dollars, of our net assets, earnings and any declared dividends. We cannot give any assurance that any future movements in the exchange rate of the Renminbi against the US dollar and other foreign currencies will not adversely affect our results of operations and financial condition.

The following presents various market risk information regarding market-sensitive financial instruments that we held or issued as of December 31, 2017 and 2018. We conduct our business primarily in Renminbi, which is also our functional and reporting currency.

The following tables provide information regarding instruments that are sensitive to foreign exchange rates as of December 31, 2017 and 2018. For debt obligations, the table presents cash flows and related weighted average rates by expected maturity dates.

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	As of December 31, 2018							
	Expected Maturity Date							
	2019	2020	2021	2022	2023	Thereafter	Total carrying amount	Fair Value
	(RMB equivalent in millions, except interest rate)							
Assets								
Cash and cash equivalent								
In US Dollar	13,896						13,896	13,896
In HK Dollar	38						38	38
In Japanese Yen	20						20	20
In Euro	45						45	45
Others	80						80	80
Time deposits with financial institutions								
In US Dollar	25,658						25,658	25,658
Liabilities								
Debts in US Dollar								
Fixed rate	7,029	25	25	13	8,547	3,416	19,055	18,418
Average interest rate	2.90%	1.64%	1.69%	1.73%	0.99%	1.42%		
Variable rate	19,672						19,672	19,672
Average interest rate(1)	3.03%							
Debts in HK Dollar								
Fixed rate	1,419						1,419	1,419
Average interest rate	3.75%							
Variable rate	22						22	22
Average interest rate(1)	1.83%							
Debts in Euro								
Fixed rate								
Average interest rate								
Variable rate	22						22	22
Average interest rate(1)	0.80%							

(1) The average interest rates for variable rate debts are calculated based on the rates reported as of December 31, 2018.

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	As of December 31, 2017							
	Expected Maturity Date						Total carrying amount	Fair Value
	2018	2019	2020	2021	2022	Thereafter		
	(RMB equivalent in millions, except interest rate)							
Assets								
Cash and cash equivalent								
In US Dollar	11,260						11,260	11,260
In HK Dollar	87						87	87
In Japanese Yen	13						13	13
In Euro	136						136	136
Others	109						109	109
Time deposits with financial institutions								
In US Dollar	28,557						28,557	28,557
Liabilities								
Debts in US Dollar								
Fixed rate	6,775	54	54	39	13	11,379	18,314	18,333
Average interest rate	0.63%	3.03%	3.03%	2.56%	1.37%	1.11%		
Variable rate	26,868						26,868	26,868
Average interest rate(1)	1.90%							
Debts in HK Dollar								
Fixed rate	5						5	5
Average interest rate	1.76%							
Variable rate	1,898						1,898	1,898
Average interest rate(1)	2.05%							
Debts in Singapore Dollar								
Fixed rate								
Average interest rate								
Variable rate	20						20	20
Average interest rate(1)	1.57%							

(1) The average interest rates for variable rate debts are calculated based on the rates reported as of December 31, 2017.

Interest Rate Risk

We are exposed to interest rate risk resulting from fluctuations in interest rates on our short-term and long-term debts. Upward fluctuations in interest rates increase the cost of new debt and the interest cost of outstanding floating rate borrowings.

Our debts consist of fixed and variable rate debt obligations with original maturities ranging from one to thirty years. Fluctuations in interest rates can lead to significant fluctuations in the fair values of our debt obligations.

The following tables present principal cash flows and related weighted average interest rates by expected maturity dates of our interest rate sensitive financial instruments as of December 31, 2017 and 2018.

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	As of December 31, 2018							
	Expected Maturity Date							
	2019	2020	2021	2022	2023	There-after	Total carrying amount(2)	Fair value
	(RMB equivalent in millions, except interest rate)							
Assets								
Cash and cash equivalent								
In RMB	97,843						97,843	97,843
In US Dollar	13,896						13,896	13,896
In HK Dollar	38						38	38
In Japanese Yen	20						20	20
In Euro	45						45	45
Others	80						80	80
Time deposits with financial institutions								
In RMB	18,235						18,235	18,235
In US Dollar	25,658						25,658	25,658
Liabilities								
Debts in RMB								
Fixed rate	14,670	50,790	1,420	7,517	2,072	1,146	77,615	77,328
Average interest rate	3.45%	0.67%	2.46%	2.01%	1.16%	1.92%		
Variable rate	18,292	2,189	3,942	2,250	1,759	8,417	36,849	36,849
Average interest rate(1)	3.97%	3.70%	3.27%	3.78%	4.09%	4.50%		
Debts in US Dollar								
Fixed rate	7,029	25	25	13	8,547	3,416	19,055	18,418
Average interest rate	2.90%	1.64%	1.69%	1.73%	0.99%	1.42%		
Variable rate	19,672						19,672	19,672
Average interest rate(1)	3.03%							
Debts in HK Dollar								
Fixed rate	1,419						1,419	1,419
Average interest rate	3.75%							
Variable rate	22						22	22
Average interest rate(1)	1.83%							
Debts in Euro								
Fixed rate								
Average interest rate								
Variable rate	22						22	22
Average interest rate(1)	0.80%							

(1) The average interest rates for variable rate debts are calculated based on the rates reported as of December 31, 2018.

(2) Carrying amounts are used for loans from Sinopec Group Company and its affiliates as it is not practicable to estimate their fair values because the cost of obtaining discount and borrowing rates for comparable borrowings would be excessive.

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	As of December 31, 2017							
	Expected Maturity Date						Total carrying amount(2)	Fair value
	2018	2019	2020	2021	2022	There-after		
	(RMB equivalent in millions, except interest rate)							
Assets								
Cash and cash equivalent								
In RMB	101,613						101,613	101,613
In US Dollar	11,260						11,260	11,260
In HK Dollar	87						87	87
In Japanese Yen	13						13	13
In Euro	136						136	136
Others	109						109	109
Time deposits with financial institutions								
In RMB	23,229						23,229	23,229
In US Dollar	28,557						28,557	28,557
Liabilities								
Debts in RMB								
Fixed rate	31,841	5,406	15,230	40,621	7,467	895	101,460	100,233
Average interest rate	2.93%	1.70%	1.96%	0.47%	1.99%	1.83%		
Variable rate	13,240	11,363	2,498	1,171	1,146	1,790	31,208	31,208
Average interest rate(1)	4.03%	3.94%	3.68%	3.00%	2.96%	3.96%		
Debts in US Dollar								
Fixed rate	6,775	54	54	39	13	11,379	18,314	18,333
Average interest rate	0.63%	3.03%	3.03%	2.56%	1.37%	1.11%		
Variable rate	26,868						26,868	26,868
Average interest rate(1)	1.90%							
Debts in HK Dollar								
Fixed rate	5						5	5
Average interest rate	1.76%							
Variable rate	1,898						1,898	1,898
Average interest rate(1)	2.05%							
Debts in Singapore Dollar								
Fixed rate								
Average interest rate								
Variable rate	20						20	20
Average interest rate(1)	1.57%							

(1) The average interest rates for variable rate debts are calculated based on the rates reported as of December 31, 2017.

(2) Carrying amounts are used for loans from Sinopec Group Company and its affiliates as it is not practicable to estimate their fair values because the cost of obtaining discount and borrowing rates for comparable borrowings would be excessive.

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ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

A. DEBT SECURITIES

Not applicable.

B. WARRANTS AND RIGHTS

Not applicable.

C. OTHER SECURITIES

Not applicable.

D. AMERICAN DEPOSITARY SHARES

Depositary Fees and Charges

Under the terms of the Deposit Agreement for China Petroleum & Chemical Corporation s American Depositary Shares (ADSs), an ADS holder may have to pay the following services fees to the Depositary:

Services	Fees
Issuance of ADSs	US$5.00 (or less) per 100 ADSs (or portion of 100 ADSs) issued
Cancellation of ADSs	US$5.00 (or less) per 100 ADSs (or portion of 100 ADSs) canceled
Distribution of cash dividends or other cash distributions	US$2.00 (or less) per 100 ADSs (or portion of 100 ADSs) held
Distribution of ADSs pursuant to stock dividends, free stock distributions or exercises of rights	US$5.00 (or less) per 100 ADSs (or portion of 100 ADSs) held
Distribution of securities other than ADSs or rights to purchase additional ADSs	US$5.00 (or less) per 100 ADSs (or portion of 100 ADSs) held

An ADS holder will also be responsible to pay certain fees and expenses incurred by the Depositary and certain taxes and governmental charges such as:

- Taxes (including relevant interests and fines) and other governmental charges;
- such registration fees as may from time to time be in effect, for the registration of deposited securities in the register of members, or for the registration of transfers of deposited securities to the name of the Depositary or its nominee or the Custodian or its nominee on the making of deposits or withdrawals;
- such cable, telex and facsimile transmission expenses as are expressly provided in the Deposit Agreement;
- such expenses as are incurred by the Depositary in the conversion of foreign currency;
- such expenses as are incurred with the compliance with the foreign currency control, ADSs and other deposited securities related laws, regulations and rules; and
- any other charge payable by the Depositary, any of the Depositary s agents, including the Custodian, Depositary, or the agents of the Custodian or Depositary, in connection with the servicing of deposited securities.

Depositary Payments for the Year 2018

In 2018, Citibank, N.A., the Depositary for our ADR program, provided reimbursement net of applicable withholding taxes for our expenses related to the listing and investor relations activities as follows:

- reimbursement of application fees: US$ 83,763.38
- reimbursement of data infrastructure fees: US$ 3,678.32
- reimbursement of proxy procedure fees: US$ 122,761.26
- reimbursement of investor relations expenses (including expenses related to non-deal road show, investor meeting and investor relations agency): US$ 206,299.34
- the accounting committee and accounting standard committee of public company: US$ 34,914.21
- Total: US$ 451,416.51

ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

None.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

A. MATERIAL MODIFICATIONS TO THE RIGHTS TO SECURITIES HOLDERS

None.

B. USE OF PROCEEDS

Not applicable.

ITEM 15. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure the information required to be disclosed in reports filed by us under the U.S. Securities Exchange Act of 1934 (Exchange Act), as amended, is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission s rules and forms and that such information is accumulated and communicated to our management, including our principal executive officer and principal officer, as appropriate, to allow for timely decisions regarding required disclosure. Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of December 31, 2018 (Evaluation Date), the end of the fiscal year covered by this annual report. Based on this evaluation, our principal executive officer and principal financial officer have concluded that, as of the Evaluation Date, our disclosure controls and procedures were effective.

Management s Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) of the Securities Exchange Act of 1934). The Company s internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board.

Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management assessed the effectiveness of our internal control over financial reporting based upon the criteria established in *Internal Control Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission as of December 31, 2018. Based on that evaluation, our management has concluded that our internal control over financial reporting was effective as of December 31, 2018 based on these criteria.

PricewaterhouseCoopers Zhong Tian LLP, an independent registered public accounting firm, has audited the consolidated financial statements included in this annual report on Form 20-F and, as part of the audit, has issued a report, included herein, on the effectiveness of our internal control over financial reporting.

Changes in Internal Control over Financial Reporting

During the year ended December 31, 2018, there have been no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 16. RESERVED

[Reserved]

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

The board of directors has determined that Mr. Ng, Kar Ling Johnny qualifies as an audit committee financial expert in accordance with the terms of Item 16.A of Form 20-F. Mr. Ng was appointed as an independent non-executive director and a manager of the audit committee of the seventh board of our company in 2018. For Mr. Wu s biographical information, see Item 6 Directors, Senior Management and Employees A. Directors, Supervisors and Senior Management.

ITEM 16B. CODE OF ETHICS

Our controlling shareholder, Sinopec Group Company, has adopted a Staff Code to provide disciplines and requirements for its staff s conducts, including legal and ethical matters as well as the sensitivities involved in reporting illegal and unethical matters. The Staff Code covers such areas as HSE, conflict of interests, anti-corruption, protection and proper use of our assets and properties as well as reporting requirements. The Staff Code also applies to all directors, officers and employees of each subsidiary of Sinopec Group Company, including us. We have provided all our directors and senior officers with a copy of the Staff Code and require them to comply with it in order to ensure our operations are proper and lawful. We have posted the Staff Code on our website, http://www.sinopec.com/listco/en/Resource/Pdf/ygsz2014b.pdf.

ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table sets forth the aggregate audit fees, audit-related fees, tax fees of our principal accountants and all other fees billed for products and services provided by our principal accountants other than the audit fees, audit-related fees and tax fees for each of the fiscal years 2017 and 2018.

	Audit Fees	Audit-Related Fees	Tax Fees	Other Fees
2017	RMB 71.99 million			RMB 4.94 million
2018	RMB 93.52 million			RMB 8.97 million

We are only allowed to engage our principal accountants to render audit or non-audit services, after the engagement has been approved by our audit committee.

ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

Not applicable.

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ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

None.

ITEM 16F. CHANGE IN REGISTRANT S CERTIFYING ACCOUNTANT

None.

ITEM 16G. COMPARISON OF NEW YORK STOCK EXCHANGE CORPORATE GOVERNANCE RULES AND CHINA CORPORATE GOVERNANCE RULES FOR LISTED COMPANIES

Under the amended Corporate Governance Rules of the NYSE, foreign issuers (including us) listed on the NYSE are required to disclose a summary of the significant differences between their domestic corporate governance rules and NYSE corporate governance rules that would apply to a U.S. domestic issuer. A summary of such differences is listed below:

NYSE corporate governance rules	Corporate governance rules applicable to the domestically listed companies in China and the Company s governance practices
Corporate governance guidelines Listed companies must adopt and disclose corporate governance guidelines, involving director responsibilities, director compensation, director continuing education, annual performance evaluation of the board of directors, etc.	PRC corporate governance rules promulgated by China Securities Regulatory Commission and revised in September, 2018 prescribe detailed guidelines on directors of the listed companies, including director selection, duties and responsibilities of directors, director performance evaluation, the structure of the board of directors and rules of procedure for the board of directors, etc. The Company has complied with the above mentioned laws or rules.
Director Independence A listed company must have a majority of independent directors on its board of directors. No director qualifies as independent unless the board of directors affirmatively determines that the director has no material relationship with the listed company (either directly or as a partner, shareholder or officer of an organization that has a relationship with the Company). In addition, a director must meet certain standards to be deemed independent. For example, a director is not independent if the director is, or has been within the last three years, an employee of the listed company, or an immediate family member is, or has been within the last three years, an executive officer of the listed company, or if the director has received, or has an immediate family member who has received, during any twelve-month	It is required in China that any listed company must establish an independent director system and set forth specific requirements for the qualification of independent directors. For example, an independent director shall not hold any position other than board committee member of the listed company, shall not be related to the listed company and its key shareholders in a way which may hinder his/her independent and objective judgement, and shall not be influenced by the main shareholders or the controlling persons of the listed company, or by any other entities or persons with whom the listed company has a significant relationship.

period within the last three years, more than US$120,000 in direct compensation from the listed company, other than director and committee fees and pension or other forms of deferred compensation for prior service (provided such compensation is not contingent in any way on continued service).	The Company has complied with the relevant Chinese corporate governance rules and has implemented internal rules governing the independence and responsibilities of independent directors. The Company determines the independence of independent directors every year.
To empower non-management directors to serve as a more effective check on management, the non-management directors of each listed company must meet at regularly scheduled executive sessions without management.	No similar requirements.

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NYSE corporate governance rules	Corporate governance rules applicable to the domestically listed companies in China and the Company s governance practices
Nominating/Corporate Governance Committee	
Listed companies must have a nominating/corporate governance committee composed entirely of independent directors.	It is stipulated in China that the board of directors of a listed company may, through the resolution of the shareholders meeting, establish a nominating committee composed entirely of directors, of which the independent directors shall be the majority and the convener.
	Up to now, the Company has set up a nominating committee, and made charters regarding its responsibilities and procedure.
The nominating/corporate governance committee must have a written charter that addresses the committee s purposes and responsibilities which, at minimum, must be to: search for eligible people for the board of directors, select and nominate directors for the next session of the shareholders annual meeting, study and propose corporate governance guidelines, supervise the evaluation of the board of directors and management, and evaluate the performance of the committee every year.	Relevant responsibilities of the nominating/corporate governance committee are similar to those stipulated by the NYSE rules, but the main responsibilities do not include the research and recommendation of corporate governance guidelines, the supervision of the evaluation of the board of directors and management, or the annual evaluation of the committee.
Compensation Committee	
Listed companies must have a compensation committee composed entirely of independent directors.	It is stipulated in China that the board of directors of a listed company may, subject to shareholders resolution, have a compensation and assessment committee composed entirely of directors, of whom the independent directors are the majority and act as the convener.
The compensation committee must have a written charter that addresses, at least, the following purposes and responsibilities:	It is stipulated in China that the responsibilities of the compensation and assessment committee are:
(1) review and approve the corporate goals associated with CEO s compensation, evaluate the performance of the CEO in fulfilling these goals, and, either as a committee or together with the other independent directors (as directed by the board), based on such evaluation, determine and approve the CEO s compensation level;	(1) to review evaluation standards on the performance of directors and the senior management, make assessment and submit suggestion to the board of directors;
	(2) to review compensation policies on the directors and the senior management.
(2) make recommendations to the board with respect to non-CEO executive officer compensation, and incentive-compensation and equity-based plans that are subject to board approval;	But the committee is not required to produce a report on the executive compensation or make an annual performance evaluation of the committee.
(3) produce a committee report on executive compensation as required by the SEC to be included in the annual proxy statement or annual report filed with the SEC.	The board of directors of the Company has established a compensation and performance evaluation committee composed mainly of independent directors who act as the convener, and the committee has established a written charter complying with the domestic corporate governance rules.

NYSE corporate governance rules	**Corporate governance rules applicable to the domestically listed companies in China and the Company s governance practices**
The charter must also include the requirement for an annual performance evaluation of the compensation committee.	
The compensation committee may, in its sole discretion, retain or consult a compensation consultant, independent legal counsel or other advisor. The compensation committee shall be directly responsible for the appointment, compensation and oversight of the work of such advisor. A listed company must provide for appropriate funding for payment of reasonable compensation to such advisor. The compensation committee may select such advisor to the compensation committee only after taking into consideration all factors relevant to that person s independence from management.	
Audit Committee Listed companies must have an audit committee that satisfies the requirements of Rule 10A-3 of Securities Exchange Act of 1934 (Exchange Act). It must have a minimum of three members, and all audit committee members must satisfy the requirements for independence set forth in Section 303A.02 of NYSE Corporate Governance Rules as well as the requirements of Rule 10A-3(b)(1) of the Exchange Act.	It is stipulated in China that the board of directors of a listed company shall, subject to shareholders resolution, establish an audit committee composed entirely of competent directors with expertise and business experience, of which the independent directors are the majority and act as the convener, and the convener of the audit committee shall be an accounting professional.
The audit committee must have a written charter that specifies the purpose of the audit committee is, at minimum, to assist the board oversight of the integrity of financial statements, the Company s compliance with legal and regulatory requirements, qualifications and independence of independent auditors and the performance of the listed company s internal audit function and independent auditors.	The responsibilities of the audit committee are similar to those stipulated by the NYSE rules. The board of directors shall evaluate the independence and performance of members of the audit committee periodically, and may replace any member who is no longer suitable for the position. The Company shall disclose the performance of the audit committee in its annual report, including meetings convened by the audit committee.
In addition, the written charter must require the audit committee to prepare an audit committee report as required by the SEC to be included in the listed company s annual proxy statement as well as an annual performance evaluation of the audit committee.	The Board of Directors of the Company has established an audit committee that satisfies relevant domestic and overseas requirements and the audit committee has a written charter.
The written charter must also specify the duties and responsibilities of the audit committee, which, at a minimum, must include those set out in Rule 10A-3(b)(2), (3), (4) and (5) of the Exchange Act, as well as other duties and responsibilities such as to obtain and review a report by the independent auditor at least annually, meet to review and discuss the listed company s annual audited financial statements and quarterly financial statements with management and independent auditor.	

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NYSE corporate governance rules	Corporate governance rules applicable to the domestically listed companies in China and the Company s governance practices
The audit committee must have a written charter that specifies the purpose of the audit committee is, at minimum, to assist the board oversight of the integrity of financial statements, the Company s compliance with legal and regulatory requirements, qualifications and independence of independent auditors and the performance of the listed company s internal audit function and independent auditors.	The responsibilities of the audit committee are similar to those stipulated by the NYSE rules. The board of directors shall evaluate the independence and performance of members of the audit committee periodically, and may replace any member who is no longer suitable for the position. The Company shall disclose the performance of the audit committee in its annual report, including meetings convened by the audit committee.
In addition, the written charter must require the audit committee to prepare an audit committee report as required by the SEC to be included in the listed company s annual proxy statement as well as an annual performance evaluation of the audit committee.	The Board of Directors of the Company has established an audit committee that satisfies relevant domestic and overseas requirements and the audit committee has a written charter.
The written charter must also specify the duties and responsibilities of the audit committee, which, at a minimum, must include those set out in Rule 10A-3(b)(2), (3), (4) and (5) of the Exchange Act, as well as other duties and responsibilities such as to obtain and review a report by the independent auditor at least annually, meet to review and discuss the listed company s annual audited financial statements and quarterly financial statements with management and independent auditor.	
Each listed company must have an internal audit department.	China has a similar regulatory provision, and the Company has an internal audit department.
Shareholder approval of equity compensation plan	
Shareholders must be given the opportunity to vote on all equity-compensation plans and material revisions thereto, except for, among others, plans that are made available to shareholders generally, such as typical dividend reinvestment plan and certain awards and plans in the context of mergers and acquisitions.	It is stipulated in China that the compensation of the directors and supervisors shall be approved by the shareholders meeting. The compensation plan of executive officers shall be approved by the board of directors, illustrate to the shareholders meeting and fully disclosed to the public.
	The Company has complied with the above mentioned laws or rules.
Code of ethics for directors, officers and employees	
Listed companies must adopt and disclose a code of business conduct and ethics for directors, officers and employees, and promptly disclose any waivers of the code for directors or executive officers. Each code of business conduct and ethics must require that any waiver of the code for executive officers or directors may be made only by the board or a board committee.	China does not have such requirement for a code for ethics. But our controlling shareholder, Sinopec Group Company, adopted a Staff Code in 2014 to provide disciplines and requirements for its staff s conducts, including legal and ethical matters as well as the sensitivities involved in reporting illegal and unethical matters. The Staff Code covers such areas as HSE, conflict of interests, anti-corruption, protection and proper use of our assets and properties as well as reporting requirements. The Staff Code also applies to all directors, officers and employees of each subsidiary of Sinopec Group Company, including us. In addition, the directors and officers must perform their legal responsibilities in accordance with the Company Law of PRC, relative requirements of CSRS and Mandatory Provisions to the Charter of Companies Listed Overseas. Meanwhile, the Company establishes The Model Code of Securities Transactions by Corporate Employees and The Rules of The Company s Shares Transactions by Corporate Directors, Superiors and Senior Managements to regulate the above mentioned people

when transacting related securities.

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NYSE corporate governance rules	Corporate governance rules applicable to the domestically listed companies in China and the Company s governance practices
Each listed company CEO must certify to the NYSE each year that he or she is not aware of any violation by the listed company of NYSE corporate governance listing standards and he or she must promptly notify the NYSE in writing of any non-compliance with any applicable provisions of Section 303A.	No similar requirements.
Board of Supervisors	
Listed companies are not required to have a board of supervisors.	PRC corporate governance rules promulgated by China Securities Regulatory Commission prescribe that the board of supervisors of listed companies is responsible for supervising the compliance of the Company s financial affairs and the directors, executive officers of the Company, and safeguarding the legitimate rights and interests of the Company and the shareholders. The rules also provided detailed requirements in respect of the selection of supervisors of listed companies, the duties and composition of the board of supervisors and its meeting procedures, etc. The Company has complied with the above rules.

ITEM 16H. MINE SAFETY DISCLOSURE

Not applicable.

ITEM 17. FINANCIAL STATEMENTS

Not applicable.

ITEM 18. FINANCIAL STATEMENTS

See consolidated financial statements included in this annual report following Item 19.

ITEM 19. EXHIBITS

1* Articles of Association of the Registrant, amended and adopted by the shareholders meeting on May 15, 2018.

4.1	Forms of Director Service Contracts adopted by the Company on May 11, 2012 (English translation), incorporated by reference to Exhibit 4.1 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 11, 2013 (File Number: 001-15138).
4.2	Forms of Supervisor Service Contracts adopted by the Company on May 11, 2012 (English translation), incorporated by reference to Exhibit 4.2 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 11, 2013 (File Number: 001-15138).

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4.3	Agreement for Mutual Provision of Products and Ancillary Services between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 (including English translation), incorporated by reference to Exhibit 10.3 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
4.4	Agreement for Provision of Cultural, Educational, Hygiene and Community Services between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 (including English translation), incorporated by reference to Exhibit 10.4 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
4.5	Trademark License Agreement between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 (including English translation), incorporated by reference to Exhibit 10.6 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
4.6	Patents and Proprietary Technology License Contract between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 (including English translation), incorporated by reference to Exhibit 10.7 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
4.7	Computer Software License Contract between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 (including English translation), incorporated by reference to Exhibit 10.8 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
4.8	Land Use Rights Leasing Contract between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 (including English translation), incorporated by reference to Exhibit 10.10 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
4.9	Property Leasing Contract between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 (including English translation), incorporated by reference to Exhibit 10.11 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
4.10	Loan Transfer and Adjustment Contract between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 16, 2000 (including English translation), incorporated by reference to Exhibit 10.18 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
4.11	Agreement on Adjustment to Related Party Transactions between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 11, 2001 (English translation), incorporated by reference to Exhibit 4.15 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 13, 2007 (File Number: 001-15138).
4.12	Land Use Right Leasing Agreement between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 22, 2003 (English translation), incorporated by reference to Exhibit 4.16 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 13, 2007 (File Number: 001-15138).
4.13	2004 Agreement on Adjustment to Related Party Transactions between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated October 31, 2004 (English translation), incorporated by reference to Exhibit 4.17 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 13, 2007 (File Number: 001-15138).

4.14	Memorandum on Adjustment of Rent of Land Use Rights between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated March 31, 2006 (English translation), incorporated by reference to Exhibit 4.18 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 13, 2007 (File Number: 001-15138).
4.14.1	Memorandum on Adjustment of Rent of Land Use Rights between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 22, 2008 (English Translation), incorporated by reference to Exhibit 4.20 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on May 20, 2009 (File Number: 001-15138).
4.14.2	Land Use Rights Leasing Agreement Third Amendment Memo between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 24, 2012 (English Translation), incorporated by reference to Exhibit 4.20.1 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 11, 2013 (File Number: 001-15138).
4.15	Supplemental Agreement on Related Party Transactions between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated March 31, 2006 (English translation), incorporated by reference to Exhibit 4.19 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 13, 2007 (File Number: 001-15138).
4.15.1	Continuing Connected Transactions Second Supplemental Agreement between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 21, 2009 (English translation), incorporated by reference to Exhibit 4.21 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 30, 2010 (File Number: 001-15138).
4.15.2	Continuing Connected Transactions Third Supplemental Agreement between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 24, 2012 (English translation), incorporated by reference to Exhibit 4.19.2 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 11, 2013 (File Number: 001-15138).
4.15.3	Continuing Connected Transactions Fourth Supplemental Agreement Between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 26, 2015 (English translation), incorporated by reference to Exhibit 4.22 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 20, 2016 (File Number: 001-15138).
4.15.4*	Continuing Connected Transactions Fifth Supplemental Agreement Between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 24, 2018 (English translation).
4.16	Non-Compete Agreement Between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 and its related Undertakings (English translation), incorporated by reference to Exhibit 4.21 to our Annual Report on Form 20-F/A filed with the Securities and Exchange Commission on September 26, 2013 (File Number: 001-15138).
4.16.1	Undertakings from China Petrochemical Corporation Regarding Further Avoiding Competition with China Petroleum & Chemical Corporation dated April 28, 2014 (English translation), incorporated by reference to Exhibit 4.21.1 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 10, 2015 (File Number: 001-15138).
8.1*	A list of the Registrant s subsidiaries.
12.1*	Certification of Principal Executive Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as amended.
12.2*	Certification of Principal Executive Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as amended.

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12.3*	Certification of Principal Financial Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as amended.
13**	Certification of CEO and CFO pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, and Rule 13a-14(b) under the Securities Exchange Act of 1934, as amended.
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document

* Filed with this annual report on Form 20-F.

** Furnished with this annual report on Form 20-F.

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SIGNATURE

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

China Petroleum & Chemical Corporation

By:	/s/ Huang Wensheng	
	Name:	Huang Wensheng
	Title:	Vice President and Secretary to the Board of Directors

Date: April 29, 2019

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CHINA PETROLEUM & CHEMICAL CORPORATION AND SUBSIDIARIES

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of China Petroleum & Chemical Corporation,

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of China Petroleum & Chemical Corporation and its subsidiaries (the Company) as of December 31, 2018 and 2017, and the related consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the three years in the period ended December 31, 2018, including the related notes (collectively referred to as the consolidated financial statements). We also have audited the Company s internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the COSO.

Basis for Opinions

The Company s management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management s Annual Report on Internal Control over Financial Reporting appearing under Item 15. Our responsibility is to express opinions on the Company s consolidated financial statements and on the Company s internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company s internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ PricewaterhouseCoopers Zhong Tian LLP
PricewaterhouseCoopers Zhong Tian LLP
Shanghai, the People s Republic of China
22 March, 2019

We have served as the Company s auditor since 2013.

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CHINA PETROLEUM & CHEMICAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENT OF INCOME

FOR THE YEARS ENDED DECEMBER 31, 2016, 2017 AND 2018

(Amounts in million, except per share data)

	Note	Years ended December 31, 2016 RMB	2017 RMB	2018 RMB
Operating revenues				
Sales of goods	3	1,880,190	2,300,470	2,825,613
Other operating revenues	4	50,721	59,723	65,566
		1,930,911	2,360,193	2,891,179
Operating expenses				
Purchased crude oil, products and operating supplies and expenses		(1,379,691)	(1,770,651)	(2,292,983)
Selling, general and administrative expenses	5	(64,360)	(64,973)	(65,642)
Depreciation, depletion and amortization		(108,425)	(115,310)	(109,967)
Exploration expenses, including dry holes		(11,035)	(11,089)	(10,744)
Personnel expenses	6	(63,887)	(74,854)	(77,721)
Taxes other than income tax	7	(232,006)	(235,292)	(246,498)
Other operating income/(expense), net	8	5,686	(16,554)	(5,360)
Total operating expenses		(1,853,718)	(2,288,723)	(2,808,915)
Operating income		77,193	71,470	82,264
Finance costs				
Interest expense	9	(9,219)	(7,146)	(7,321)
Interest income		3,218	5,254	7,726
Foreign currency exchange (loss)/gain, net		(610)	332	596
Net finance costs		(6,611)	(1,560)	1,001
Investment income		263	262	1,871
Share of profits less losses from associates and joint ventures	21,22	9,306	16,525	13,974
Earnings before income tax		80,151	86,697	99,110
Income tax expense	10	(20,707)	(16,279)	(20,213)
Net income		59,444	70,418	78,897
Attributable to:				
Owners of the Company		46,672	51,244	61,618
Non-controlling interests		12,772	19,174	17,279
Net income		59,444	70,418	78,897
Earnings per share:				
Basic	12	0.39	0.42	0.51
Diluted	12	0.39	0.42	0.51

See accompanying notes to consolidated financial statements.

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CHINA PETROLEUM & CHEMICAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

FOR THE YEARS ENDED DECEMBER 31, 2016, 2017 AND 2018

(Amounts in million)

		Years ended December 31,		
	Note	**2016 RMB**	**2017 RMB**	**2018 RMB**
Net income		59,444	70,418	78,897
Other comprehensive income:	11			
Items that maynot be reclassified subsequently to profit or loss				
Equity investments at fair value through other comprehensive income				(53)
Total items that maynot be reclassified subsequently to profit or loss				**(53)**
Items that may be reclassified subsequently to profit or loss				
Share of other comprehensive income /(loss) of associates and joint ventures		45	1,053	(229)
Available-for-sale securities		(24)	(57)	
Cash flow hedges		2,014	(1,580)	(9,741)
Foreign currency translation differences		4,298	(3,792)	3,399
Total items that may be reclassified subsequently to profit or loss		6,333	(4,376)	(6,571)
Total other comprehensive income		6,333	(4,376)	(6,624)
Total comprehensive income for the year		65,777	66,042	72,273
Attributable to:				
Owners of the Company		53,724	47,763	54,000
Non-controlling interests		12,053	18,279	18,273
Total comprehensive income for the year		65,777	66,042	72,273

See accompanying notes to consolidated financial statements.

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CHINA PETROLEUM & CHEMICAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEET

AS OF DECEMBER 31, 2017 AND 2018

(Amounts in million)

	Note	December 31, 2017 RMB	December 31, 2018 RMB
ASSETS			
Current assets			
Cash and cash equivalents		113,218	111,922
Time deposits with financial institutions		51,786	55,093
Financial assets at fair value through profit or loss	13	51,196	25,732
Derivatives financial assets	14	526	7,887
Trade accounts receivable and bills receivable	15	84,701	64,879
Inventories	16	186,693	184,584
Prepaid expenses and other current assets	17	40,929	54,023
Total current assets		529,049	504,120
Non-current assets			
Property, plant and equipment, net	18	650,774	617,762
Construction in progress	19	118,645	136,963
Goodwill	20	8,634	8,676
Interest in associates	21	79,726	89,537
Interest in joint ventures	22	51,361	56,184
Available-for-sale financial assets	1(a)	1,676	
Financial assets at fair value through other comprehensive income	1(a)		1,450
Deferred tax assets	23	15,131	21,694
Lease prepayments	24	58,526	64,514
Long-term prepayments and other assets	25	81,982	91,408
Total non-current assets		1,066,455	1,088,188
Total assets		1,595,504	1,592,308
LIABILITIES AND EQUITY			
Current liabilities			
Short-term debts	26	55,338	29,462
Loans from Sinopec Group Company and fellow subsidiaries	26	25,311	31,665
Derivatives financial liabilities	14	2,665	13,571
Trade accounts payable and bills payable	27	206,535	192,757
Contract liabilities	28		124,793
Other payables	29	276,582	166,151
Income tax payable		13,015	6,699
Total current liabilities		579,446	565,098
Non-current liabilities			
Long-term debts	26	55,804	51,011
Loans from Sinopec Group Company and fellow subsidiaries	26	43,320	42,516
Deferred tax liabilities	23	6,466	5,948
Provisions	30	39,958	42,800
Other long-term liabilities		17,620	28,400
Total non-current liabilities		163,168	170,675
Total liabilities		742,614	735,773

Equity			
Share capital	31	121,071	121,071
Reserves	41	605,049	596,213
Total equity attributable to owners of the Company		726,120	717,284
Non-controlling interests		126,770	139,251
Total equity		852,890	856,535
Total liabilities and equity		1,595,504	1,592,308

See accompanying notes to consolidated financial statements.

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CHINA PETROLEUM & CHEMICAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

FOR THE YEARS ENDED DECEMBER 31, 2016, 2017 AND 2018

(Amounts in million)

	Share capital RMB	Capital reserve RMB	Share premium RMB	Statutory surplus reserve RMB	Discretionary surplus reserve RMB	Other reserves RMB	Retained earnings RMB	Total equity attributable to owners of the Company RMB	Non-controlling interests RMB	Total equity RMB
Balance as of January 1, 2016	121,071	28,341	55,850	79,640	117,000	(6,781)	281,076	676,197	111,964	788,161
Net income							46,672	46,672	12,772	59,444
Other comprehensive income (Note 11)						7,052		7,052	(719)	6,333
Total comprehensive income for the year						7,052	46,672	53,724	12,053	65,777
Transactions with owners, recorded directly in equity:										
Contributions by and distributions to owners:										
Final dividend for 2015							(7,264)	(7,264)		(7,264)
Interim dividend for 2016							(9,565)	(9,565)		(9,565)
Appropriation (Note 41 (c))										
Distributions to non-controlling interests									(6,146)	(6,146)
Profit distribution to SAMC (Note 33)							(47)	(47)	(39)	(86)
Distribution to SAMC in the Acquisition of Gaoqiao Branch of SAMC (Note 33)		(2,137)						(2,137)	2,137	
Total contributions by and distributions to owners		(2,137)					(16,876)	(19,013)	(4,048)	(23,061)
Changes in ownership interests in subsidiaries that do not result in a loss of control:										
Transaction with non-controlling interests		(30)						(30)	263	233
Total changes in ownership interests in subsidiaries that do not result in a loss of control		(30)						(30)	263	233
		(2,167)					(16,876)	(19,043)	(3,785)	(22,828)

Total transactions with owners										
Others		116				153	(153)	116	9	125
Balance as of December 31, 2016	121,071	26,290	55,850	79,640	117,000	424	310,719	710,994	120,241	831,235

See accompanying notes to consolidated financial statements.

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CHINA PETROLEUM & CHEMICAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY (CONTINUED)

FOR THE YEARS ENDED DECEMBER 31, 2016, 2017 AND 2018

(Amounts in million)

	Share capital RMB	Capital reserve RMB	Share premium RMB	Statutory surplus reserve RMB	Discretionary surplus reserve RMB	Other reserves RMB	Retained earnings RMB	Total equity attributable to owners of the Company RMB	Non-controlling interests RMB	Total equity RMB
Balance as of January 1, 2017	121,071	26,290	55,850	79,640	117,000	424	310,719	710,994	120,241	831,235
Net income							51,244	51,244	19,174	70,418
Other comprehensive income (Note 11)						(3,481)		(3,481)	(895)	(4,376)
Total comprehensive income for the year						(3,481)	51,244	47,763	18,279	66,042
Transactions with owners, recorded directly in equity:										
Contributions by and distributions to owners:										
Final dividend for 2016							(20,582)	(20,582)		(20,582)
Interim dividend for 2017							(12,107)	(12,107)		(12,107)
Appropriation (Note 41 (c))				3,042			(3,042)			
Distributions to non-controlling interests									(12,501)	(12,501)
Total contributions by and distributions to owners				3,042			(35,731)	(32,689)	(12,501)	(45,190)
Changes in ownership interests in subsidiaries that do not result in a loss of control:										
Transaction with non-controlling interests		(13)						(13)	724	711
Total changes in ownership interests in subsidiaries that do not result in a loss of control		(13)						(13)	724	711
Total transactions with owners		(13)		3,042			(35,731)	(32,702)	(11,777)	(44,479)
Others		49				123	(107)	65	27	92
Balance as of December 31, 2017	121,071	26,326	55,850	82,682	117,000	(2,934)	326,125	726,120	126,770	852,890

See accompanying notes to consolidated financial statements.

CHINA PETROLEUM & CHEMICAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY (CONTINUED)

FOR THE YEARS ENDED DECEMBER 31, 2016, 2017 AND 2018

(Amounts in million)

	Share capital RMB	Capital reserve RMB	Share premium RMB	Statutory surplus reserve RMB	Discretionary surplus reserve RMB	Other reserves RMB	Retained earnings RMB	Total equity attributable to owners of the Company RMB	Non-controlling interests RMB	Total equity RMB
Balance as of December 31,2017	121,071	26,326	55,850	82,682	117,000	(2,934)	326,125	726,120	126,770	852,890
Change in accounting policy (Note 1(a))						(12)	12			
Balance as of January 1, 2018	121,071	26,326	55,850	82,682	117,000	(2,946)	326,137	726,120	126,770	852,890
Net income							61,618	61,618	17,279	78,897
Other comprehensive income (Note 11)						(7,618)		(7,618)	994	(6,624)
Total comprehensive income for the year						(7,618)	61,618	54,000	18,273	72,273
Amounts transferred to cash flow hedge reserves initially recognized by hedged items						5,269		5,269		5,269
Transactions with owners, recorded directly in equity:										
Contributions by and distributions to owners:										
Final dividend for 2017							(48,428)	(48,428)		(48,428)
Interim dividend for 2018							(19,371)	(19,371)		(19,371)
Appropriation (Note 41 (c))				3,996			(3,996)			
Distributions to non-controlling interests									(7,476)	(7,476)
Contributions to subsidiaries from non-controlling interests									2,060	2,060
Total contributions by and distributions to owners				3,996			(71,795)	(67,799)	(5,416)	(73,215)
Transaction with non-controlling interests		(12)						(12)	(299)	(311)
Total transactions with owners		(12)		3,996			(71,795)	(67,811)	(5,715)	(73,526)
Others		(261)				818	(851)	(294)	(77)	(371)
	121,071	26,053	55,850	86,678	117,000	(4,477)	315,109	717,284	139,251	856,535

Balance as of December 31, 2018

See accompanying notes to consolidated financial statements.

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CHINA PETROLEUM & CHEMICAL CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENT OF CASH FLOWS

FOR THE YEARS ENDED DECEMBER 31, 2016, 2017 AND 2018

(Amounts in million)

		Years ended December 31,		
	Note	2016 RMB	2017 RMB	2018 RMB
Net cash generated from operating activities	(a)	214,543	190,935	175,868
Investing activities				
Capital expenditure		(65,467)	(63,541)	(94,753)
Exploratory wells expenditure		(7,380)	(7,407)	(8,261)
Purchase of investments, investments in associates and investments in joint ventures	21,22	(16,389)	(6,431)	(10,116)
Payment for financial assets at fair value through profit or loss			(51,196)	(29,550)
Proceeds from sale of financial assets at fair value through profit or loss				55,000
Payment for acquisition of subsidiary, net of cash acquired			(1,288)	(3,188)
Proceeds from disposal of investments and investments in associates		33,516	4,809	1,557
Proceeds from disposal of property, plant, equipment and other non-current assets		440	1,313	9,666
Increase in time deposits with maturities over three months		(17,896)	(82,577)	(81,708)
Decrease in time deposits with maturities over three months		600	48,820	78,401
Interest received		2,331	3,669	5,810
Investment and dividend income received		4,028	8,506	10,720
Net cash used in investing activities		(66,217)	(145,323)	(66,422)
Financing activities				
Proceeds from bank and other loans		506,097	524,843	746,655
Repayments of bank and other loans		(569,091)	(536,380)	(772,072)
Contributions to subsidiaries from non-controlling interests		343	946	1,886
Dividends paid by the Company		(16,876)	(32,689)	(67,799)
Distributions by subsidiaries to non-controlling interests		(6,553)	(7,539)	(13,700)
Interest paid		(6,967)	(5,535)	(5,984)
Payments made to acquire non-controlling interests				(160)
Finance lease payment			(155)	(86)
Net cash used in financing activities		(93,047)	(56,509)	(111,260)
Net increase/(decrease) in cash and cash equivalents		55,279	(10,897)	(1,814)
Cash and cash equivalents as of January 1		68,933	124,468	113,218
Effect of foreign currency exchange rate changes		256	(353)	518
Cash and cash equivalents as of December 31		124,468	113,218	111,922

See accompanying notes to consolidated financial statements.

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CHINA PETROLEUM & CHEMICAL CORPORATION AND SUBSIDIARIES

NOTES TO CONSOLIDATED STATEMENT OF CASH FLOWS

FOR THE YEARS ENDED DECEMBER 31, 2016, 2017 AND 2018

(Amounts in million)

(a) Reconciliation of earnings before income tax to net cash generated from operating activities

	Years ended December 31,		
	2016 RMB	**2017 RMB**	**2018 RMB**
Operating activities			
Earnings before income tax	80,151	86,697	99,110
Adjustment for:			
Depreciation, depletion and amortization	108,425	115,310	109,967
Dry hole costs written off	7,467	6,876	6,921
Income from associates and joint ventures	(9,306)	(16,525)	(13,974)
Investment income	(263)	(262)	(1,871)
Gain on dilution and remeasurement of interests in the Pipeline Ltd	(20,562)		
Gain on remeasurement of interests in the Shanghai SECCO (Note 33)		(3,941)	
Interest income	(3,218)	(5,254)	(7,726)
Interest expense	9,219	7,146	7,321
Loss/(gain) on foreign currency exchange rate changes and derivative financial instruments	86	(1,547)	(1,835)
Loss on disposal of property, plant, equipment and other non- currents assets, net	1,528	1,518	1,526
Impairment losses on assets	17,076	21,791	11,605
Credit impairment losses			141
	190,603	211,809	211,185
Net changes from:			
Accounts receivable and other current assets	(22,549)	(31,151)	(1,043)
Inventories	(11,364)	(28,903)	(3,312)
Accounts payable and other current liabilities	81,089	59,210	2,111
	237,779	210,965	208,941
Income tax paid	(23,236)	(20,030)	(33,073)
Net cash generated from operating activities	214,543	190,935	175,868

See accompanying notes to consolidated financial statements.

1 PRINCIPAL ACTIVITIES, ORGANIZATION AND BASIS OF PREPARATION

Principal activities

China Petroleum & Chemical Corporation (the Company) is an energy and chemical company that, through its subsidiaries (hereinafter collectively referred to as the Group), engages in oil and gas and chemical operations in the People s Republic of China (the PRC). Oil and gas operations consist of exploring for, developing and producing crude oil and natural gas; transporting crude oil and natural gas by pipelines; refining crude oil into finished petroleum products; and marketing crude oil, natural gas and refined petroleum products. Chemical operations include the manufacture and marketing of a wide range of chemicals for industrial uses.

Organization

The Company was established in the PRC on February 25, 2000 as a joint stock limited company as part of the reorganization (the Reorganization) of China Petrochemical Corporation (Sinopec Group Company), the ultimate holding company of the Group and a ministry-level enterprise under the direct supervision of the State Council of the PRC. Prior to the incorporation of the Company, the oil and gas and chemical operations of the Group were carried on by oil administration bureaux, petrochemical and refining production enterprises and sales and marketing companies of Sinopec Group Company.

As part of the Reorganization, certain of Sinopec Group Company s core oil and gas and chemical operations and businesses together with the related assets and liabilities were transferred to the Company. On February 25, 2000, in consideration for Sinopec Group Company transferring such oil and gas and chemical operations and businesses and the related assets and liabilities to the Company, the Company issued 68.8 billion domestic state-owned ordinary shares with a par value of RMB 1.00 each to Sinopec Group Company. The shares issued to Sinopec Group Company on February 25, 2000 represented the entire registered and issued share capital of the Company as of that date. The oil and gas and chemical operations and businesses transferred to the Company were related to (i) the exploration, development and production of crude oil and natural gas, (ii) the refining, transportation, storage and marketing of crude oil and petroleum products, and (iii) the production and sales of chemicals.

Basis of preparation

The accompanying consolidated financial statements have been prepared in accordance with all applicable International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). IFRS includes International Accounting Standards (IAS) and related interpretations (IFRIC). A summary of the significant accounting policies adopted by the Group are set out in Note 2. The accompanying financial statements were authorized for issue by the Board of Directors on March 22, 2019.

The accounting policies adopted are consistent with those of the previous financial year, except for the adoption of new and amended standards as set out below.

(a) New and amended standards and interpretations adopted by the Group

A number of new or amended standards became applicable for the current reporting period and the Group had to change its accounting policies as a result of adopting the following standards:

- IFRS 9 Financial Instruments , and
- IFRS 15 Revenue from Contracts with Customers

IFRS 9 Financial Instruments and IFRS 15 Revenue from Contracts with Customers - Impact of adoption

The adoption of IFRS 9 Financial Instruments (IFRS 9) and IFRS 15 Revenue from Contracts with Customers (IFRS 15) from January 1, 2018 by the Group resulted in changes in accounting policies and adjustments to the amounts recognized in the financial statements.

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1 PRINCIPAL ACTIVITIES, ORGANIZATION AND BASIS OF PREPARATION *(Continued)*

Basis of preparation *(Continued)*

(a) New and amended standards and interpretations adopted by the Group *(Continued)*

Transition options of IFRS 9 Financial Instruments

Classification and measurement

The Group has elected to apply the limited exemption in IFRS 9 relating to transition for classification and measurement and impairment, and accordingly has not restated comparative periods in the year of initial application:

(a) any adjustments to carrying amounts of financial assets or liabilities are recognized at the beginning of the current reporting period, with the difference recognized in opening retained earnings

(b) financial assets are not reclassified in the balance sheet for the comparative period

(c) provisions for impairment have not been restated in the comparative period

Impairment

The Group has adopted the simplified expected credit loss model for its trade receivables and contract assets, as required by IFRS 9, and the general expected credit loss model for receivables and contract assets carried at amortized. The Group assessed the loss allowance for receivables under the expected credit loss model as of January 1, 2018, no significant difference compared with the loss allowance under accounting policies applied until December 31, 2017.

Hedging

The Group has applied the hedging accounting prospectively to the derivatives held for hedging purpose.

Financial instruments accounting policy applied until December 31, 2017 is disclosed in Note 2 (k) (iv).

Transition options of IFRS 15 Revenue from Contracts with Customers

The Group has elected to apply the simplified transition method, retrospectively with the cumulative effect of initially applying IFRS 15 as an adjustment to the balance as of January 1, 2018.

Presentation and description of contract assets and contract liabilities

The Group has decided to reclassify contract assets and contract liabilities and present them as a separate line item in the balance sheet based on the significance of the item.

The adjustments arising from the new accounting policies are therefore recognized in the opening balance sheet as of January 1, 2018, comparative figures have not been restated. The new accounting policies are disclosed in Note 2. The adoption of IFRS 9 and IFRS 15 has no significant impact on the Group s financial statements.

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1 PRINCIPAL ACTIVITIES, ORGANIZATION AND BASIS OF PREPARATION *(Continued)*

Basis of preparation *(Continued)*

(a) New and amended standards and interpretations adopted by the Group *(Continued)*

The following tables show the adjustments recognized for each individual line item. Line items that were not affected by the changes have not been included. As a result, the sub-totals and totals disclosed cannot be recalculated from the numbers provided.

Consolidated balance sheet (extract)	**December 31, 2017 RMB**	**Adjustment from Adoption of IFRS 9 RMB**	**Adjustment from Adoption of IFRS 15 RMB**	**January 1, 2018 RMB**
Non-current assets				
Financial assets at fair value through other comprehensive income		1,676		1,676
Available-for-sale financial assets	1,676	(1,676)		
Total non-current assets	**1,066,455**			**1,066,455**
Current assets				
Total current assets	**529,049**			**529,049**
Current liabilities				
Contract liabilities(i)			120,734	120,734
Other payables(i)	276,582		(120,734)	155,848
Total current liabilities	**579,446**			**579,446**
Non-current liabilities				
Total non-current liabilities	**163,168**			**163,168**
	852,890			**852,890**
Equity				
Other reserves	(2,934)	(12)		(2,946)
Retained earnings	326,125	12		326,137
Total equity	**852,890**			**852,890**

(i) Advances from customers were reclassified as contract liabilities by implementation of IFRS 15 Revenue from Contracts with Customers .

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1 PRINCIPAL ACTIVITIES, ORGANIZATION AND BASIS OF PREPARATION *(Continued)*

Basis of preparation *(Continued)*

(b) New and amended standards and interpretations not yet adopted by the Group

IFRS 16, Leases , was issued in January 2016. It will result in almost all leases being recognized on the balance sheet by lessees, as the distinction between operating and finance leases is removed. Under the new standard, an asset (the right to use the leased item) and a financial liability to pay rentals are recognized. Leases to explore for or use oil and natural gas are not applied to IFRS 16.

The Group will apply the standard from its mandatory adoption date of January 1, 2019. The Group intends to apply the simplified transition approach and will not restate comparative amounts for the year prior to first adoption. All right-of-use assets will be measured at the amount of the lease liability on adoption (adjusted for any prepaid or accrued lease expenses).

In applying IFRS 16 for the first time, the Group has used the following practical expedients permitted by the standard:

- The use of a single discount rate to a portfolio of leases with reasonably similar characteristics

- The accounting for operating leases with a remaining lease term of less than 12 months as of January 1, 2019 as short-term leases

The Group has set up a project team which has reviewed all of the Group s leasing arrangements over the last year in light of the new lease accounting rules in IFRS 16. The standard will affect primarily the accounting for the Group s operating leases.

The Group expects to recognize right-of-use assets of approximately RMB 207.5 billion as of January 1, 2019, lease liabilities of RMB 198.6 billion (after adjustments for prepayments and accrued lease payments recognized as of December 31, 2018).

The preparation of the consolidated financial statements in accordance with IFRS requires management to make judgements, estimates and assumptions that affect the application of policies and reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the period. The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis of making the judgements about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results could differ from those estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

Key assumptions and estimation made by management in the application of IFRS that have significant effect on the consolidated financial statements and the major sources of estimation uncertainty are disclosed in Note 39.

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2 SIGNIFICANT ACCOUNTING POLICIES

(a) Basis of consolidation

The consolidated financial statements comprise the Company and its subsidiaries, and interest in associates and joint ventures.

(i) Subsidiaries and non-controlling interests

Subsidiaries are those entities controlled by the Group. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

The financial statements of subsidiaries are included in the consolidated financial statements from the date that control effectively commences until the date that control effectively ceases.

Non-controlling interests at the balance sheet date, being the portion of the net assets of subsidiaries attributable to equity interests that are not owned by the Company, whether directly or indirectly through subsidiaries, are presented in the consolidated balance sheet and consolidated statement of changes in equity within equity, separately from equity attributable to the owners of the Company. Non-controlling interests in the results of the Group are presented on the face of the consolidated statement of income and the consolidated statement of comprehensive income as an allocation of the total profit or loss and total comprehensive income for the year between non-controlling interests and the owners of the Company.

Changes in the Group s interests in a subsidiary that do not result in a loss of control are accounted for as equity transactions, whereby adjustments are made to the amounts of controlling and non-controlling interests within consolidated equity to reflect the change in relative interests, but no adjustments are made to goodwill and no gain or loss is recognized.

If a business combination involving entities not under common control is achieved in stages, the acquisition date carrying value of the acquirer s previously held equity interest in the acquiree is remeasured to fair value at the acquisition date. Any gains or losses arising from such remeasurement are recognized in the consolidated statement of income.

When the Group loses control of a subsidiary, it is accounted for as a disposal of the entire interest in that subsidiary, with a resulting gain or loss being recognized in profit or loss. Any interest retained in that former subsidiary at the date when control is lost is recognized at fair value and this amount is regarded as the fair value on initial recognition of a financial asset (Note 2(k)) or, when appropriate, the cost on initial recognition of an investment in an associate or joint venture (Note 2(a)(ii)).

In the Company s balance sheet, investments in subsidiaries are stated at cost less impairment losses (Note 2(o)).

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2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(a) Basis of consolidation *(Continued)*

(i) Subsidiaries and non-controlling interests *(Continued)*

The particulars of the Group s principal subsidiaries are set out in Note 37.

(ii) Associates and joint ventures

An associate is an entity, not being a subsidiary, in which the Group exercises significant influence over its management. Significant influence is the power to participate in the financial and operating policy decisions of the investee but is not control or joint control over those policies.

The investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations each investor has rather than the legal structure of the joint arrangement. A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement.

Investments in associates and joint ventures are accounted for in the consolidated financial statements using the equity method from the date that significant influence or joint control commences until the date that significant influence or joint control ceases. Under the equity method, the investment is initially recorded at cost and adjusted thereafter for the post acquisition change in the Group s share of the investee s net assets and any impairment loss relating to the investment (Note 2(j) and (o)).

The Group s share of the post-acquisition, post-tax results of the investees and any impairment losses for the year are recognized in the consolidated statement of income, whereas the Group s share of the post-acquisition, post-tax items of the investees other comprehensive income is recognized in the consolidated statement of comprehensive income.

When the Group ceases to have significant influence over an associate or joint control over a joint venture, it is accounted for as a disposal of the entire interest in that investee, with a resulting gain or loss being recognized in profit or loss. Any interest retained in that former investee at the date when significant influence or joint control is lost is recognized at fair value and this amount is regarded as the fair value on initial recognition of a financial asset (see Note 2(k)) or, when appropriate, the cost on initial recognition of an investment in an associate (see Note 2(a) (ii)).

(iii) Transactions eliminated on consolidation

Inter-company balances and transactions and any unrealized gains arising from inter-company transactions are eliminated on consolidation. Unrealized gains arising from transactions with associates and joint ventures are eliminated to the extent of the Group s interest in the entity. Unrealized losses are eliminated in the same way as unrealized gains, but only to the extent that there is no evidence of impairment.

(iv) Merger accounting for common control combination

The consolidated financial statements incorporate the financial statements of the combining entities or businesses in which the common control combination occurs as if they had been combined from the date when the combining entities or businesses first came under the control of the controlling party. The net assets of the combining entities or businesses are combined using the existing book values from the controlling parties perspective. No amount is recognized as consideration for goodwill or excess of acquirers interest in the net fair value of acquiree s identifiable assets, liabilities and contingent liabilities over cost at the time of common control combination, to the extent of the continuation of the controlling party s interest.

The consolidated statement of income includes the results of each of the combining entities or businesses from the earliest date presented or since the date when the combining entities or businesses first came under the common control, where there is a shorter period, regardless of the date of the common control combination. The comparative amounts in the consolidated financial statements are presented as if the entities or businesses had been combined at the previous balance sheet date or when they first came under common control, whichever is shorter.

2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(a) Basis of consolidation *(Continued)*

(iv) Merger accounting for common control combination *(Continued)*

A uniform set of accounting policies is adopted by those entities. All intra-group transactions, balances and unrealized gains on transactions between combining entities or businesses are eliminated on consolidation. Transaction costs, including professional fees, registration fees, costs of furnishing information to shareholders, costs or losses incurred in combining operations of the previously separate businesses, etc., incurred in relation to the common control combination that is to be accounted for by using merger accounting is recognized as an expense in the period in which it is incurred.

(b) Translation of foreign currencies

The presentation currency of the Group is Renminbi. Foreign currency transactions during the year are translated into Renminbi at the applicable rates of exchange quoted by the People s Bank of China (PBOC) prevailing on the transaction dates. Foreign currency monetary assets and liabilities are translated into Renminbi at the PBOC s rates at the balance sheet date.

Exchange differences, other than those capitalized as construction in progress, are recognized as income or expenses in the finance costs section of the consolidated statement of income.

The results of foreign operations are translated into Renminbi at the applicable rates quoted by the PBOC prevailing on the transaction dates. Balance sheet items, including goodwill arising on consolidation of foreign operations are translated into Renminbi at the closing foreign exchange rates at the balance sheet date. The income and expenses of foreign operations are translated into Renminbi at the spot exchange rates or an exchange rate that approximates the spot exchange rates on the transaction dates. The resulting exchange differences are recognized in other comprehensive income and accumulated in equity in the other reserves.

On disposal of a foreign operation, the cumulative amount of the exchange differences relating to that foreign operation is reclassified from equity to the consolidated statement of income when the profit or loss on disposal is recognized.

(c) Cash and cash equivalents

Cash equivalents consist of time deposits with financial institutions with an initial term of less than three months when purchased. Cash equivalents are stated at cost, which approximates fair value.

(d) Trade, bills and other receivables

Trade, bills and other receivables are initially recognized at fair value and thereafter stated at amortized cost using the effective interest method, less impairment losses for bad and doubtful debts (Note 2(k)). Trade, bills and other receivables are derecognized if the Group s contractual rights to the cash flows from these financial assets expire or if the Group transfers these financial assets to another party without retaining control or substantially all risks and rewards of the assets.

(e) Inventories

Inventories are stated at the lower of cost and net realizable value. Cost includes the cost of purchase computed using the weighted average method and, in the case of work in progress and finished goods, direct labor and an appropriate proportion of production overheads. Net realizable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and the estimated costs necessary to make the sale.

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2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(f) Property, plant and equipment

An item of property, plant and equipment is initially recorded at cost, less accumulated depreciation and impairment losses (Note 2(o)). The cost of an asset comprises its purchase price, any directly attributable costs of bringing the asset to working condition and location for its intended use. The Group recognizes in the carrying amount of an item of property, plant and equipment the cost of replacing part of such an item when that cost is incurred, when it is probable that the future economic benefits embodied with the item will flow to the Group and the cost of the item can be measured reliably. All other expenditure is recognized as an expense in the consolidated statement of income in the year in which it is incurred.

Gains or losses arising from the retirement or disposal of an item of property, plant and equipment, other than oil and gas properties, are determined as the difference between the net disposal proceeds and the carrying amount of the item and are recognized as income or expense in the consolidated statement of income on the date of retirement or disposal.

Depreciation is provided to write off the cost amount of items of property, plant and equipment, other than oil and gas properties, over its estimated useful life on a straight-line basis, after taking into account its estimated residual value, as follows:

	Estimated usage period	Estimated residuals rate
Buildings	12 to 50 years	3%
Equipment, machinery and others	4 to 30 years	3%

Where parts of an item of property, plant and 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. Both the useful life of an asset and its residual value, if any, are reassessed annually.

(g) Oil and gas properties

The Group uses the successful efforts method of accounting for its oil and gas producing activities. Under this method, costs of development wells, the related supporting equipment and proved mineral interests in properties are capitalized. The cost of exploratory wells is initially capitalized as construction in progress pending determination of whether the well has found proved reserves. The impairment of exploratory well costs occurs upon the determination that the well has not found proved reserves. The exploratory well costs are usually not carried as an asset for more than one year following completion of drilling, unless (i) the well has found a sufficient quantity of reserves to justify its completion as a producing well if the required capital expenditure is made; (ii) drilling of the additional exploratory wells is under way or firmly planned for the near future; or (iii) other activities are being undertaken to sufficiently progress the assessing of the reserves and the economic and operating viability of the project. All other exploration costs, including geological and geophysical costs, other dry hole costs and annual lease rentals to explore for or use oil and natural gas, are expensed as incurred. Capitalized costs of proved oil and gas properties are amortized on a unit-of-production method based on volumes produced and reserves.

Management estimates future dismantlement costs for oil and gas properties with reference to engineering estimates after taking into consideration the anticipated method of dismantlement required in accordance with the industry practices and the future cash flows are adjusted to reflect such risks specific to the liability, as appropriate. These estimated future dismantlement costs are discounted at a pre-tax risk-free rate and are capitalized as oil and gas properties, which are subsequently amortized as part of the costs of the oil and gas properties.

(h) Lease prepayments

Lease prepayments represent land use rights paid to the relevant government authorities. Land use rights are carried at cost less accumulated amount charged to expense and impairment losses (Note 2(o)). The cost of lease prepayments is charged to expense on a straight-line basis over the respective periods of the rights.

2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(i) Construction in progress

Construction in progress represents buildings, oil and gas properties, various plant and equipment under construction and pending installation, and is stated at cost less impairment losses (Note 2(o)). Cost comprises direct costs of construction as well as interest charges, and foreign exchange differences on related borrowed funds to the extent that they are regarded as an adjustment to interest charges, during the periods of construction.

Construction in progress is transferred to property, plant and equipment when the asset is substantially ready for its intended use.

No depreciation is provided in respect of construction in progress.

(j) Goodwill

Goodwill represents amounts arising on acquisition of subsidiaries, associates or joint ventures. Goodwill represents the difference between the cost of acquisition and the fair value of the net identifiable assets acquired.

Prior to January 1, 2008, the acquisition of the non-controlling interests of a consolidated subsidiary was accounted for using the acquisition method whereby the difference between the cost of acquisition and the fair value of the net identifiable assets acquired (on a proportionate share) was recognized as goodwill. From January 1, 2008, any difference between the amount by which the non-controlling interest is adjusted (such as through an acquisition of the non-controlling interests) and the cash or other considerations paid is recognized in equity.

Goodwill is stated at cost less accumulated impairment losses. Goodwill arising on a business combination is allocated to each cash-generating unit, or groups of cash-generating units, that is expected to benefit the synergies of the combination and is tested annually for impairment (Note 2(o)). In respect of associates or joint ventures, the carrying amount of goodwill is included in the carrying amount of the interest in the associates or joint ventures and the investment as a whole is tested for impairment whenever there is objective evidence of impairment (Note 2(o)).

(k) Financial assets

(i) Classification and measurement

The Group classifies financial assets into different categories depending on the business model for managing the financial assets and the contractual terms of cash flows of the financial assets: a) financial assets measured at amortized cost, b) financial assets measured at fair value through other comprehensive income, c) financial assets measured at fair value through profit or loss. A contractual cash flow characteristic which could have only a de minimis effect, or could have an effect that is more than de minimis but is not genuine, does not affect the classification of the financial asset.

Financial assets are initially recognized at fair value. For financial assets measured at fair value through profit or loss, the relevant transaction costs are recognized in profit or loss. The transaction costs for other financial assets are included in the initially recognized amount. Trade accounts receivable and bills receivable arising from sale of goods or rendering services, without significant financing component, are initially recognized based on the transaction price expected to be entitled by the Group.

Debt instruments

Debt instruments held by the Group mainly includes cash and cash equivalents, time deposits with financial institutions, receivables. These financial assets are measured at amortized cost.

The business model for managing such financial assets by the Group are held for collection of contractual cash flows. The contractual cash flow characteristics are to give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount out-standing. Interest income from these financial assets is recognized using the effective interest rate method

2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(k) Financial assets *(Continued)*

Equity instruments

Equity instruments that the Group has no power to control, jointly control or exercise significant influence over, are measured at fair value through profit or loss and presented in financial assets at fair value through profit or loss.

In addition, the Group designates some equity instruments that are not held for trading as financial assets at fair value through other comprehensive income, are presented in financial assets at fair value through other comprehensive income. The relevant dividends of these financial assets are recognized in profit or loss. When derecognized, the cumulative gain or loss previously recognized in other comprehensive income is transferred to retained earnings.

(ii) Impairment

The Group recognizes a loss allowance for expected credit losses on a financial asset that is measured at amortized cost.

The Group measures and recognizes expected credit losses, considering reasonable and supportable information about the relevant past events, current conditions and forecasts of future economic conditions.

The Group measures the expected credit losses of financial instruments on different stages at each balance sheet date. For financial instruments that have no significant increase in credit risk since the initial recognition, on first stage, the Group measures the loss allowance at an amount equal to 12-month expected credit losses. If there has been a significant increase in credit risk since the initial recognition of a financial instrument but credit impairment has not occurred, on second stage, the Group recognizes a loss allowance at an amount equal to lifetime expected credit losses. If credit impairment has occurred since the initial recognition of a financial instrument, on third stage, the Group recognizes a loss allowance at an amount equal to lifetime expected credit losses.

For financial instruments that have low credit risk at the balance sheet date, the Group assumes that there is no significant increase in credit risk since the initial recognition, and measures the loss allowance at an amount equal to 12-month expected credit losses.

For financial instruments on the first stage and the second stage, and that have low credit risk, the Group calculates interest income according to carrying amount without deducting the impairment allowance and effective interest rate. For financial instruments on the third stage, interest income is calculated according to the carrying amount minus amortized cost after the provision of impairment allowance and effective interest rate.

For receivables related to revenue, the Group measures the loss allowance at an amount equal to lifetime expected credit losses.

The Group recognizes the loss allowance accrued or written back in profit or loss.

(iii) Derecognition

The Group derecognizes a financial asset when: a) the contractual right to receive cash flows from the financial asset expires; b) the Group transfers the financial asset and substantially all the risks and rewards of ownership of the financial asset; c) the financial asset has been transferred and the Group neither transfers nor retains substantially all the risks and rewards of ownership of the financial asset, but the Group has not retained control.

On derecognition of financial assets at fair value through other comprehensive income, the difference between the carrying amounts and the sum of the consideration received and any accumulated gain or loss previously recognized in other comprehensive income, is recognized in retained earnings. While on derecognition of other financial assets, this difference is recognized in profit or loss.

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2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(k) Financial assets *(Continued)*

(iv) Accounting policy applied until December 31, 2017

Classification

Until December 31, 2017, the group classified its financial assets in the following categories: financial assets at fair value through profit or loss, loans and receivables, held-to-maturity investments, and available-for-sale financial assets.

The classification depended on the purpose for which the investments were acquired. Management determined the classification of its investments at initial recognition.

Subsequent measurement

The measurement at initial recognition did not change on adoption of IFRS 9.

Subsequent to the initial recognition, loans and receivables and held-to-maturity investments were carried at amortized cost using the effective interest method.

Available-for-sale financial assets and financial assets at fair value through profit or loss were subsequently carried at fair value. Gains or losses arising from changes in the fair value were recognized as follows: for financial assets at fair value through profit or loss - in profit or loss within other gains/(losses), for available-for-sale financial assets - in other comprehensive income.

When securities classified as available-for-sale were derecognized or impaired, the accumulated gains or losses recognized in other comprehensive income were reclassified to the consolidated income statement.

Impairment

Trade accounts receivables, other receivables and investment in equity securities that do not have a quoted market price in an active market are reviewed at each balance sheet date to determine whether there is objective evidence of impairment. If any such evidence exists, an impairment loss is determined and recognized.

The impairment loss is measured as the difference between the asset s carrying amount and the estimated future cash flows, discounted at the current market rate of return for a similar financial asset where the effect of discounting is material, and is recognized as an expense in the consolidated income statement. Impairment losses for trade and other receivables are reversed through the consolidated income statement if in a subsequent period the amount of the impairment losses decreases. Impairment losses for equity securities carried at cost are not reversed.

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2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(l) Financial liabilities

The Group, at initial recognition, classifies financial liabilities as either financial liabilities subsequently measured at amortized cost or financial liabilities at fair value through profit or loss.

The Group s financial liabilities are mainly financial liabilities measured at amortized cost, including bills payable, trade accounts payable, other payables, and loans, etc. These financial liabilities are initially measured at the amount of their fair value after deducting transaction costs and use the effective interest rate method for subsequent measurement.

Where the present obligations of financial liabilities are completely or partially discharged, the Group derecognizes these financial liabilities or discharged parts of obligations. The differences between the carrying amounts and the consideration received are recognized in profit or loss.

(m) Determination of fair value for financial instruments

If there is an active market for financial instruments, the quoted price in the active market is used to measure fair values of the financial instruments. If no active market exists for financial instruments, valuation techniques are used to measure fair values. In valuation, the Group adopts valuation techniques that are applicable in the current situation and have sufficient available data and other information to support it, and selects input values that are consistent with the asset or liability characteristics considered by market participants in the transaction of relevant assets or liabilities, and gives priority to relevant observable input values. Use of unobservable input values where relevant observable input values cannot be obtained or are not practicable.

(n) Derivative financial instruments and hedge accounting

Derivative financial instruments are recognized initially at fair value. At each balance sheet date, the fair value is remeasured. The gain or loss on remeasurement to fair value is recognized immediately in profit or loss, except where the derivatives qualify for hedge accounting.

Hedge accounting is a method which recognizes the offsetting effects on profit or loss (or other comprehensive income) of changes in the fair values of the hedging instrument and the hedged item in the same accounting period, to represent the effect of risk management activities.

Hedged items are the items that expose the Group to risks of changes in future cash flows and that are designated as being hedged and that must be reliably measurable. The Group s hedged items include a forecast transaction that is settled with an undetermined future market price and exposes the Group to risk of variability in cash flows, etc.

A hedging instrument is a designated derivative whose changes in cash flows are expected to offset changes in cash flows of the hedged item.

The hedging relationship meets all of the following hedge effectiveness requirements:

(i) There is an economic relationship between the hedged item and the hedging instrument, which shares a risk and that gives rise to opposite changes in fair value that tend to offset each other.

(ii) The effect of credit risk does not dominate the value changes that result from that economic relationship.

(iii) The hedge ratio of the hedging relationship is the same as that resulting from the quantity of the hedged item that the entity actually hedges and the quantity of the hedging instrument that the entity actually uses to hedge that quantity of hedged item. However, that designation does not reflect an imbalance between the weightings of the hedged item and the hedging instrument.

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2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(n) Derivative financial instruments and hedge accounting (Continued)

Cash flow hedges

Cash flow hedge is a hedge of the exposure to variability in cash flows that is attributable to a particular risk associated with all, or a component of, a recognized asset or liability (such as all or some future interest payments on variable-rate debt) or a highly probable forecast transaction, and could affect profit or loss. Hedge effectiveness is determined at the inception of the hedge relationship, and through periodic prospective effectiveness assessments to ensure that an economic relationship exists between the hedged item and hedging instrument.

As long as a cash flow hedge meets the qualifying criteria for hedge accounting, the separate component of equity associated with the hedged item (cash flow hedge reserve) is adjusted to the lower of the following (in absolute amounts):

(i) The cumulative gain or loss on the hedging instrument from inception of the hedge; and

(ii) The cumulative change in fair value (present value) of the hedged item (i.e. the present value of the cumulative change in the hedged expected future cash flows) from inception of the hedge.

The gain or loss on the hedging instrument that is determined to be an effective hedge is recognized in other comprehensive income.

The portion of the gain or loss on the hedging instrument that is determined to be an ineffective hedge is recognized in profit or loss.

If a hedged forecast transaction subsequently results in the recognition of a non-financial asset or non-financial liability, or a hedged forecast transaction for a non-financial asset or a nonfinancial liability becomes a firm commitment for which fair value hedge accounting is applied, the entity removes that amount from the cash flow hedge reserve and include it directly in the initial cost or other carrying amount of the asset or the liability. This is not a reclassification adjustment and hence it does not affect other comprehensive income.

For cash flow hedges, other than those covered by the preceding policy statements, that amount is reclassified from the cash flow hedge reserve to profit or loss as a reclassification adjustment in the same period or periods during which the hedged expected future cash flows affect profit or loss.

If the amount that has been accumulated in the cash flow hedge reserve is a loss and the Group expects that all or a portion of that loss will not be recovered in one or more future periods, the Group immediately reclassifies the amount that is not expected to be recovered into profit or loss.

When the hedging relationship no longer meets the risk management objective on the basis of which it qualified for hedge accounting (ie the entity no longer pursues that risk management objective), or when a hedging instrument expires or is sold, terminated, exercised, or there is no longer an economic relationship between the hedged item and the hedging instrument or the effect of credit risk starts to dominate the value changes that result from that economic relationship or no longer meets the criteria for hedge accounting, the Group discontinues prospectively the hedge accounting treatments. If the hedged future cash flows are still expected to occur, that amount remains in the cash flow hedge reserve and is accounted for as cash flow hedges. If the hedged future cash flows are no longer expected to occur, that amount is immediately reclassified from the cash flow hedge reserve to profit or loss as a reclassification adjustment. A hedged future cash flow that is no longer highly probable to occur may still be expected to occur, if the hedged future cash flows are still expected to occur, that amount remains in the cash flow hedge reserve and is accounted for as cash flow hedges.

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2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(o) Impairment of assets

The carrying amounts of assets, including property, plant and equipment, construction in progress, lease prepayments and other assets, are reviewed at each balance sheet date to identify indicators that the assets may be impaired. These assets are tested for impairment whenever events or changes in circumstances indicate that their recorded carrying amounts may not be recoverable. When such a decline has occurred, the carrying amount is reduced to the recoverable amount. For goodwill, the recoverable amount is estimated at each balance sheet date.

The recoverable amount is the greater of the fair value less costs to disposal and the value in use. In determining the value in use, expected future cash flows generated by the asset are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. Where an asset does not generate cash inflows largely independent of those from other assets, the recoverable amount is determined for the smallest group of assets that generates cash inflows independently (i.e. a cash-generating unit).

The amount of the reduction is recognized as an expense in the consolidated statement of income. Impairment losses recognized in respect of cash-generating units are allocated first to reduce the carrying amount of any goodwill allocated to the cash-generating unit and then, to reduce the carrying amount of the other assets in the unit on a pro rata basis, except that the carrying value of an asset will not be reduced below its individual fair value less costs to disposal, or value in use, if determinable.

Management assesses at each balance sheet date whether there is any indication that an impairment loss recognized for an asset, except in the case of goodwill, in prior years may no longer exist. An impairment loss is reversed if there has been a favourable change in the estimates used to determine the recoverable amount. A subsequent increase in the recoverable amount of an asset, when the circumstances and events that led to the write-down or write-off cease to exist, is recognized as an income. The reversal is reduced by the amount that would have been recognized as depreciation had the write-down or write-off not occurred. An impairment loss in respect of goodwill is not reversed.

(p) Trade, bills and other payables

Trade, bills and other payables are initially recognized at fair value and thereafter stated at amortized cost unless the effect of discounting would be immaterial, in which case they are stated at cost.

(q) Interest-bearing borrowings

Interest-bearing borrowings are recognized initially at fair value less attributable transaction costs. Subsequent to initial recognition, interest-bearing borrowings are stated at amortized cost with any difference between cost and redemption value being recognized in the consolidated statement of income over the period of borrowings using the effective interest method.

2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(r) Provisions and contingent liability

A provision is recognized for liability of uncertain timing or amount when the Group has a legal or constructive obligation arising as a result of a past event, when it is probable that an outflow of economic benefits will be required to settle the obligation and a reliable estimate can be made.

When it is not probable that an outflow of economic benefits will be required, or the amount cannot be estimated reliably, the obligation is disclosed as a contingent liability, unless the probability of outflow of economic benefits is remote. Possible obligations, whose existence will only be confirmed by the occurrence or non-occurrence of one or more future events are also disclosed as contingent liabilities unless the probability of outflow of economic benefits is remote.

Provisions for future dismantlement costs are initially recognized based on the present value of the future costs expected to be incurred in respect of the Group s expected dismantlement and abandonment costs at the end of related oil and gas exploration and development activities. Any subsequent change in the present value of the estimated costs, other than the change due to passage of time which is regarded as interest cost, is reflected as an adjustment to the provision and oil and gas properties.

(s) Revenue recognition

Revenues arises in the course of the Group s ordinary activities, and increases in economic benefits in the form of inflows that result in an increase in equity, other than those relating to contributions from equity participants.

The Group sells crude oil, natural gas, petroleum and chemical products, etc. Revenue is recogniesd according to the expected consideration amount, when a customer obtains control over the relevant goods or services. To determine whether a customer obtains control of a promised asset, the Group shall consider indicators of the transfer of control, which include, but are not limited to, the Group has a present right to payment for the asset; the Group has transferred physical possession of the asset to the customer; the customer has the significant risks and rewards of ownership of the asset; the customer has accepted the asset.

(i) Sales of goods

Sales are recognized when control of the goods have transferred, being when the products are delivered to the customer. Advance from customers but goods not yet delivered is recorded as contract liabilities and is recognized as revenues when a customer obtains control over the relevant goods.

(ii) Accounting policy applied until December 31, 2017

The Group has applied IFRS 15 retrospectively, but has elected not to restate comparative information. As a result, the comparative information provided continues to be accounted for in accordance with the Group s previous accounting policy.

Revenues associated with the sale of crude oil, natural gas, petroleum and chemical products and ancillary materials are recorded when the customer accepts the goods and the significant risks and rewards of ownership and title have been transferred to the buyer. Revenue from the rendering of services is recognized in the consolidated income statement upon performance of the services. No revenue is recognized if there are significant uncertainties regarding recovery of the consideration due, the possible return of goods, or when the amount of revenue and the costs incurred or to be incurred in respect of the transaction cannot be measured reliably.

2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(t) Government grants

Grants from the government are recognized at their fair value where there is a reasonable assurance that the grant will be received and the group will comply with all attached conditions.

Government grants relating to costs are deferred and recognized in the profit or loss over the period necessary to match them with the costs that they are intended to compensate.

Government grants relating to the purchase of property, plant and equipment are included in non-current liabilities as deferred income and are credited to profit or loss on a straight-line basis over the expected lives of the related assets

(u) Borrowing costs

Borrowing costs are expensed in the consolidated statements of income in the period in which they are incurred, except to the extent that they are capitalized as being attributable to the construction of an asset which necessarily takes a period of time to get ready for its intended use.

(v) Repairs and maintenance expenditure

Repairs and maintenance expenditure is expensed as incurred.

(w) Environmental expenditures

Environmental expenditures that relate to current ongoing operations or to conditions caused by past operations are expensed as incurred.

Liabilities related to future remediation costs are recorded when environmental assessments and/or cleanups are probable and the costs can be reliably estimated. As facts concerning environmental contingencies become known to the Group, the Group reassesses its position both with respect to accrued liabilities and other potential exposures.

(x) Research and development expense

Research and development expenditures that cannot be capitalized are expensed in the period in which they are incurred. Research and development expense amounted to RMB 5,941, RMB 6,423 and RMB 7,956 for the years ended December 31, 2016, 2017 and 2018, respectively.

(y) Operating leases

Operating lease payments are charged to the consolidated statement of income on a straight-line basis over the period of the respective leases.

(z) Employee benefits

The contributions payable under the Group s retirement plans are recognized as an expense in the consolidated statement of income as incurred and according to the contribution determined by the plans. Further information is set out in Note 35.

Termination benefits, such as employee reduction expenses, are recognized when, and only when, the Group demonstrably commits itself to terminate employment or to provide benefits as a result of voluntary redundancy by having a detailed formal plan which is without realistic possibility of withdrawal.

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2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(aa) Income tax

Income tax comprises current and deferred tax. Current tax is calculated on taxable income by applying the applicable tax rates. Deferred tax is provided using the balance sheet liability method on all temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes only to the extent that it is probable that future taxable income will be available against which the assets can be utilized. Deferred tax is calculated on the basis of the enacted tax rates or substantially enacted tax rates that are expected to apply in the period when the asset is realized or the liability is settled. The effect on deferred tax of any changes in tax rates is charged or credited to the consolidated statement of income, except for the effect of a change in tax rate on the carrying amount of deferred tax assets and liabilities which were previously charged or credited to other comprehensive income or directly in equity.

The tax value of losses expected to be available for utilization against future taxable income is set off against the deferred tax liability within the same legal tax unit and jurisdiction to the extent appropriate, and is not available for set off against the taxable profit of another legal tax unit. The carrying amount of a deferred tax asset is reviewed at each balance sheet date and is reduced to the extent that it is no longer probable that the related tax benefit will be realized.

(bb) Dividends

Dividends and distributions of profits proposed in the profit appropriation plan which will be authorized and declared after the balance sheet date, are not recognized as a liability at the balance sheet date and are separately disclosed in the notes to the financial statements. Dividends are recognized as a liability in the period in which they are declared.

(cc) Segment reporting

Operating segments, and the amounts of each segment item reported in the consolidated financial statements, are identified from the financial information provided regularly to the Group s chief operating decision maker for the purposes of allocating resources to, and assessing the performance of the Group s various lines of business.

3. SALES OF GOODS

Sales of goods primarily represents revenue from the sales of crude oil, refined petroleum products, chemical products and natural gas.

	Years ended December 31,		
	2016	2017	2018
	RMB	RMB	RMB
Crude oil	336,732	421,585	519,910
Gasoline	508,912	600,113	711,236
Diesel	447,126	503,406	594,008
Basic chemical feedstock	154,992	205,722	250,884
Kerosene	88,195	115,739	168,823
Synthetic resin	91,518	107,633	124,618
Natural Gas	39,464	34,277	43,205
Synthetic fiber monomers and polymers	38,054	61,998	77,572
Others(i)	175,197	249,997	335,357
	1,880,190	2,300,470	2,825,613

(i) Others are primarily liquefied petroleum gas and other refinery and chemical by-products and joint products.

4. OTHER OPERATING REVENUES

	Years ended December 31,		
	2016	2017	2018
	RMB	RMB	RMB
Sale of materials and others	49,812	58,930	64,503
Rental income	909	793	1,063
	50,721	59,723	65,566

5. SELLING, GENERAL AND ADMINISTRATIVE EXPENSES

The following items are included in selling, general and administrative expenses:

	Years ended December 31,		
	2016	2017	2018
	RMB	RMB	RMB
Operating lease charges	14,410	12,104	12,297
Auditor s remuneration:			
-audit services	73	72	94
-others	2	5	9
Impairment losses			
- trade accounts receivable	230	(51)	6
- other receivables	(12)	159	9
- accounts prepayments	13	2	29

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6. PERSONNEL EXPENSES

	Years ended December 31, 2016 RMB	2017 RMB	2018 RMB
Salaries, wages and other benefits	55,502	65,873	68,425
Contributions to retirement schemes (Note 35)	8,385	8,981	9,296
	63,887	74,854	77,721

7. TAXES OTHER THAN INCOME TAX

	Years ended December 31, 2016 RMB	2017 RMB	2018 RMB
Consumption tax (i)	193,836	192,907	201,901
City construction tax (ii)	18,155	18,274	18,237
Education surcharge	13,695	13,811	13,187
Resources tax	3,871	4,841	6,021
Other	2,449	5,459	7,152
	232,006	235,292	246,498

Note:

(i) Consumption tax was levied based on sales quantities of taxable products, tax rate of products is presented as below:

Products	Effective from January 13, 2015 RMB/Ton
Gasoline	2,109.76
Diesel	1,411.20
Naphtha	2,105.20
Solvent oil	1,948.64
Lubricant oil	1,711.52
Fuel oil	1,218.00
Jet fuel oil	1,495.20

(ii) City construction tax is levied on an entity based on its total paid amount of value-added tax, consumption tax and business tax. Pursuant to the Circular on the Overall Promotion of Pilot Program of Levying VAT in place of Business Tax (Cai Shui [2016] 36) jointly issued by the Ministry of Finance and the State Administration of Taxation, revenue from modern service of the subsidiaries of the Group, are subject to VAT from May 1, 2016, and the applicable tax rate is 6%. Before May 1, 2016, revenue from modern service of the subsidiaries of the Group, are subject to the business tax with a tax rate of 3% to 5%.

8. OTHER OPERATING INCOME/(EXPENSE), NET

	Years ended December 31,		
	2016 RMB	2017 RMB	2018 RMB
Government grant (i)	4,101	4,893	7,539
Ineffective portion of change in fair value of cash flow hedges	304	(813)	(1,978)
Net realized and unrealized gain/(loss) on derivative financial instruments not qualified as hedging	195	(909)	191
Impairment losses on long-lived assets (ii)	(16,425)	(21,258)	(6,281)
Loss on disposal of property, plant, equipment and other non-currents assets, net	(1,489)	(1,518)	(1,526)
Fines, penalties and compensations	(152)	(89)	(276)
Donations	(133)	(152)	(180)
Gain on remeasurement of interests in the Shanghai SECCO (Note 33)		3,941	
Gain on dilution and remeasurement of interests in the Pipeline Ltd	20,562		
Others	(1,277)	(649)	(2,849)
	5,686	(16,554)	(5,360)

Note:

(i) Government grants for the years ended December 31, 2016, 2017 and 2018 primarily represent financial appropriation income and non-income tax refunds received from respective government agencies without conditions or other contingencies attached to the receipts of the grants.

(ii) Impairment losses recognized on long-lived assets of the exploration and production (E&P) segments were RMB 11,605, RMB 13,556 and RMB 4,274 for the years ended December 31, 2016, 2017 and 2018, respectively. The impairment comprised RMB 10,594, RMB 12,611 and RMB 4,274 on property, plant and equipment for the three years respectively, RMB 907 on investment in joint venture for the year ended December 31, 2017, RMB 1,005 and RMB 21 on construction in progress for the years ended December 31, 2016 and 2017, RMB 6 on goodwill for the year ended December 31, 2016, and RMB 17 on available for sale financial assets for the year ended December 31, 2017. The primary factor resulting in the E&P segment impairment loss for the years ended December 31, 2018 was downward revision of oil and gas reserve in certain fields. The carrying values of these E&P properties were written down to respective recoverable amounts which were determined based on the present values of the expected future cash flows of the asset using a pre-tax discount rate of 10.47%, 10.47% and 10.47% for the years ended December 31, 2016, 2017 and 2018, respectively. Further future downward revisions to the Group s oil price outlook would lead to further impairments which, in aggregate, are likely to be material. It is estimated that a general decrease of 5% in oil price, with all other variables held constant, would result in additional impairment loss on the Group s properties, plant and equipment relating to oil and gas producing activities by approximately RMB 312. It is estimated that a general increase of 5% in operating cost, with all other variables held constant, would result in additional impairment loss on the Group s properties, plant and equipment relating to oil and gas producing activities by approximately RMB 315. It is estimated that a general increase of 5% in discount rate, with all other variables held constant, would result in less impairment loss on the Group s properties, plant and equipment relating to oil and gas producing activities by approximately RMB 5. The primary factors resulting in the E&P segment impairment loss for the years ended

December 31, 2016 and 2017 were downward revision of oil and gas reserve due to price change and high operating and development cost for certain oil fields.

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8. OTHER OPERATING/INCOME (EXPENSE), NET *(Continued)*

Impairment losses recognized for the chemicals segment were RMB 2,898, RMB 4,922 and RMB 1,374 for the years ended December 31, 2016, 2017 and 2018, respectively, and comprised of impairment losses of RMB 2,840, RMB 4,779 and RMB 1,252 on property, plant and equipment for the years ended December 31, 2016, 2017 and 2018, respectively, RMB 58, RMB 143 and RMB 25 on construction in progress for the years ended December 31, 2016, 2017 and 2018, respectively, and RMB 97 on entrusted loans for the year ended December 31, 2018. Impairment losses recognized for the refining segment were RMB 1,655, RMB 1,894 and RMB 353 for the years ended December 31, 2016, 2017 and 2018, respectively, and comprised of impairment losses of RMB 1,245, RMB 1,836 and RMB 353 on property, plant and equipment for the years ended December 31, 2016, 2017 and 2018, respectively, RMB 410 and RMB 47 on construction in progress for the years ended December 31, 2016 and 2017, respectively, RMB 1 on intangible assets and RMB 10 for investment in associates for the year ended December 31, 2017. These impairment losses relate to certain refining and chemicals production facilities that are held for use for the years ended December 31, 2016, 2017 and 2018. The carrying values of these facilities were written down to their recoverable amounts that were primarily determined based on the asset held for use model using the present value of estimated future cash flows of the production facilities using the pre-tax discount rates for the years ended December 31, 2016, 2017 and 2018, respectively. The primary factor resulting in the impairment losses on long-lived assets of the refining and chemicals segment for the years ended December 31, 2016, 2017 and 2018, were due to the suspension of operations of certain production facilities. Evidence indicates the economic performance of certain production facilities are worse than expected also contributed to the written down of assets in the chemical segments for the years ended December 31, 2017 and 2018.

Impairment losses recognized on long-lived assets of the marketing and distribution segment were RMB 267, RMB 675 and RMB 264 for the years ended December 31, 2016, 2017 and 2018 respectively. The impairment comprised of impairment losses of RMB 242, RMB 597 and RMB 254 on property, plant and equipment for the years ended December 31, 2016, 2017 and 2018, respectively, impairment losses of RMB 1, RMB 19 and RMB 7 on investments in associates and joint ventures for the years ended December 31, 2016, 2017 and 2018, respectively, impairment losses of RMB 13, RMB 41 and RMB 3 on construction in progress for the year ended December 31, 2016, 2017 and 2018, impairment losses of RMB 11 and RMB 12 on lease prepayments for the year ended December 31, 2016 and 2017, and impairment losses of RMB 6 on intangible assets for the year ended December 31, 2017, primarily relate to certain service stations and certain construction in progress that were closed or abandoned during respective years. In measuring the amounts of impairment charges, the carrying amounts of these assets were compared to the present value of the expected future cash flows of the assets, as well as information about sales and purchases of similar properties in the same geographic area.

Impairment loss recognized on long-lived assets of the corporate and others segment was RMB 211 and RMB 16 for the years ended December 31, 2017 and 2018. The impairment comprised of impairment loss of RMB 13 and RMB 16 on property, plant and equipment for the years ended December 31, 2017 and 2018, and impairment of RMB 198 on goodwill for the year ended December 31, 2017.

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9. INTEREST EXPENSE

	Years ended December 31, 2016 RMB	2017 RMB	2018 RMB
Interest expense incurred	9,021	6,368	6,376
Less: Interest expense capitalized*	(859)	(723)	(493)
	8,162	5,645	5,883
Accretion expenses (Note 30)	1,057	1,501	1,438
Interest expense	9,219	7,146	7,321

* Interest rates per annum at which borrowing costs were capitalized for construction in progress	2.65% to 4.82%	2.37% to 4.41%	2.37% to 4.66%

10 INCOME TAX EXPENSE

Income tax expense in the consolidated statement of income represents:

	Years ended December 31, 2016 RMB	2017 RMB	2018 RMB
Current tax			
- Provision for the year	21,313	26,668	27,176
- Adjustment of prior years	228	(72)	(719)
Deferred taxation (Note 23)	(834)	(10,317)	(6,244)
	20,707	16,279	20,213

Reconciliation between actual income tax expense and the expected income tax expense at applicable statutory tax rates is as follows:

	Years ended December 31, 2016 RMB	2017 RMB	2018 RMB
Earnings before income tax	80,151	86,697	99,110
Expected PRC income tax expense at a statutory tax rate of 25%	20,038	21,674	24,778
Tax effect of preferential tax rate (Note i)	83	(793)	(1,259)
Effect of income taxes at foreign operations	299	(1,394)	77
Tax effect of non-deductible expenses	1,529	1,905	2,351
Tax effect of non-taxable income	(2,786)	(5,939)	(5,033)
Tax effect of utilization of previously unrecognized tax losses and temporary differences	(453)	(613)	(779)
Tax effect of tax losses not recognized	958	1,485	609
Write-down of deferred tax assets	811	26	188
Adjustment of prior years	228	(72)	(719)
Actual income tax expense	20,707	16,279	20,213

Note:

(i) The provision for PRC current income tax is based on a statutory income tax rate of 25% of the assessable income of the Group as determined in accordance with the relevant income tax rules and regulations of the PRC, except for certain entities of the Group in western regions in the PRC are taxed at preferential income tax rate of 15% through the year 2020.

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11. OTHER COMPREHENSIVE INCOME

	Years ended December 31,								
	2016			2017			2018		
	Before-tax amount RMB	Tax effect RMB	Net-of-tax amount RMB	Before-tax amount RMB	Tax effect RMB	Net-of-tax amount RMB	Before-tax amount RMB	Tax effect RMB	Net-of-tax amount RMB
Cash flow hedges:									
Effective portion of changes in fair value of hedging instruments recognized during the year	(3,813)	652	(3,161)	(1,314)	240	(1,074)	(12,500)	2,159	(10,341)
Amounts transferred to initial carrying amount of hedged items	13	(2)	11	(4)	1	(3)			
Reclassification adjustments for amounts transferred to the consolidated statement of income	6,279	(1,115)	5,164	(575)	72	(503)	730	(130)	600
Net movement during the year recognized in other comprehensive income (i)	**2,479**	**(465)**	**2,014**	**(1,893)**	**313**	**(1,580)**	**(11,770)**	**2,029**	**(9,741)**
Available-for-sale financial assets:									
Changes in fair value recognized during the year	(17)	(7)	(24)	(57)		(57)			
Changes in the fair value of instruments at fair value through other comprehensive income							(41)	(12)	(53)
Net movement during the year recognized in other comprehensive income	**(17)**	**(7)**	**(24)**	**(57)**		**(57)**	**(41)**	**(12)**	**(53)**
Share of other comprehensive income/(loss) of associates and joint ventures	45		45	1,053		1,053	(240)	11	(229)
Foreign currency translation differences	4,298		4,298	(3,792)		(3,792)	3,399		3,399
Other comprehensive income	**6,805**	**(472)**	**6,333**	**(4,689)**	**313**	**(4,376)**	**(8,652)**	**2,028**	**(6,624)**

(i) As of December 31, 2017 and 2018, cash flow hedge reserve amounted to losses of RMB 460 and 4,932, respectively, of which losses of RMB 510 and 4,917 were attribute to owners of the company.

12. BASIC AND DILUTED EARNINGS PER SHARE

The calculation of basic earnings per share for the years ended December 31, 2016, 2017 and 2018 is based on the net income attributable to ordinary owners of the Company of RMB 46,672, RMB 51,244 and RMB 61,618, respectively, and the weighted average number of shares of 121,071,209,646, 121,071,209,646 and 121,071,209,646, respectively.

The calculation of diluted earnings per share for the years ended December 31, 2016, 2017 and 2018 is based on the net income attributable to ordinary owners of the Company (diluted) of RMB 46,669, RMB 51,242 and RMB 61,618, respectively, and the weighted average number of shares of 121,071,209,646, 121,071,209,646 and 121,071,209,646, respectively, calculated as follows:

(i) Net income attributable to ordinary owners of the Company (diluted)

	2016 RMB	2017 RMB	2018 RMB
Net income attributable to ordinary owners of the Company	46,672	51,244	61,618
After tax effect of employee share option scheme of Shanghai Petrochemical	(3)	(2)	
Net income attributable to ordinary owners of the Company (diluted)	46,669	51,242	61,618

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12. BASIC AND DILUTED EARNINGS PER SHARE *(Continued)*

(ii) Weighted average number of shares (diluted)

	2016 Number of shares	2017 Number of shares	2018 Number of shares
Weighted average number of shares as of December 31	121,071,209,646	121,071,209,646	121,071,209,646
Weighted average number of shares (diluted) as of December 31	121,071,209,646	121,071,209,646	121,071,209,646

13. FINANCIAL ASSETS AT FAIR VALUE THROUGH PROFIT OR LOSS

	December 31, 2017 RMB	December 31, 2018 RMB
Structured deposit	51,196	25,550
Equity investments, listed and at quoted market price		182
	51,196	25,732

The financial assets are the structured deposit with financial institutions, which are presented as current assets since they are expected to be expired within 12 months from the end of the reporting period.

14. DERIVATIVES FINANCIAL ASSETS AND DERIVATIVES FINANCIAL LIABILITIES

Derivative financial assets and derivative financial liabilities of the Group are primarily commodity futures and swaps. See Note 38.

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15. TRADE ACCOUNTS RECEIVABLE AND BILLS RECEIVABLE

	December 31, 2017 RMB	December 31, 2018 RMB
Amounts due from third parties	56,203	50,108
Amounts due from Sinopec Group Company and fellow subsidiaries	7,941	3,170
Amounts due from associates and joint ventures	4,962	4,321
	69,106	57,599
Less: Impairment losses for bad and doubtful debts	(612)	(606)
Trade accounts receivable, net	68,494	56,993
Bills receivable	16,207	7,886
	84,701	64,879

The ageing analysis of trade accounts and bills receivables (net of impairment losses for bad and doubtful debts) is as follows:

	December 31, 2017 RMB	December 31, 2018 RMB
Within one year	83,984	64,317
Between one and two years	573	353
Between two and three years	43	124
Over three years	101	85
	84,701	64,879

Impairment losses for bad and doubtful debts are analyzed as follows:

	2016 RMB	2017 RMB	2018 RMB
Balance as of January 1	525	683	612
Provision for the year	238	49	83
Written back for the year	(8)	(100)	(77)
Written off for the year	(72)	(21)	(19)
Others		1	7
Balance as of December 31	683	612	606

Sales are generally on a cash term. Credit is generally only available for major customers with well-established trading records. Amounts due from Sinopec Group Company and fellow subsidiaries are repayable under the same terms.

Trade accounts receivable and bills receivables (net of impairment losses for bad and doubtful debts) primarily represent receivables that are neither past due nor impaired. These receivables relate to a wide range of customers for whom there is no recent history of default.

Information about the impairment of trade accounts receivable and the Group s exposure to credit risk can be found in Note 38.

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16. INVENTORIES

	December 31, 2017 RMB	2018 RMB
Crude oil and other raw materials	85,975	85,469
Work in progress	14,774	13,690
Finished goods	84,448	88,929
Spare parts and consumables	2,651	2,872
	187,848	190,960
Less: Allowance for diminution in value of inventories	(1,155)	(6,376)
	186,693	184,584

Allowance for diminution in value of inventories is analyzed as follows:

	2016 RMB	2017 RMB	2018 RMB
Balance as of January 1	4,402	920	1,155
Allowance for the year	430	436	5,535
Reversal of allowance on disposal	(10)	(13)	(114)
Written off	(4,021)	(190)	(217)
Other increase	119	2	17
Balance as of December 31	920	1,155	6,376

During the years ended December 31, 2016, 2017 and 2018, costs of inventories recognized as an expense in the consolidated statement of income were RMB 1,461,285, RMB 1,854,629, and RMB 2,366,199, respectively. Such costs include the write-down of inventories of RMB 430, RMB 436, and RMB 5,535, respectively, and the reversal of write-down of inventories of RMB 10, RMB 13 and RMB 114, respectively. The write-down of inventories and the reversal of write-down of inventories were recorded in purchased crude oil, products and operating supplies and expenses in the consolidated statement of income. The write-down of inventories which were realized primarily with the sales of inventories for the year ended December 31, 2016, 2017 and 2018 were RMB 4,021, RMB 190 and RMB 217. The write-down of inventories for the year ended December 31, 2018 is mainly related to crude oil, finished goods and work in progress of refined oil products and chemical products.

17. PREPAID EXPENSES AND OTHER CURRENT ASSETS

	December 31, 2017 RMB	2018 RMB
Other receivables	17,704	26,455
Advances to suppliers	4,901	5,937
Value-added input tax to be deducted	17,926	21,331
Prepaid income tax	398	300
	40,929	54,023

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18. PROPERTY, PLANT AND EQUIPMENT

	Plants and buildings RMB	Oil and gas properties RMB	Equipment, machinery and others RMB	Total RMB
Cost:				
Balance as of January 1, 2017	114,920	650,685	892,936	1,658,541
Additions	854	1,627	11,983	14,464
Transferred from construction in progress	6,789	19,881	54,605	81,275
Reclassifications	(673)	(50)	723	
Reclassification to lease prepayments and other long-term assets	(859)	(1,702)	(8,751)	(11,312)
Disposals	(878)	(211)	(10,985)	(12,074)
Exchange adjustments	(140)	(2,573)	(199)	(2,912)
Balance as of December 31, 2017	**120,013**	**667,657**	**940,312**	**1,727,982**
Balance as of January 1, 2018	120,013	667,657	940,312	1,727,982
Additions	221	1,567	3,856	5,644
Transferred from construction in progress	3,741	24,366	45,103	73,210
Reclassifications	1,634	138	(1,772)	
Reclassification to lease prepayments and other long-term assets	(483)		(3,828)	(4,311)
Disposals	(3,183)	(146)	(18,323)	(21,652)
Exchange adjustments	98	2,142	147	2,387
Balance as of December 31, 2018	**122,041**	**695,724**	**965,495**	**1,783,260**
Accumulated depreciation:				
Balance as of January 1, 2017	48,572	435,561	483,814	967,947
Depreciation for the year	4,075	55,057	46,585	105,717
Impairment losses for the year	554	8,832	10,450	19,836
Reclassifications	(122)	(77)	199	
Reclassification to lease prepayments and other long-term assets	(238)	(1,305)	(2,682)	(4,225)
Disposals	(584)	(195)	(9,079)	(9,858)
Exchange adjustments	(57)	(2,056)	(96)	(2,209)
Balance as of December 31, 2017	**52,200**	**495,817**	**529,191**	**1,077,208**
Balance as of January 1, 2018	52,200	495,817	529,191	1,077,208
Depreciation for the year	4,038	48,616	47,250	99,904
Impairment losses for the year	274	4,027	1,848	6,149
Reclassifications	494	76	(570)	
Reclassification to lease prepayments and other long-term assets	(120)		(1,390)	(1,510)
Disposals	(1,795)	(125)	(16,331)	(18,251)
Exchange adjustments	43	1,877	78	1,998
Balance as of December 31, 2018	55,134	550,288	560,076	1,165,498
Net book value:				
Balance as of January 1, 2017	66,348	215,124	409,122	690,594
Balance as of December 31, 2017	**67,813**	**171,840**	**411,121**	**650,774**
Balance as of December 31, 2018	**66,907**	**145,436**	**405,419**	**617,762**

Note:

The additions to the oil and gas properties of the Group for the years ended December 31, 2017 and 2018 included RMB 1,627 and RMB 1,567 respectively, of the estimated dismantlement costs for site restoration (Note 30).

As of December 31, 2017 and 2018, the Group had no individually significant fixed assets which were pledged.

As of December 31, 2017 and 2018, the Group had no individually significant fixed assets which were temporarily idle or pending for disposal.

As of December 31, 2017 and 2018, the Group had no individually significant fully depreciated fixed assets which were still in use.

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19. CONSTRUCTION IN PROGRESS

	2017 RMB	2018 RMB
Balance as of January 1	129,581	118,645
Additions	85,552	108,555
Dry hole costs written off	(6,876)	(6,921)
Transferred to property, plant and equipment	(81,229)	(73,210)
Reclassification to lease prepayments and other long-term assets	(7,773)	(10,066)
Impairment losses for the year	(252)	(28)
Disposals	(315)	(19)
Exchange adjustments	(43)	7
Balance as of December 31	118,645	136,963

Net changes in capitalized cost of exploratory wells included in the Group s construction in progress in the E&P segment are analyzed as follows:

	2016 RMB	2017 RMB	2018 RMB
At beginning of year	16,772	12,192	9,737
Additions, net of amount that were capitalized and subsequently expensed in the same year, pending the determination of proved reserves	6,321	5,567	7,172
Transferred to oil and gas properties based on the determination of proved reserves	(3,716)	(1,839)	(2,387)
Dry hole costs written off	(7,185)	(6,183)	(7,226)
At end of year	12,192	9,737	7,296

Aging of capitalized exploratory well costs based on the date the drilling was completed are analyzed as follows:

		December 31,	
	2016 RMB	2017 RMB	2018 RMB
One year or less	4,731	4,917	3,467
Over one year	7,461	4,820	3,829
	12,192	9,737	7,296

Capitalized exploratory wells costs aged over one year are related to wells for which the drilling results are being further evaluated or the development plans are being formulated.

The geological and geophysical costs paid during the years ended December 31, 2016, 2017 and 2018 amounted to RMB 2,899, RMB 3,710 and RMB3,511, respectively.

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20. GOODWILL

	December 31, 2017 RMB	2018 RMB
Cost	16,495	16,537
Less: Accumulated impairment losses	(7,861)	(7,861)
	8,634	8,676

Impairment tests for cash-generating units containing goodwill

Goodwill is allocated to the following Group s cash-generating units:

	Principal activities	December 31, 2017 RMB	2018 RMB
Sinopec Beijing Yanshan Petrochemical Branch (Sinopec Yanshan)	Manufacturing of intermediate petrochemical products and petroleum products	1,004	1,004
Sinopec Zhenhai Refining and Chemical Branch (Sinopec Zhenhai)	Manufacturing of intermediate petrochemical products and petroleum products	4,043	4,043
Shanghai SECCO Petrochemical Company Limited (Shanghai SECCO)(Note 33)	Production and sale of petrochemical products	2,541	2,541
Sinopec (Hong Kong) Limited	Trading of petrochemical products	879	921
Other units without individually significant goodwill		167	167
		8,634	8,676

Goodwill represents the excess of the cost of purchase over the fair value of the underlying assets and liabilities. The recoverable amounts of the above cash generating units are determined based on value in use calculations. These calculations use cash flow projections based on financial budgets approved by management covering a one-year period and pre-tax discount rates primarily ranging from 10.8% to 11.4% and 11.7% to 12.3% for the years ended December 31, 2017 and 2018, respectively. Cash flows beyond the one-year period are maintained constant. Based on the estimated recoverable amount, no major impairment loss was recognized.

Key assumptions used for cash flow forecasts for these entities are the gross margin and sales volume. Management determined the budgeted gross margin based on the gross margin achieved in the period immediately before the budget period and management s expectation on the future trend of the prices of crude oil and petrochemical products. The sales volume was based on the production capacity and/or the sales volume in the period immediately before the budget period.

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21. INTEREST IN ASSOCIATES

The Group s investments in associates are with companies primarily engaged in the oil and gas, petrochemical, and marketing and distribution operations in the PRC.

The Group s principal associates are as follows:

Name of company	Form of business structure	Particulars of issued and paid up capital	Percentage of equity held by the Company %	Percentage of equity held by the Company s subsidiaries %	Principal activities	Country of incorporation	Principal place of business
Sinopec Sichuan to East China Gas Pipeline Co., Ltd. (Pipeline Ltd)	Incorporated	Registered capital RMB 200 million		50.00	Operation of natural gas pipelines and auxiliary facilities	PRC	PRC
Sinopec Finance Company Limited (Sinopec Finance)	Incorporated	Registered capital RMB 18,000 million	49.00		Provision of non-banking financial services	PRC	PRC
PAO SIBUR Holding(SIBUR)	Incorporated	Registered capital RUB 21,784 million		10.00	Processing natural gas and manufacturing petrochemical products	Russia	Russia
Zhongtian Synergetic Energy Company Limited (Zhongtian Synergetic Energy)	Incorporated	Registered capital RMB 17,516 million		38.75	Mining coal and manufacturing of coal-chemical products	PRC	PRC
Caspian Investments Resources Ltd. (CIR)	Incorporated	Registered capital USD 10,000		50.00	Crude oil and natural gas extraction	British Virgin Islands	The Republic of Kazakhstan

Summarized financial information and reconciliation to their carrying amounts in respect of the Group s principal associates:

	Pipeline Ltd December 31,		Sinopec Finance December 31,		SIBUR (i) December 31,		Zhongtian Synergetic Energy December 31,		CIR December 31,	
	2017 RMB	2018 RMB	2017 RMB	2018 RMB	2017 RMB	2018 RMB	2017 RMB	2018 RMB	2017 RMB	2018 RMB
Current assets	11,317	12,498	161,187	209,837	20,719	22,502	8,232	7,477	5,612	6,712
Non-current assets	40,972	39,320	17,782	16,359	158,938	170,796	51,553	49,961	1,673	1,828

Current liabilities	(933)	(1,020)	(154,212)	(200,402)	(20,554)	(23,293)	(10,668)	(7,252)	(908)	(961)
Non-current liabilities	(3,176)	(3,026)	(6)	(332)	(61,771)	(58,628)	(31,494)	(31,436)	(170)	(673)
Net assets	48,180	47,772	24,751	25,462	97,332	111,377	17,623	18,750	6,207	6,906
Net assets attributable to owners of the Company	48,180	47,772	24,751	25,462	96,761	110,860	17,623	18,750	6,207	6,906
Net assets attributable to non-controlling interests					571	517				
Share of net assets from associates	24,090	23,886	12,128	12,476	9,676	11,086	6,829	7,266	3,104	3,453
Carrying Amounts	24,090	23,886	12,128	12,476	9,676	11,086	6,829	7,266	3,104	3,453

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21. INTEREST IN ASSOCIATES *(Continued)*

Summarized statement of comprehensive income

Year ended December 31	Pipeline Ltd (ii)			Sinopec Finance			SIBUR(i)		Zhongtian Synergetic Energy			CIR		
	2016 RMB	2017 RMB	2018 RMB	2016 RMB	2017 RMB	2018 RMB	2017 RMB	2018 RMB	2016 RMB	2017 RMB	2018 RMB	2016 RMB	2017 RMB	2018 RMB
Operating revenues	191	5,644	4,746	2,442	3,542	4,536	52,496	59,927		3,569	12,235	2,205	2,563	2,856
Net income/(loss) for the year	51	2,543	2,022	1,526	1,536	1,868	9,601	10,400		123	1,142	(3,518)	(610)	583
Other comprehensive (loss)/income				(175)	(246)	(157)	(260)	6,410				662	(334)	116
Total comprehensive income/(loss)	51	2,543	2,022	1,351	1,290	1,711	9,341	16,810		123	1,142	(2,856)	(944)	699
Dividends declared by associates	23		1,207			490	221	271						
Share of net income/(loss) from associates	26	1,272	1,011	748	753	915	960	1,040		48	443	(1,759)	(305)	292
Share of other comprehensive (loss)/income from associates (ii)				(86)	(121)	(77)	(26)	641				331	(167)	58

The share of net income for years ended December 31, 2016, 2017 and 2018 in all individually immaterial associates accounted for using equity method in aggregate were RMB 2,869, RMB 3,182 and RMB 3,550, respectively.

The share of other comprehensive (loss)/income for the years ended December 31, 2016, 2017 and 2018 in all individually immaterial associates accounted for using equity method in aggregate were a loss of RMB 384, a gain of RMB 569 and a loss of RMB 844, respectively.

The carrying amount as of December 31, 2017 and 2018 of all individually immaterial associates accounted for using equity method in aggregate were RMB 23,899 and RMB 31,370, respectively.

Note:

(i) Sinopec is able to exercise significant influence in SIBUR since Sinopec has a member in SIBUR s Board of Director and has a member in SIBUR s Management Board.

(ii) Including foreign currency translation differences.

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22. INTEREST IN JOINT VENTURES

The Group s principal interests in joint ventures which are incorporated companies are as follows:

Name of company	Country of incorporation	Particulars of issued and paid up capital	Percentage of equity held by the Company %	Percentage of equity held by the Company s subsidiaries %	Principal activities	Principal place of business
Fujian Refining & Petrochemical Company Limited (FREP)	PRC	Registered capital RMB 14,758 million		50.00	Manufacturing refining oil products	PRC
BASF-YPC Company Limited (BASF-YPC)	PRC	Registered capital RMB 12,547 million	30.00	10.00	Manufacturing and distribution of petrochemical products	PRC
Taihu Limited (Taihu)	Cyprus	Registered capital USD 25,000		49.00	Crude oil and natural gas extraction	Russia
Yanbu Aramco Sinopec Refining Company Ltd. (YASREF)	Saudi Arabia	Registered capital USD 1,560 million		37.50	Petroleum refining and processing business	Saudi Arabia
Sinopec SABIC Tianjin Petrochemical Company Limited (Sinopec SABIC Tianjin)	PRC	Registered capital RMB 9,796 million		50.00	Manufacturing and distribution of petrochemical products	PRC

Summarized balance sheet and reconciliation to their carrying amounts in respect of the Group s principal joint ventures:

	FREP December 31,		BASF-YPC December 31,		Taihu December 31,		YASREF December 31,		Sinopec SABIC Tianjin December 31,	
	2017 RMB	2018 RMB	2017 RMB	2018 RMB	2017 RMB	2018 RMB	2017 RMB	2018 RMB	2017 RMB	2018 RMB
Current assets										
Cash and cash equivalents	5,772	7,388	1,800	1,582	2,352	3,406	4,916	930	6,524	5,110
Other current assets	11,013	9,248	5,335	5,795	2,462	3,689	10,816	10,267	2,709	4,007
Total current assets	16,785	16,636	7,135	7,377	4,814	7,095	15,732	11,197	9,233	9,117
Non-current assets	19,740	19,271	12,075	11,086	7,978	9,216	51,553	51,873	13,248	13,990
Current liabilities										
Current financial liabilities	(1,135)	(1,200)	(233)	(725)	(20)	(59)	(5,407)	(4,806)	(1,236)	(500)
Other current liabilities	(5,049)	(4,939)	(1,982)	(1,822)	(1,914)	(2,124)	(11,864)	(12,217)	(4,546)	(2,507)
Total current liabilities	(6,184)	(6,139)	(2,215)	(2,547)	(1,934)	(2,183)	(17,271)	(17,023)	(5,782)	(3,007)
Non-current liabilities										
Non-current financial liabilities	(13,654)	(12,454)	(955)	(218)	(72)	(72)	(35,619)	(32,364)	(4,101)	(3,651)
Other non-current liabilities	(236)	(279)	(19)	(17)	(2,686)	(2,271)	(890)	(937)	(41)	(331)
Total non-current liabilities	(13,890)	(12,733)	(974)	(235)	(2,758)	(2,343)	(36,509)	(33,301)	(4,142)	(3,982)
Net assets	16,451	17,035	16,021	15,681	8,100	11,785	13,505	12,746	12,557	16,118
	16,451	17,035	16,021	15,681	7,818	11,373	13,505	12,746	12,557	16,118

Net assets attributable to owners of the company										
Net assets attributable to non-controlling interests					282	412				
Share of net assets from joint ventures	8,226	8,518	6,409	6,272	3,831	5,573	5,064	4,780	6,279	8,059
Carrying Amounts	8,226	8,518	6,409	6,272	3,831	5,573	5,064	4,780	6,279	8,059

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22. INTEREST IN JOINT VENTURES *(Continued)*

Summarized statement of comprehensive income

Year ended December 31,	FREP 2016 RMB	FREP 2017 RMB	FREP 2018 RMB	BASF-YPC 2016 RMB	BASF-YPC 2017 RMB	BASF-YPC 2018 RMB	Taihu 2016 RMB	Taihu 2017 RMB	Taihu 2018 RMB	YASREF 2016 RMB	YASREF 2017 RMB	YASREF 2018 RMB	Sinopec SABIC Tianjin 2016 RMB	Sinopec SABIC Tianjin 2017 RMB	Sinopec SABIC Tianjin 2018 RMB
Operating revenues	41,764	49,356	52,469	17,323	21,020	21,574	9,658	12,520	14,944	41,286	61,587	77,561	16,337	22,286	23,501
Depreciation, depletion and amortization	(52)	(16)	(2,250)	(2,275)	(1,793)	(1,521)	(1,043)	(715)	(664)	(2,754)	(2,763)	(2,823)	(33)	(36)	(1,104)
Interest income	130	208	157	19	36	41	40	142	141	33	45	101	30	104	169
Interest expense	(929)	(857)	(647)	(173)	(71)	(43)	(113)	(142)	(151)	(1,216)	(1,382)	(1,382)	(245)	(223)	(167)
Earning/(loss) before income tax	6,476	6,977	3,920	2,606	4,565	3,625	2,411	1,697	3,493	28	548	(1,569)	3,184	5,113	3,916
Tax expense	(1,574)	(1,699)	(935)	(648)	(1,151)	(897)	(518)	(553)	(729)	56	57	(249)	(783)	(1,279)	(993)
Net income/(loss) for the year	4,902	5,278	2,985	1,958	3,414	2,728	1,893	1,144	2,764	84	605	(1,818)	2,401	3,834	2,923
Other comprehensive income/(loss)							1,851	25	921	647	(554)	1,059			
Total comprehensive income/(loss)	**4,902**	**5,278**	**2,985**	**1,958**	**3,414**	**2,728**	**3,744**	**1,169**	**3,685**	**731**	**51**	**(759)**	**2,401**	**3,834**	**2,923**
Dividends declared by joint ventures		1,250	1,200	155	1,109	1,226							300	1,375	
Share of net income/(loss) from joint ventures	2,451	2,639	1,493	783	1,366	1,091	895	541	1,307	31	227	(682)	1,201	1,917	1,462
Share of other comprehensive income/(loss) from joint ventures							875	12	435	243	(208)	397			

The share of net income for the years ended December 31, 2016, 2017 and 2018 in all individually immaterial joint ventures accounted for using equity method in aggregate were RMB 2,061, RMB 3,925 and RMB 2,052, respectively.

The share of other comprehensive (loss)/income for the years ended December 31, 2016, 2017 and 2018 in all individually immaterial joint ventures accounted for using equity method in aggregate were a loss of RMB 934, a gain of RMB 994 and a loss of RMB 839, respectively.

The carrying amount as of year ended December 31, 2017 and 2018 of all individually immaterial joint ventures accounted for using equity method in aggregate were RMB 21,552 and RMB 22,982, respectively.

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23. DEFERRED TAX ASSETS AND LIABILITIES

Deferred tax assets and deferred tax liabilities before offset are attributable to the items detailed in the table below:

	Assets December 31,		Liabilities December 31,	
	2017 RMB	2018 RMB	2017 RMB	2018 RMB
Receivables and inventories	381	2,563		
Payables	1,925	1,808		
Cash flow hedges	165	1,131	(50)	(27)
Property, plant and equipment	14,150	15,427	(9,928)	(8,666)
Tax losses carried forward	2,325	3,709		
Available-for-sale financial assets	117			
Financial assets at fair value through other comprehensive income		117		(1)
Intangible assets	227	474	(563)	(535)
Others	180	174	(264)	(428)
Deferred tax assets/(liabilities)	19,470	25,403	(10,805)	(9,657)

As of December 31, 2017 and 2018, certain subsidiaries of the Company did not recognize deferred tax of deductible loss carried forward of RMB 20,821 and RMB18,308 , respectively, of which RMB 5,938 and RMB 2,437 were incurred for the years ended December 31, 2017 and 2018, respectively, because it was not probable that the future taxable profits will be realized. These deductible tax losses carried forward of RMB 2,373, RMB 3,887, RMB 3,673, RMB 5,938 and RMB 2,437 will expire in 2019, 2020, 2021, 2022,2023 and after, respectively.

Periodically, management performed assessment on the probability that future taxable profit will be available over the period which the deferred tax assets can be realized or utilized. In assessing the probability, both positive and negative evidence was considered, including whether it is probable that the operations will have sufficient future taxable profits over the periods which the deferred tax assets are deductible or utilized and whether the tax losses result from identifiable causes which are unlikely to recur. During the years ended December 31, 2017 and 2018, write-down of deferred tax assets amounted to RMB 26 and RMB 188(Note 10).

23. DEFERRED TAX ASSETS AND LIABILITIES *(Continued)*

Movements in the deferred tax assets and liabilities are as follows:

	Balance as of January 1, 2016 RMB	Recognized in consolidated statement of income RMB	Recognized in other comprehensive income RMB	Others RMB	Balance as of December 31, 2016 RMB
Receivables and inventories	1,552	(1,505)	6	34	87
Payables	413	(22)			391
Cash flow hedges	250		(465)		(215)
Property, plant and equipment	(9,131)	6,063	(392)	109	(3,351)
Tax losses carried forward	5,883	(3,426)	20		2,477
Available-for-sale financial assets		(139)	(7)	146	
Intangible assets	203	(1)		58	260
Others	40	(136)			(96)
Net deferred tax (liabilities)/assets	(790)	834	(838)	347	(447)

	Balance as of January 1, 2017 RMB	Recognized in consolidated statement of income RMB	Recognized in other comprehensive income RMB	Others RMB	Acquisition of Shanghai SECCO RMB	Balance as of December 31, 2017 RMB
Receivables and inventories	87	300	(5)	(1)		381
Payables	391	1,534				1,925
Cash flow hedges	(215)	9	313	8		115
Property, plant and equipment	(3,351)	8,475	287	(8)	(1,181)	4,222
Tax losses carried forward	2,477	(135)	(17)			2,325
Available-for-sale financial assets		117				117
Intangible assets	260	(27)			(569)	(336)
Others	(96)	44	4		(36)	(84)
Net deferred tax (liabilities)/assets	(447)	10,317	582	(1)	(1786)	8,665

	Balance as of January 1, 2018 RMB	Recognized in consolidated statement of income RMB	Recognized in other comprehensive income RMB	Others RMB	Transferred from reserve RMB	Balance as of December 31, 2018 RMB
Receivables and inventories	381	2,176	3	3		2,563
Payables	1,925	(117)				1,808
Cash flow hedges	115	(10)	2,029	1	(1,031)	1,104
Property, plant and equipment	4,222	2,650	(130)	19		6,761
Tax losses carried forward	2,325	1,414	6	(36)		3,709
Available-for-sale financial assets	117			(117)		
Financial assets at fair value through other comprehensive income			(1)	117		116
Intangible assets	(336)	273		2		(61)
Others	(84)	(142)	(2)	(26)		(254)
Net deferred tax assets/(liabilities)	8,665	6,244	1,905	(37)	(1,031)	15,746

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24. LEASE PREPAYMENTS

	2017 RMB	2018 RMB
Cost:		
Balance as of January 1	68,467	75,728
Additions	2,614	249
Transferred from construction in progress	4,151	7,829
Transferred from other long-term assets	3,987	1,402
Reclassification to other assets	(2,603)	(544)
Disposals	(531)	(152)
Exchange adjustments	(357)	219
Balance as of December 31	75,728	84,731
Accumulated amortization:		
Balance as of January 1	14,226	17,202
Amortization charge for the year	2,076	2,519
Transferred from other long-term assets	2,027	617
Reclassification to other assets	(770)	(154)
Disposals	(266)	(31)
Exchange adjustments	(91)	64
Balance as of December 31	17,202	20,217
Net book value:	58,526	64,514

25. LONG-TERM PREPAYMENTS AND OTHER ASSETS

	December 31,	
	2017 RMB	2018 RMB
Operating rights of service stations	34,268	34,934
Long-term receivables from and prepayment to Sinopec Group Company and fellow subsidiaries	20,726	26,513
Prepayments for construction projects to third parties	4,999	5,502
Others (i)	21,989	24,459
Balance as of December 31	81,982	91,408

Note:

(i) Others mainly comprise prepaid operating lease charges and catalyst expenditures.

The cost of operating rights of service stations is charged to expense on a straight-line basis over the respective periods of the rights. The movement of operating rights of service stations is as follows:

	2017 RMB	2018 RMB
Operating rights of service stations		
Cost:		
Balance as of January 1	36,908	48,613
Additions	11,837	3,948
Decreases	(132)	(345)
Balance as of December 31	48,613	52,216
Accumulated amortization:		
Balance as of January 1	10,012	14,345
Additions	4,361	3,019
Decreases	(28)	(82)
Balance as of December 31	14,345	17,282
Net book value as of December 31	34,268	34,934

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26. SHORT-TERM AND LONG-TERM DEBTS AND LOANS FROM SINOPEC GROUP COMPANY AND FELLOW SUBSIDIARIES

Short-term debts represent:

	December 31,	
	2017 RMB	2018 RMB
Third parties debts		
Short-term bank loans	31,105	17,088
RMB denominated	23,685	13,201
US Dollar denominated	7,420	3,887
Short-term other loans	299	300
RMB denominated	299	300
Current portion of long-term bank loans	1,402	12,074
RMB denominated	1,379	12,039
US Dollar denominated	23	35
Current portion of long-term corporate bonds	22,532	
RMB denominated	16,000	
US Dollar denominated	6,532	
	23,934	12,074
	55,338	29,462
Loans from Sinopec Group Company and fellow subsidiaries		
Short-term loans	23,297	27,304
RMB denominated	1,706	3,061
US Dollar denominated	19,668	22,780
Hong Kong Dollar denominated	1,903	1,441
Euro denominated		22
Singapore Dollar denominated	20	
Current portion of long-term loans	2,014	4,361
RMB denominated	2,014	4,361
	25,311	31,665
	80,649	61,127

The Group s weighted average interest rates on short-term loans were 2.72% and 3.37% as of December 31, 2017 and 2018, respectively. The above borrowings are unsecured.

26. SHORT-TERM AND LONG-TERM DEBTS AND LOANS FROM SINOPEC GROUP COMPANY AND FELLOW SUBSIDIARIES *(Continued)*

Long-term debts represent:

	Interest rate and final maturity	December 31, 2017 RMB	December 31, 2018 RMB
Third parties debts			
Long-term bank loans			
RMB denominated	Interest rates ranging from 1.08% to 4.66% per annum as of December 31, 2018 with maturities through 2033	25,644	31,025
US Dollar denominated	Interest rates ranging from 1.55% to 4.29% per annum as of December 31, 2018 with maturities through 2031	192	109
		25,836	31,134
Corporate bonds(i)			
RMB denominated	Fixed interest rates ranging from 3.70% to 4.90% per annum as of December 31, 2018 with maturities through 2022	36,000	20,000
US Dollar denominated	Fixed interest rates ranging from 3.13% to 4.25% per annum as of December 31, 2018 with maturities through 2043	17,902	11,951
		53,902	31,951
Total third parties long-term debts		79,738	63,085
Less: Current portion		(23,934)	(12,074)
		55,804	51,011
Long-term loans from Sinopec Group Company and fellow subsidiaries			
RMB denominated	Interest rates ranging from interest free to 4.99% per annum as of December 31, 2018 with maturities through 2030	45,334	46,877
Less: Current portion		(2,014)	(4,361)
		43,320	42,516
		99,124	93,527

Short-term and long-term bank loans, short-term other loans and loans from Sinopec Group Company and fellow subsidiaries are primarily unsecured and carried at amortized cost.

Note:

(i) These corporate bonds are carried at amortized cost. As of December 31, 2018, RMB 11,951 (US Dollar denominated corporate bonds) are guaranteed by Sinopec Group Company.

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27. TRADE ACCOUNTS AND BILLS PAYABLE

	December 31, 2017 RMB	December 31, 2018 RMB
Amounts due to third parties	177,224	170,818
Amounts due to Sinopec Group Company and fellow subsidiaries	13,350	9,142
Amounts due to associates and joint ventures	9,499	6,381
	200,073	186,341
Bills payable	6,462	6,416
Trade accounts and bills payable measured at amortized cost	206,535	192,757

28. CONTRACT LIABILITIES

As of December 31, 2017 and 2018, the Group s contract liabilities primarily represent advances from customers. Related performance obligations are satisfied and revenue is recognized within one year.

As of January 1, 2018, the Group s contract liabilities was RMB 120,734, of which RMB 119,138 was recognized as revenue in 2018.

29. OTHER PAYABLES

	December 31, 2017 RMB	December 31, 2018 RMB
Salaries and welfare payable	7,162	7,312
Interest payable	723	634
Payables for constructions	60,010	54,992
Other payables	29,028	22,852
Financial liabilities carried at amortized costs	96,923	85,790
Taxes other than income tax	58,925	80,361
Receipts in advance (Note 1(a))	120,734	
	276,582	166,151

30. PROVISIONS

Provisions primarily represent provision for future dismantlement costs of oil and gas properties. The Group has mainly committed to the PRC government to establish certain standardized measures for the dismantlement of its oil and gas properties by making reference to the industry practices and is thereafter constructively obligated to take dismantlement measures of its oil and gas properties.

Movement of provision of the Group s obligations for the dismantlement of its oil and gas properties is as follows:

	2016 **RMB**	**2017** **RMB**	**2018** **RMB**
Balance as of January 1	33,115	36,918	39,407
Provision for the year	3,420	1,627	1,567
Accretion expenses	1,057	1,501	1,438
Utilized for the year	(843)	(467)	(598)
Exchange adjustments	169	(172)	193
Balance as of December 31	36,918	39,407	42,007

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31. SHARE CAPITAL

	December 31, 2017 RMB	December 31, 2018 RMB
Registered, issued and fully paid		
95,557,771,046 listed A shares (2017: 95,557,771,046) of RMB 1.00 each	95,558	95,558
25,513,438,600 listed H shares (2017: 25,513,438,600) of RMB 1.00 each	25,513	25,513
	121,071	121,071

The Company was established on February 25, 2000 with a registered capital of 68.8 billion domestic state-owned shares with a par value of RMB 1.00 each. Such shares were issued to Sinopec Group Company in consideration for the assets and liabilities transferred to the Company (Note 1).

Pursuant to the resolutions passed at an Extraordinary General Meeting held on July 25, 2000 and approvals from relevant government authorities, the Company is authorized to increase its share capital to a maximum of 88.3 billion shares with a par value of RMB 1.00 each and offer not more than 19.5 billion shares with a par value of RMB 1.00 each to investors outside the PRC. Sinopec Group Company is authorized to offer not more than 3.5 billion shares of its shareholdings in the Company to investors outside the PRC. The shares sold by Sinopec Group Company to investors outside the PRC would be converted into H shares.

In October 2000, the Company issued 15,102,439,000 H shares with a par value of RMB 1.00 each, representing 12,521,864,000 H shares and 25,805,750 American Depositary Shares (ADSs , each representing 100 H shares), at prices of HKD 1.59 per H share and USD 20.645 per ADS, respectively, by way of a global initial public offering to Hong Kong and overseas investors. As part of the global initial public offering, 1,678,049,000 state-owned ordinary shares of RMB 1.00 each owned by Sinopec Group Company were converted into H shares and sold to Hong Kong and overseas investors.

In July 2001, the Company issued 2.8 billion listed A shares with a par value of RMB 1.00 each at RMB 4.22 by way of a public offering to natural persons and institutional investors in the PRC.

During the year ended December 31, 2010, the Company issued 88,774 listed A shares with a par value of RMB 1.00 each, as a result of exercise of 188,292 warrants entitled to the Bonds with Warrants.

During the year ended December 31, 2011, the Company issued 34,662 listed A shares with a par value of RMB 1.00 each, as a result of conversion by the holders of the 2011 Convertible Bonds.

During the year ended December 31, 2012, the Company issued 117,724,450 listed A shares with a par value of RMB 1.00 each, as a result of conversion by the holders of the 2011 Convertible Bonds.

On February 14, 2013, the Company issued 2,845,234,000 listed H shares (the Placing) with a par value of RMB 1.00 each at the Placing Price of HKD 8.45 per share. The aggregate gross proceeds from the Placing amounted to approximately HKD 24,042,227,300.00 and the aggregate net proceeds (after deduction of the commissions and estimated expenses) amounted to approximately HKD 23,970,100,618.00.

In June 2013, the Company issued 21,011,962,225 listed A shares and 5,887,716,600 listed H shares as a result of bonus issues of 2 shares converted from the retained earnings and 1 share transferred from the share premium for every 10 existing shares.

During the year ended December 31, 2013, the Company issued 114,076 listed A shares with a par value of RMB 1.00 each, as a result of conversion by the holders of the 2011 Convertible Bonds.

During the year ended December 31, 2014, the Company issued 1,715,081,853 listed A shares with a par value of RMB 1.00 each, as a result of conversion by the holders of the 2011 Convertible Bonds.

During the year ended December 31, 2015, the Company issued 2,790,814,006 listed A shares with a par value of RMB 1.00 each, as a result of conversion by the holders of the 2011 Convertible Bonds.

All A shares and H shares rank pari passu in all material aspects.

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31. SHARE CAPITAL *(Continued)*

Capital management

Management optimizes the structure of the Group s capital, which comprises of equity and debts. In order to maintain or adjust the capital structure of the Group, management may cause the Group to issue new shares, adjust the capital expenditure plan, sell assets to reduce debt, or adjust the proportion of short-term and long-term loans. Management monitors capital on the basis of debt-to-capital ratio, which is calculated by dividing long-term loans (excluding current portion), including long-term debts and loans from Sinopec Group Company and fellow subsidiaries, by the total of equity attributable to owners of the Company and long-term loans (excluding current portion), and liability-to-asset ratio, which is calculated by dividing total liabilities by total assets. Management s strategy is to make appropriate adjustments according to the Group s operating and investment needs and the changes of market conditions, and to maintain the debt-to-capital ratio and the liability-to-asset ratio of the Group at a range considered reasonable. The debt-to-capital ratio of the Group was 12.0% and 11.5% as of December 31, 2017 and 2018, respectively. The liability-to-asset ratio of the Group was 46.5% and 46.2% as of December 31, 2017 and 2018, respectively.

The schedule of the contractual maturities of loans and commitments are disclosed in Notes 26 and 32, respectively.

There were no changes in the management s approach to capital management of the Group during the year. Neither the Company nor any of its subsidiaries is subject to externally imposed capital requirements.

32. COMMITMENTS AND CONTINGENT LIABILITIES

Operating lease commitments

The Group leases land and buildings, service stations and other equipment through non-cancellable operating leases. These operating leases do not contain provisions for contingent lease rentals. None of the rental agreements contains escalation provisions that may require higher future rental payments.

As of December 31, 2017 and 2018, the future minimum lease payments of the Group under operating leases are as follows:

	December 31, 2017 RMB	December 31, 2018 RMB
Within one year	11,114	15,625
Between one and two years	11,492	14,668
Between two and three years	10,730	13,986
Between three and four years	10,552	13,734
Between four and five years	10,428	13,494
Thereafter	202,806	281,287
	257,122	352,794

Capital commitments

As of December 31, 2017 and 2018, the capital commitments of the Group are as follows:

	December 31, 2017 RMB	December 31, 2018 RMB
Authorized and contracted for (i)	120,386	141,045
Authorized but not contracted for	57,997	54,392
	178,383	195,437

These capital commitments relate to oil and gas exploration and development, refining and petrochemical production capacity expansion projects, the construction of service stations and oil depots and investment commitments.

32. COMMITMENTS AND CONTINGENT LIABILITIES *(Continued)*

Note:

(i) The investment commitments for the year ended December 31, 2017 and 2018 of the Group were RMB 3,364 and RMB 5,553, respectively.

Commitments to joint ventures

Pursuant to certain of the joint venture agreements entered into by the Group, the Group is obliged to purchase products from the joint ventures based on market prices.

Exploration and production licenses

Exploration licenses for exploration activities are registered with the Ministry of Natural Resources. The maximum term of the Group s exploration licenses is 7 years, and may be renewed twice within 30 days prior to expiration of the original term with each renewal being for a two-year term. The Group is obligated to make progressive annual minimum exploration investment relating to the exploration blocks in respect of which the license is issued. The Ministry of Natural Resources also issues production licenses to the Group on the basis of the reserve reports approved by relevant authorities. The maximum term of a full production license is 30 years unless a special dispensation is given by the State Council. The maximum term of production licenses issued to the Group is 80 years as a special dispensation was given to the Group by the State Council. The Group s production license is renewable upon application by the Group 30 days prior to expiration.

The Group is required to make payments of exploration license fees and production right usage fees to the Ministry of Natural Resources annually which are expensed. Expenses recognized were approximately RMB 333, RMB 308 and RMB 231 for the years ended December 31, 2016, 2017 and 2018, respectively.

Estimated future annual payments are as follows:

	December 31,	
	2017	**2018**
	RMB	**RMB**
Within one year	205	380

Between one and two years	83	79
Between two and three years	32	33
Between three and four years	28	28
Between four and five years	28	28
Thereafter	882	852
	1,258	1,400

Contingent liabilities

As of December 31, 2017 and 2018, guarantees by the group in respect of facilities granted to the parties below are as follows:

	December 31,	
	2017 **RMB**	**2018** **RMB**
Joint ventures	940	5,033
Associates (ii)	13,520	12,168
Others	9,732	7,197
	24,192	24,398

Management monitors the conditions that are subject to the guarantees to identify whether it is probable that a loss will occur, and recognizes any such losses under guarantees when those losses are reliably estimable. As of December 31, 2017 and 2018, it was not probable that the Group will be required to make payments under the guarantees. Thus no liability has been accrued for a loss related to the Group s obligation under these guarantee arrangements.

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32. COMMITMENTS AND CONTINGENT LIABILITIES *(Continued)*

Note:

(ii) The Group provided a guarantee in respect to standby credit facilities granted to Zhongtian Synergetic Energy by banks amount to RMB 17,050. As of December 31, 2017 and 2018, the amount withdrawn by Zhongtian Synergetic Energy and guaranteed by the Group was RMB 13,520, RMB 12,168.

Environmental contingencies

Under existing legislation, management believes that there are no probable liabilities that will have a material adverse effect on the financial position or operating results of the Group. The PRC government, however, has moved, and may move further towards more rigorous enforcement of applicable laws, and towards the adoption of more stringent environmental standards. Environmental liabilities are subject to considerable uncertainties which affect management s ability to estimate the ultimate cost of remediation efforts. These uncertainties include i) the exact nature and extent of the contamination at various sites including, but not limited to refineries, oil fields, service stations, terminals and land development areas, whether operating, closed or sold, ii) the extent of required cleanup efforts, iii) varying costs of alternative remediation strategies, iv) changes in environmental remediation requirements, and v) the identification of new remediation sites. The amount of such future cost is indeterminable due to such factors as the unknown magnitude of possible contamination and the unknown timing and extent of the corrective actions that may be required. Accordingly, the outcome of environmental liabilities under proposed or future environmental legislation cannot reasonably be estimated at present, and could be material.

The Group paid normal routine pollutant discharge fees of approximately RMB 6,358, RMB 7,851 and RMB 7,940 in the consolidated financial statements for the years ended December 31, 2016, 2017 and 2018, respectively.

Legal contingencies

The Group is a defendant in certain lawsuits as well as the named party in other proceedings arising in the ordinary course of business. Management has assessed the likelihood of an unfavourable outcome of such contingencies, lawsuits or other proceedings and believes that any resulting liabilities will not have a material adverse effect on the financial position, operating results or cash flows of the Group.

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33. BUSINESS COMBINATION

For the year ended December 31, 2018, significant business combination didn t occur in the Group.

(a) Acquisition of Shanghai SECCO

On October 26, 2017, a subsidiary of the Company, Gaoqiao Petrochemical Co., Ltd., purchased 50% equity interest in Shanghai SECCO from BP Chemicals East China Investment Limited with a cash consideration of RMB 10,135 (the Transaction). Before the Transaction, the Company and one of its subsidiaries held 30% and 20% equity interest in Shanghai SECCO, respectively. After the Transaction, the Company, together with its subsidiaries, hold 100% equity interest of Shanghai SECCO, which became a subsidiary of the Company.

Shanghai SECCO is principally engaged in the production and sale of petrochemical products including acrylonitrile, polystyrene, polyethylene, etc.

Based on the purchase price allocation performed, details of the purchase consideration, the net assets acquired and goodwill are as follows:

	RMB
Purchase consideration	
Acquisition date (October 26, 2017)	
-Cash consideration for the purchase of 50% equity interest acquired	10,135
-Acquisition-date fair value of the 50% equity interest held before the acquisition	10,135
Total purchase consideration	20,270

The assets and liabilities recognized as a result of the acquisition are as follows:

	Fair value RMB
Cash and cash equivalents	5,653
Trade accounts receivable, net	538
Bills receivable	641
Inventories	1,702
Prepaid expenses and other current assets	2,130
Total current assets	10,664
Property, plant and equipment, net	9,587
Construction in progress	231
Deferred tax assets	11
Lease prepayments	1,920
Long-term prepayments and other assets	1,134

Total non-current assets	12,883
Total assets	23,547
Trade accounts payables	(2,092)
Accrued expenses and other payables	(1,517)
Income tax payable	(423)
Total current liabilities	(4,032)
Deferred tax liabilities (Note 23)	(1,786)
Net assets acquired	17,729
Goodwill (Note 20)	2,541

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33. BUSINESS COMBINATION *(Continued)*

The goodwill is attributable to the high profitability of the acquired business and synergy to be achieved post the Transaction among Shanghai SECCO and the Group s existing petrochemical operations located in eastern China.

As of Acquisition Date, a gain of RMB 3,941 was recognized as a result of remeauring the 50% equity interest held before the Transaction to its fair value, which is included in other operating (expense)/income in the Group s consolidated statement of income for the year ended December 31, 2017.

Shanghai SECCO contributed revenue of RMB 5,222 and net profit of RMB 726 to the Group for the period from the Acquisition Date to December 31, 2017.

If the acquisition had occurred on January 1, 2017, consolidated pro-forma revenue and profit for the year ended December 31, 2017 would have been RMB 2,365,632 and RMB 74,930 respectively. These amounts have been calculated using the subsidiary s results and adjusting them for the additional depreciation and amortization that would have been charged assuming the fair value adjustments to property, plant and equipment and intangible assets had applied from January 1, 2017, together with the consequential tax effects.

(b) Acquisition of Gaoqiao Branch of SAMC

Pursuant to the resolution passed at the Directors meeting on October 29, 2015, the Company entered into the JV Agreement with Sinopec Assets Management Corporation (SAMC) in relation to the formation of the Gaoqiao Petrochemical Co., Ltd. According to the JV Agreement, the Company and SAMC jointly set up Gaoqiao Petrochemical Co., Ltd. for RMB 100 in cash in 2016. Subsequently, the Company subscribed capital contribution with the net assets of Gaoqiao Branch of the Company and SAMC subscribed capital contribution with the net assets of Gaoqiao Branch of SAMC. The capital contribution was completed on June 1, 2016, after which the Company held 55% of Gaoqiao Petrochemical Co., Ltd. s voting rights and became the parent company of Gaoqiao Petrochemical Co., Ltd.

As Sinopec Group Company controls both the Group and SAMC, the non-cash transaction described above between Sinopec and SAMC has been accounted as business combination under the common control and it has been reflected in the accompanying consolidated financial statements as combination of entities under common control in a manner of predecessor value accounting. Accordingly, the assets and liabilities of Gaoqiao Branch of SAMC have been accounted for at historical cost, and the consolidated financial statements of the Group prior to these acquisitions have been restated to include the results of operation and the assets and liabilities of Gaoqiao Branch of SAMC on a combined basis.

At the completion date, the non-controlling interests amount to RMB 2,137 was recognized in relation to SAMC s 45% interest in Gaoqiao Branch of the Company.

34. RELATED PARTY TRANSACTIONS

Parties are considered to be related to the Group if the Group has the ability, directly or indirectly, to control or jointly control the party or exercise significant influence over the party in making financial and operating decisions, or vice versa, or where the Group and the party are subject to control or common control. Related parties may be individuals (being members of key management personnel, significant shareholders and/or their close family members) or other entities and include entities which are under the significant influence of related parties of the Group where those parties are individuals, and post-employment benefit plans which are for the benefit of employees of the Group or of any entity that is a related party of the Group.

(a) Transactions with Sinopec Group Company and fellow subsidiaries, associates and joint ventures

The Group is part of a larger group of companies under Sinopec Group Company, which is controlled by the PRC government, and has significant transactions and relationships with Sinopec Group Company and fellow subsidiaries. Because of these relationships, it is possible that the terms of these transactions are not the same as those that would result from transactions among wholly unrelated parties.

The principal related party transactions with Sinopec Group Company and fellow subsidiaries, associates and joint ventures, which were carried out in the ordinary course of business are as follows:

		Years ended December 31,		
	Note	**2016 RMB**	**2017 RMB**	**2018 RMB**
Sales of goods	(i)	194,179	244,211	272,789
Purchases	(ii)	118,242	165,993	192,224
Transportation and storage	(iii)	1,333	7,716	7,319
Exploration and development services	(iv)	27,201	21,210	23,489
Production related services	(v)	10,816	20,824	28,472
Ancillary and social services	(vi)	6,584	6,653	6,664
Operating lease charges for land	(vii)	10,474	8,015	7,765
Operating lease charges for buildings	(vii)	449	510	521
Other operating lease charges	(vii)	456	626	869
Agency commission income	(viii)	129	127	113
Interest income	(ix)	209	807	848
Interest expense	(x)	996	554	1,110
Net deposits (placed with)/withdrawn from related parties	(ix)	(21,770)	(7,441)	6,457
Net funds (repaid to)/obtained from related parties	(xi)	(19,318)	19,661	31,684

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34. RELATED PARTY TRANSACTIONS *(Continued)*

(a) Transactions with Sinopec Group Company and fellow subsidiaries, associates and joint ventures (Continued)

The amounts set out in the table above in respect of each of the years in the three-year period ended December 31, 2018 represent the relevant costs and income as determined by the corresponding contracts with the related parties.

There was no guarantee given to banks by the Group in respect of banking facilities to related parties as of December 31, 2017 and 2018, except for the guarantees disclosed in Note 32.

The directors of the Company are of the opinion that the above transactions with related parties were conducted in the ordinary course of business and on normal commercial terms or in accordance with the agreements governing such transactions, and this has been confirmed by the independent non-executive directors.

Notes:

(i) Sales of goods represent the sale of crude oil, intermediate petrochemical products, petroleum products and ancillary materials.

(ii) Purchases represent the purchase of materials and utility supplies directly related to the Group s operations such as the procurement of raw and ancillary materials and related services, supply of water, electricity and gas.

(iii) Transportation and storage represent the cost for the use of railway, road and marine transportation services, pipelines, loading, unloading and storage facilities.

(iv) Exploration and development services comprise direct costs incurred in the exploration and development such as geophysical, drilling, well testing and well measurement services.

(v) Production related services represent ancillary services rendered in relation to the Group s operations such as equipment repair and general maintenance, insurance premium, technical research, communications, firefighting, security, product quality testing and analysis, information technology, design and engineering, construction of oilfield ground facilities, refineries and chemical plants, manufacture of replacement parts and machinery, installation, project management, environmental protection and management services.

(vi) Ancillary and social services represent expenditures for social welfare and support services such as educational facilities, media communication services, sanitation, accommodation, canteens, property maintenance.

(vii) Operating lease charges represent the rental paid to Sinopec Group Company for operating leases in respect of land, buildings and equipment.

(viii) Agency commission income represents commission earned for acting as an agent in respect of sales of products and purchase of materials for certain entities owned by Sinopec Group Company.

(ix) Interest income represents interest received from deposits placed with Sinopec Finance Company Limited and Sinopec Century Bright Capital Investment Limited, finance companies controlled by Sinopec Group Company. The applicable interest rate is determined in accordance with the prevailing saving deposit rate. The balance of deposits as of December 31, 2017 and 2018 were RMB 47,514 and RMB 41,057, respectively.

(x) Interest expense represents interest charges on the loans obtained from Sinopec Group Company and fellow subsidiaries.

34. RELATED PARTY TRANSACTIONS *(Continued)*

***(a) Transactions with Sinopec Group Company and fellow subsidiaries, associates and joint ventures** (Continued)*

(xi) The Group obtained loans, discounted bills and others from Sinopec Group Company and fellow subsidiaries.

In connection with the Reorganization, the Company and Sinopec Group Company entered into a number of agreements under which 1) Sinopec Group Company will provide goods and products and a range of ancillary, social and supporting services to the Group and 2) the Group will sell certain goods to Sinopec Group Company. These agreements impacted the operating results of the Group for the year ended December 31, 2018. The terms of these agreements are summarized as follows:

- The Company has entered into a non-exclusive Agreement for Mutual Provision of Products and Ancillary Services (Mutual Provision Agreement) with Sinopec Group Company effective from January 1, 2000 in which Sinopec Group Company has agreed to provide the Group with certain ancillary production services, construction services, information advisory services, supply services and other services and products. While each of Sinopec Group Company and the Company is permitted to terminate the Mutual Provision Agreement upon at least six months notice, Sinopec Group Company has agreed not to terminate the agreement if the Group is unable to obtain comparable services from a third party. The pricing policy for these services and products provided by Sinopec Group Company to the Group is as follows:

(1) the government-prescribed price;

(2) where there is no government-prescribed price, the government-guidance price;

(3) where there is neither a government-prescribed price nor a government-guidance price, the market price; or

(4) where none of the above is applicable, the price to be agreed between the parties, which shall be based on a reasonable cost incurred in providing such services plus a profit margin not exceeding 6%.

- The Company has entered into a non-exclusive Agreement for Provision of Cultural and Educational, Health Care and Community Services with Sinopec Group Company effective from January 1, 2000 in which Sinopec Group Company has agreed to provide the Group with certain cultural, educational, health care and community services on the same pricing terms and termination conditions as described in the above Mutual Provision Agreement.

- The Company has entered into a series of lease agreements with Sinopec Group Company to lease certain lands and buildings effective on January 1, 2000. The lease term is 40 or 50 years for lands and 20 years for buildings, respectively. The Company and Sinopec Group Company can renegotiate the rental amount every three years for land. The Company and Sinopec Group Company can renegotiate the rental amount for buildings every year. However such amount cannot exceed the market price as determined by an independent third party.

- The Company has entered into agreements with Sinopec Group Company effective from January 1, 2000 under which the Group has been granted the right to use certain trademarks, patents, technology and computer software developed by Sinopec Group Company.

- The Company has entered into a service stations franchise agreement with Sinopec Group Company effective from January 1, 2000 under which its service stations and retail stores would exclusively sell the refined products supplied by the Group.

- On the basis of a series of continuing connected transaction agreements signed in 2000, the Company and Sinopec Group Company have signed the Fifth Supplementary Agreement and the Fourth Revised Memorandum of land use rights leasing contract on August 24, 2018, which took effect on January 1, 2019 and made adjustment to Mutual Supply Agreement , Agreement for Provision of Cultural and Educational, Health Care and Community Services , Buildings Leasing Contract , Intellectual Property Contract and Land Use Rights Leasing Contract etc.,. Th memorandum was effective since January 1, 2019. Sinopec Group Company agreed to lease 410 million square meters of land to the Company, and to adjust the total fee of land to about RMB 14 billion, according to the newly confirmed area of leasing land and the situation of land market.

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34. RELATED PARTY TRANSACTIONS *(Continued)*

(a) Transactions with Sinopec Group Company and fellow subsidiaries, associates and joint ventures (Continued)

Amounts due from/to Sinopec Group Company and fellow subsidiaries, associates and joint ventures included in the following accounts captions are summarized as follows:

	December 31, 2017 RMB	December 31, 2018 RMB
Trade accounts receivable and bills receivable	13,174	7,555
Prepaid expenses and other current assets	5,633	7,665
Long-term prepayments and other assets	20,726	23,482
Total	39,533	38,702
Trade accounts payable and bills payable	24,104	17,530
Contract liabilities		3,273
Other payables	20,990	18,160
Other long-term liabilities	10,165	12,470
Short-term loans and current portion of long-term loans from Sinopec Group Company and fellow subsidiaries	25,311	31,665
Long-term loans excluding current portion from Sinopec Group Company and fellow subsidiaries	43,320	42,516
Total	123,890	125,614

Amounts due from/to Sinopec Group Company and fellow subsidiaries, associates and joint ventures, other than short-term loans and long-term loans, bear no interest, are unsecured and are repayable in accordance with normal commercial terms. The terms and conditions associated with short-term loans and long-term loans payable to Sinopec Group Company and fellow subsidiaries are set out in Note 26.

The long-term borrowings mainly include an interest-free loan with a maturity period of 20 years amounting to RMB 35,560 from the Sinopec Group Company (a state-owned enterprise) through the Sinopec Finance. This borrowing is a special arrangement to reduce financing costs and improve liquidity of the Company during its initial global offering in 2000.

As of and for the years ended December 31, 2017 and 2018, no individually significant impairment losses for bad and doubtful debts were recognized in respect of amounts due from Sinopec Group Company and fellow subsidiaries, associates and joint ventures.

(b) Key management personnel emoluments

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of the Group, directly or indirectly, including directors and supervisors of the Group. The key management personnel compensation is as follows:

	Years ended December 31,		
	2016	**2017**	**2018**
	RMB 000	**RMB 000**	**RMB 000**
Short-term employee benefits	5,648	5,344	5,745
Retirement scheme contributions	499	424	351
	6,147	5,768	6,096

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34. RELATED PARTY TRANSACTIONS *(Continued)*

(c) Contributions to defined contribution retirement plans

The Group participates in various defined contribution retirement plans organized by municipal and provincial governments for its staff. The details of the Group s employee benefits plan are disclosed in Note 35. As of December 31, 2017 and 2018, the accrual for the contribution to post-employment benefit plans was not material.

(d) Transactions with other state-controlled entities in the PRC

The Group is a state-controlled energy and chemical enterprise and operates in an economic regime currently dominated by entities directly or indirectly controlled by the PRC government through its government authorities, agencies, affiliations and other organizations (collectively referred as state-controlled entities).

Apart from transactions with Sinopec Group Company and fellow subsidiaries, the Group has transactions with other state-controlled entities, include but not limited to the following:

- sales and purchases of goods and ancillary materials;
- rendering and receiving services;
- lease of assets;
- depositing and borrowing money; and
- use of public utilities.

These transactions are conducted in the ordinary course of the Group s business on terms comparable to those with other entities that are not state-controlled.

35. EMPLOYEE BENEFITS PLAN

As stipulated by the regulations of the PRC, the Group participates in various defined contribution retirement plans organized by municipal and provincial governments for its staff. The Group is required to make contributions to the retirement plans at rates ranging from 13.0% to 20.0% of the salaries, bonuses and certain allowances of its staff. In addition, the Group provides a supplementary retirement plan for its staff at rates not exceeding 5% of the salaries. The Group has no other material obligation for the payment of pension benefits associated with these plans beyond the annual contributions described above. The Group s contributions for the years ended December 31, 2016, 2017 and 2018 were RMB 8,385, RMB 8,981 and RMB 9,296, respectively.

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36. SEGMENT REPORTING

Segment information is presented in respect of the Group s business segments. The format is based on the Group s management and internal reporting structure.

In a manner consistent with the way in which information is reported internally to the Group s chief operating decision maker for the purposes of resource allocation and performance assessment, the Group has identified the following five reportable segments. No operating segments have been aggregated to form the following reportable segments.

(i) Exploration and production, which explores and develops oil fields, produces crude oil and natural gas and sells such products to the refining segment of the Group and external customers.

(ii) Refining, which processes and purifies crude oil, that is sourced from the exploration and production segment of the Group and external suppliers, and manufactures and sells petroleum products to the chemicals and marketing and distribution segments of the Group and external customers.

(iii) Marketing and distribution, which owns and operates oil depots and service stations in the PRC, and distributes and sells refined petroleum products (mainly gasoline and diesel) in the PRC through wholesale and retail sales networks.

(iv) Chemicals, which manufactures and sells petrochemical products, derivative petrochemical products and other chemical products mainly to external customers.

(v) Corporate and others, which largely comprise the trading activities of the import and export companies of the Group and research and development undertaken by other subsidiaries.

The segments were determined primarily because the Group manages its exploration and production, refining, marketing and distribution, chemicals, and corporate and others businesses separately. The reportable segments are each managed separately because they manufacture and/or distribute distinct products with different production processes and due to their distinct operating and gross margin characteristics.

(1) Information of reportable segmental revenues, profits or losses, assets and liabilities

The Group s chief operating decision maker evaluates the performance and allocates resources to its operating segments on an operating profit basis, without considering the effects of finance costs or investment income. Inter-segment transfer pricing is based on the market price or cost plus an appropriate margin, as specified by the Group s policy.

Assets and liabilities dedicated to a particular segment s operations are included in that segment s total assets and liabilities. Segment assets include all tangible and intangible assets, except for interest in associates and joint ventures, investments, deferred tax assets, cash and cash equivalents, time deposits with financial institutions and other unallocated assets. Segment liabilities exclude short-term debts, long-term debts, loans from Sinopec Group Company and fellow subsidiaries, income tax payable, deferred tax liabilities and other unallocated liabilities.

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36. SEGMENT REPORTING *(Continued)*

(1) Information of reportable segmental revenues, profits or losses, assets and liabilities (Continued)

Information of the Group s reportable segments is as follows:

	Years ended December 31, 2016 RMB	2017 RMB	2018 RMB
Sales of goods			
Exploration and production			
External sales	47,443	69,168	93,499
Inter-segment sales	58,954	77,804	95,954
	106,397	146,972	189,453
Refining			
External sales	102,983	132,478	148,930
Inter-segment sales	747,317	874,271	1,109,088
	850,300	1,006,749	1,258,018
Marketing and distribution			
External sales	1,027,373	1,191,902	1,408,989
Inter-segment sales	3,480	3,962	5,224
	1,030,853	1,195,864	1,414,213
Chemicals			
External sales	284,289	373,814	457,406
Inter-segment sales	38,614	49,615	73,835
	322,903	423,429	531,241
Corporate and others			
External sales	418,102	533,108	716,789
Inter-segment sales	320,367	440,303	650,271
	738,469	973,411	1,367,060
Elimination of inter-segment sales	(1,168,732)	(1,445,955)	(1,934,372)
Sales of goods	1,880,190	2,300,470	2,825,613
Other operating revenues			
Exploration and production	9,542	10,533	10,738
Refining	5,486	5,104	5,389
Marketing and distribution	22,004	28,333	32,424
Chemicals	12,211	14,314	15,492
Corporate and others	1,478	1,439	1,523
Other operating revenues	50,721	59,723	65,566
Sales of goods and other operating revenues	1,930,911	2,360,193	2,891,179

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36. SEGMENT REPORTING *(Continued)*

(1) Information of reportable segmental revenues, profits or losses, assets and liabilities (Continued)

	Years ended December 31,		
	2016 RMB	2017 RMB	2018 RMB
Result			
Operating (loss)/income			
By segment			
- Exploration and production	(36,641)	(45,944)	(10,107)
- Refining	56,265	65,007	54,827
- Marketing and distribution	32,153	31,569	23,464
- Chemicals	20,623	26,977	27,007
- Corporate and others	3,212	(4,484)	(9,293)
- Elimination	1,581	(1,655)	(3,634)
Total segment operating income	77,193	71,470	82,264
Share of (losses)/profits from associates and joint ventures			
- Exploration and production	(1,203)	1,449	2,598
- Refining	1,075	989	109
- Marketing and distribution	2,362	2,945	3,155
- Chemicals	5,696	9,621	6,298
- Corporate and others	1,376	1,521	1,814
Aggregate share of profits from associates and joint ventures	9,306	16,525	13,974
Investment income/(losses)			
- Exploration and production	24	40	(3)
- Refining	(4)	28	315
- Marketing and distribution	90	90	43
- Chemicals	119	86	596
- Corporate and others	34	18	920
Aggregate investment income	263	262	1,871
Net finance costs	(6,611)	(1,560)	1,001
Earnings before income tax	80,151	86,697	99,110

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36. SEGMENT REPORTING *(Continued)*

(1) Information of reportable segmental revenues, profits or losses, assets and liabilities (Continued)

		December 31,	
	2016	**2017**	**2018**
	RMB	**RMB**	**RMB**
Assets			
Segment assets			
- Exploration and production	402,476	343,404	321,686
- Refining	260,903	273,123	271,356
- Marketing and distribution	292,328	309,727	317,641
- Chemicals	144,371	158,472	156,865
- Corporate and others	95,263	170,045	152,799
Total segment assets	1,195,341	1,254,771	1,220,347
Interest in associates and joint ventures	116,812	131,087	145,721
Available-for-sale financial assets	11,408	1,676	
Financial assets at fair value through other comprehensive income			1,450
Deferred tax assets	7,214	15,131	21,694
Cash and cash equivalents, time deposits with financial institutions	142,497	165,004	167,015
Other unallocated assets	25,337	27,835	36,081
Total assets	1,498,609	1,595,504	1,592,308
Liabilities			
Segment liabilities			
- Exploration and production	95,944	99,568	94,170
- Refining	82,170	101,429	103,809
- Marketing and distribution	133,303	164,101	159,536
- Chemicals	32,072	35,293	37,413
- Corporate and others	97,080	117,781	144,216
Total segment liabilities	440,569	518,172	539,144
Short-term debts	56,239	55,338	29,462
Income tax payable	6,051	13,015	6,699
Long-term debts	72,674	55,804	51,011
Loans from Sinopec Group Company and fellow subsidiaries	63,352	68,631	74,181
Deferred tax liabilities	7,661	6,466	5,948
Other unallocated liabilities	20,828	25,188	29,328
Total liabilities	667,374	742,614	735,773

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36. SEGMENT REPORTING *(Continued)*

(1) Information of reportable segmental revenues, profits or losses, assets and liabilities (Continued)

	Years ended December 31, 2016 RMB	2017 RMB	2018 RMB
Capital expenditure			
Exploration and production	32,187	31,344	42,155
Refining	14,347	21,075	27,908
Marketing and distribution	18,493	21,539	21,429
Chemicals	8,849	23,028	19,578
Corporate and others	2,580	2,398	6,906
	76,456	99,384	117,976
Depreciation, depletion and amortization			
Exploration and production	61,929	66,843	60,331
Refining	17,209	18,408	18,164
Marketing and distribution	14,540	15,463	16,296
Chemicals	12,654	12,873	13,379
Corporate and others	2,093	1,723	1,797
	108,425	115,310	109,967
Impairment losses on long-lived assets			
Exploration and production	11,605	13,556	4,274
Refining	1,655	1,894	353
Marketing and distribution	267	675	264
Chemicals	2,898	4,922	1,374
Corporate and others		211	16
	16,425	21,258	6,281

(2) Geographical information

The following tables set out information about the geographical information of the Group s external sales and the Group s non-current assets, excluding financial instruments and deferred tax assets. In presenting information on the basis of geographical segments, segment revenue is based on the geographical location of customers, and segment assets are based on the geographical location of the assets.

	Years ended December 31, 2016 RMB	2017 RMB	2018 RMB
External sales			
Mainland China	1,488,117	1,758,365	2,119,580
Singapore	152,068	269,349	395,129
Others	290,726	332,479	376,470
	1,930,911	2,360,193	2,891,179

December31,

	2016 RMB	2017 RMB	2018 RMB
Non-current assets			
Mainland China	1,000,209	979,329	989,668
Others	45,887	48,572	50,892
	1,046,096	1,027,901	1,040,560

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37. PRINCIPAL SUBSIDIARIES

As of December 31, 2018, the following list contains the particulars of subsidiaries which principally affected the results, assets and liabilities of the Group.

Name of Company	Particulars of issued capital	Interests held by the Company %	Interests held by non-controlling interests %	Principal activities
Sinopec International Petroleum Exploration and Production Limited (SIPL)	RMB 8,000	100.00		Investment in exploration, production and sale of petroleum and natural gas
Sinopec Great Wall Energy & Chemical Company Limited	RMB 22,761	100.00		Coal chemical industry investment management, production and sale of coal chemical products
Sinopec Yangzi Petrochemical Company Limited	RMB 15,651	100.00		Manufacturing of intermediate petrochemical products and petroleum products
Sinopec Pipeline Storage & Transportation Company Limited	RMB 12,000	100.00		Pipeline storage and transportation of crude oil
Sinopec Yizheng Chemical Fibre Limited Liability Company	RMB 4,000	100.00		Production and sale of polyester chips and polyester fibres
Sinopec Lubricant Company Limited	RMB 3,374	100.00		Production and sale of refined petroleum products, lubricant base oil, and petrochemical materials
Sinopec Qingdao Petrochemical Company Limited	RMB 1,595	100.00		Manufacturing of intermediate petrochemical products and petroleum products
Sinopec Chemical Sales Company Limited	RMB 1,000	100.00		Marketing and distribution of petrochemical products
China International United Petroleum and Chemical Company Limited	RMB 3,000	100.00		Trading of crude oil and petrochemical products
Sinopec Overseas Investment Holding Limited (SOIH)	US Dollar 1,662	100.00		Investment holding of overseas business
Sinopec Catalyst Company Limited	RMB 1,500	100.00		Production and sale of catalyst products
China Petrochemical International Company Limited	RMB 1,400	100.00		Trading of petrochemical products
Sinopec Beihai Refining and Chemical Limited Liability Company	RMB 5,294	98.98	1.02	Import and processing of crude oil, production, storage and sale of petroleum products and petrochemical products
Sinopec Qingdao Refining and Chemical Company Limited	RMB 5,000	85.00	15.00	Manufacturing of intermediate petrochemical products and petroleum products
Sinopec Hainan Refining and Chemical Company Limited	RMB 3,986	75.00	25.00	Manufacturing of intermediate petrochemical products and petroleum products
Sinopec Marketing Co. Limited (Marketing Company)	RMB 28,403	70.42	29.58	Marketing and distribution of refined petroleum products
Shanghai SECCO Petrochemical Company Limited (Shanghai SECCO) (Note 33)	RMB 7,801	67.60	32.40	Production and sale of petrochemical products
	RMB 6,270	65.00	35.00	

Sinopec SK (Wuhan) Petrochemical Company Limited (Zhonghan Wuhan)				Production, sale, research and development of ethylene and downstream byproducts
Sinopec Kantons Holdings Limited (Sinopec Kantons)	HKD 248	60.33	39.67	Provision of crude oil jetty services and natural gas pipeline transmission services
Gaoqiao Petrochemical Company Limited (Note 33)	RMB 10,000	55.00	45.00	Manufacturing of intermediate petrochemical products and petroleum products
Sinopec Shanghai Petrochemical Company Limited (Shanghai Petrochemical)	RMB 10,824	50.44	49.56	Manufacturing of synthetic fibres, resin and plastics, intermediate petrochemical products and petroleum products
Fujian Petrochemical Company Limited (Fujian Petrochemical) (i)	RMB 8,140	50.00	50.00	Manufacturing of plastics, intermediate petrochemical products and petroleum products

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37. PRINCIPAL SUBSIDIARIES *(Continued)*

Except for Sinopec Kantons and SOIH, which are incorporated in Bermuda and Hong Kong respectively, all of the above principal subsidiaries are incorporated and operate their businesses principally in the PRC. All of the above principal subsidiaries are limited companies.

Note:

(i) The Group consolidated the financial statements of the entity because it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

Summarized financial information on subsidiaries with material non-controlling interests

Set out below are the summarized financial information which the amount before inter-company eliminations for each subsidiary that has non-controlling interests that are material to the Group.

Summarized consolidated balance sheet

	Marketing Company		SIPL		Shanghai Petrochemical		Fujian Petrochemical		Sinopec Kantons		Shanghai SECCO		Zhonghan Wuhan	
	December 31,		December 31,		December 31,		December 31,		December 31,		December 31,		December 31,	
	2017 RMB	2018 RMB	2017 RMB	2018 RMB	2017 RMB	2018 RMB	2017 RMB	2018 RMB	2017 RMB	2018 RMB	2017 RMB	2018 RMB	2017 RMB	2018 RMB
Current assets	156,494	130,861	19,555	16,731	19,866	25,299	992	816	1,196	1,209	11,602	9,537	1,636	2,750
Current liabilities	(212,620)	(181,766)	(7,118)	(483)	(10,922)	(13,913)	(376)	(50)	(2,351)	(3,722)	(4,174)	(2,233)	(3,975)	(2,333)
Net current (liabilities)/assets	(56,126)	(50,905)	12,437	16,248	8,944	11,386	616	766	(1,155)	(2,513)	7,428	7,304	(2,339)	417
Non-current assets	253,455	261,062	34,769	38,020	19,577	19,087	9,925	11,444	13,089	12,895	12,797	12,301	13,598	12,612
Non-current liabilities	(1,774)	(2,086)	(28,523)	(31,050)	(6)	(10)	(681)	(688)	(2,430)	(132)	(1,740)	(1,698)		
Net non-current assets	251,681	258,976	6,246	6,970	19,571	19,077	9,244	10,756	10,659	12,763	11,057	10,603	13,598	12,612
Net assets	195,555	208,071	18,683	23,218	28,515	30,463	9,860	11,522	9,504	10,250	18,485	17,907	11,259	13,029
Attributable to owners of the Company	132,549	141,244	3,468	5,266	14,253	15,295	4,930	5,761	5,716	6,165	12,496	12,105	7,318	8,469
Attributable to non-controlling interests	63,006	66,827	15,215	17,952	14,262	15,168	4,930	5,761	3,788	4,085	5,989	5,802	3,941	4,560

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37. PRINCIPAL SUBSIDIARIES *(Continued)*

Summarized consolidated statement of comprehensive income

Year ended December 31,	Marketing Company			SIPL			Shanghai Petrochemical			Fujian Petrochemical			Sinopec Kantons			Shanghai SECCO (ii)		Zhonghan Wul		
	2016 RMB	2017 RMB	2018 RMB	2016 RMB	2017 RMB	2018 RMB	2016 RMB	2017 RMB	2018 RMB	2016 RMB	2017 RMB	2018 RMB	2016 RMB	2017 RMB	2018 RMB	2017 RMB	2018 RMB	2016 RMB	2017 RMB	2 R
Operating revenues	1,050,294	1,221,530	1,443,698	4,016	6,136	5,037	77,843	91,962	107,689	4,968	6,068	5,261	1,512	1,498	1,398	5,222	26,320	11,703	16,139	1
Net income/ (loss) for the year	26,461	27,520	22,046	(4,604)	1,075	3,272	5,981	6,154	5,336	2,513	2,726	1,576	860	1,046	1,065	726	3,099	1,558	2,730	
Total Comprehensive income/ (loss)	27,385	26,986	22,589	(2,481)	396	4,536	6,000	6,153	5,336	2,513	2,726	1,576	879	1,146	1,067	726	3,099	1,558	2,730	
Comprehensive income/(loss) attributable to non-controlling interests	9,028	9,033	7,794	(3,279)	(38)	2,737	2,964	3,052	2,645	1,256	1,363	788	349	433	399	235	1,004	545	956	
Dividends paid to non-controlling interests	4,932	9,544	3,964				563	1,344	1,616		625	600	51	70	104		1,191			

Summarized statement of cash flows

Year ended December 31,	Marketing Company			SIPL			Shanghai Petrochemical			Fujian Petrochemical			Sinopec Kantons			Shanghai SECCO (ii)		Zhonghan Wuhan		
	2016 RMB	2017 RMB	2018 RMB	2016 RMB	2017 RMB	2018 RMB	2016 RMB	2017 RMB	2018 RMB	2016 RMB	2017 RMB	2018 RMB	2016 RMB	2017 RMB	2018 RMB	2017 RMB	2018 RMB	2016 RMB	2017 RMB	2018 RMB
Net cash generated from/(used in) operating activities	50,840	51,038	24,825	2,576	2,758	3,467	7,182	7,061	6,659	617	(558)	38	505	968	738	1,639	3,766	3,636	2,976	3,308
Net cash (used in)/generated from investing activities	(31,573)	(35,738)	8,339	2,729	(2,211)	4,096	(190)	(2,401)	(1,928)	54	225	(215)	261	193	648	5,567	(480)	(3,080)	(2,415)	(3,099
Net cash (used in)/generated from financing activities	(20,424)	(16,499)	(32,084)	(4,414)	243	(5,419)	(2,637)	(2,590)	(3,507)	(55)	(158)	43	(1,338)	(1,093)	(1,551)		(3,676)	(682)	(631)	525
Net (decrease)/ increase in cash and cash equivalents	(1,157)	(1,199)	1,080	891	790	2,144	4,355	2,070	1,224	616	(491)	(134)	(572)	68	(165)	7,206	(390)	(126)	(70)	734
	14,914	14,373	12,921	2,042	3,045	3,605	1,077	5,441	7,504	101	717	226	886	289	343		7,205	260	134	64

Cash and cash equivalents as of January 1																				
Effect of foreign currency exchange rate changes	616	(253)	141	112	(230)	244	9	(7)	14				(25)	(14)	20	(1)	2			
Cash and cash equivalents as of December 31	14,373	12,921	14,142	3,045	3,605	5,993	5,441	7,504	8,742	717	226	92	289	343	198	7,205	6,817	134	64	798

(ii) The summarized consolidated statement of comprehensive income and the summarized statement of cash flow of Shanghai SECCO present the results from the acquisition date to December 31, 2017.

38. FINANCIAL RISK MANAGEMENT AND FAIR VALUES

Overview

Financial assets of the Group include cash and cash equivalents, time deposits with financial institutions, investments, financial assets at fair value through profit or loss, derivative financial assets, bills receivable, trade accounts receivable, amounts due from Sinopec Group Company and fellow subsidiaries, amounts due from associates and joint ventures, financial assets at fair value through other comprehensive income and other receivables. Financial liabilities of the Group include short-term debts, loans from Sinopec Group Company and fellow subsidiaries, derivative financial liabilities, bills payable, trade accounts payable, amounts due to Sinopec Group Company and fellow subsidiaries, other payables and long-term debts.

The Group has exposure to the following risks from its uses of financial instruments:

- credit risk;
- liquidity risk; and
- market risk.

The Board of Directors has overall responsibility for the establishment, oversight of the Group s risk management framework, and developing and monitoring the Group s risk management policies.

The Group s risk management policies are established to identify and analyze the risks faced by the Group, and set appropriate risk limits and controls and to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Group s activities. The Group, through its training and management controls and procedures, aims to develop a disciplined and constructive control environment in which all employees understand their roles and obligations. Internal audit department undertakes both regular and ad hoc reviews of risk management controls and procedures, the results of which are reported to the Group s audit committee.

Credit risk

(i) Risk management

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Group s deposits placed with financial institutions (including structured deposit) and receivables from customers. To limit exposure to credit risk relating to deposits, the Group primarily places cash deposits only with large financial institutions in the PRC with acceptable credit ratings. The majority of the Group s trade accounts receivable relate to sales of petroleum and chemical products to related parties and third parties operating in the petroleum and chemical industries. No single customer accounted for greater than 10% of total accounts receivable as of December 31, 2018, except the amounts due from Sinopec Group Company and fellow subsidiaries. Management performs ongoing credit evaluations of the Group s customers financial condition and generally does not require collateral on trade accounts receivable. The Group maintains an impairment loss for doubtful accounts and actual losses have been within management s expectations.

The carrying amounts of cash and cash equivalents, time deposits with financial institutions, trade accounts and bills receivables, derivative financial instruments, financial assets at fair value through profit or loss and other receivables, represent the Group s maximum exposure to credit risk in relation to financial assets.

(ii) Impairment of financial assets

The Group s primary type of financial assets that are subject to the expected credit loss model is trade accounts receivables and other receivables.

The Group s cash deposits are placed only with large financial institutions with acceptable credit ratings, and there is no material impairment loss identified.

For trade accounts receivables, the group applies the IFRS 9 simplified approach to measuring expected credit losses which uses a lifetime expected loss allowance for all trade accounts receivables.

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38. FINANCIAL RISK MANAGEMENT AND FAIR VALUES *(Continued)*

***Credit risk** (Continued)*

To measure the expected credit losses, trade accounts receivables have been grouped based on shared credit risk characteristics and the days past due.

The expected loss rates are based on the payment profiles of sales over a period of 36 month before December 31, 2018 or January 1, 2018, respectively, and the corresponding historical credit losses experienced within this period. The historical loss rates are adjusted to reflect current and forward-looking information on macroeconomic factors affecting the ability of the customers to settle the receivables.

The detailed analysis of trade accounts receivables, based on which the Group generated its payment profile is listed in Note 15.

All of the entity s other receivables (Note 17) are considered to have low credit risk, and the loss allowance recognized during the period was therefore limited to 12 months expected losses. The Group considers low credit risk for other receivables when they have a low risk of default and the issuer has a strong capacity to meet its contractual cash flow obligations in the near term.

Liquidity risk

Liquidity risk is the risk that the Group will not be able to meet its financial obligations as they fall due. The Group s approach in managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the Group s reputation. Management prepares monthly cash flow budget to ensure that the Group will always have sufficient liquidity to meet its financial obligations as they fall due. The Group arranges and negotiates financing with financial institutions and maintains a certain level of standby credit facilities to reduce the Group s liquidity risk.

As of December 31, 2017 and 2018, the Group has standby credit facilities with several PRC financial institutions which provide borrowings up to RMB 361,852 and RMB 387,748 on an unsecured basis, at a weighted average interest rate of 3.40% and 3.87% per annum, respectively. As of December 31, 2017 and 2018, the Group s outstanding borrowings under these facilities were RMB 56,567 and RMB 21,236 and were included in debts, respectively.

The following table sets out the remaining contractual maturities at the balance sheet date of the Group s financial liabilities, which are based on contractual undiscounted cash flows (including interest payments computed using contractual rates or, if floating, based on prevailing rates current at the balance sheet date) and the earliest date the Group would be required to repay:

	December 31, 2017					
	Carrying amount RMB	Total contractual undiscounted cash flow RMB	Within 1 year or on demand RMB	More than 1 year but less than 2 years RMB	More than 2 years but less than 5 years RMB	More than 5 years RMB
Short-term debts	55,338	56,562	56,562			
Long-term debts	55,804	66,202	2,166	14,477	32,316	17,243
Loans from Sinopec Group Company and fellow subsidiaries	68,631	68,950	25,504	4,439	39,007	
Derivatives financial liabilities	2,665	2,665	2,665			
Trade accounts payable and bills payable	206,535	206,535	206,535			
Other payables	96,923	96,923	96,923			
	485,896	**497,837**	**390,355**	**18,916**	**71,323**	**17,243**

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38. FINANCIAL RISK MANAGEMENT AND FAIR VALUES *(Continued)*

Liquidity risk *(Continued)*

	December 31, 2018					
	Carrying amount RMB	Total contractual undiscounted cash flow RMB	Within 1 year or on demand RMB	More than 1 year but less than 2 years RMB	More than 2 years but less than 5 years RMB	More than 5 years RMB
Short-term debts	29,462	30,123	30,123			
Long-term debts	51,011	61,809	1,889	16,938	27,190	15,792
Loans from Sinopec Group Company and fellow subsidiaries	74,181	75,207	32,127	37,977	3,741	1,362
Derivatives financial liabilities	13,571	13,571	13,571			
Trade accounts payable and bills payable	192,757	192,757	192,757			
Other payables	85,790	85,790	85,790			
	446,772	**459,257**	**356,257**	**54,915**	**30,931**	**17,154**

Management believes that the Group s current cash on hand, expected cash flows from operations and available standby credit facilities from financial institutions will be sufficient to meet the Group s short-term and long-term capital requirements.

Market risk

Market risk is the risk that changes in market prices, such as foreign exchange rates and interest rates. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimizing the return on risk.

Currency risk

Currency risk arises on financial instruments that are denominated in a currency other than the functional currency in which they are measured. The Group s currency risk exposure primarily relates to short-term and long-term debts and loans from Sinopec Group Company and fellow subsidiaries denominated in US Dollars. The Group enters into foreign exchange contracts to manage its currency risk exposure.

Included in short-term and long-term debts and loans from Sinopec Group Company and fellow subsidiaries of the Group are the following amounts denominated in a currency other than the functional currency of the entity to which they relate:

	December 31, 2017	December 31, 2018
Gross exposure arising from loans		
US Dollars	204	668

A 5 percent strengthening/weakening of RMB against the following currencies as of December 31, 2017 and 2018 would have increased/decreased net income of the Group by the amounts shown below. This analysis has been determined assuming that the change in foreign exchange rates had occurred at the balance sheet date and had been applied to the foreign currency balances to which the Group has significant exposure as stated above, and that all other variables, in particular interest rates, remain constant. The analysis is performed on the same basis for 2017.

	December 31, 2017	December 31, 2018
US Dollars	50	172

Other than the amounts as disclosed above, the amounts of other financial assets and liabilities of the Group are substantially denominated in the functional currency of respective entity within the Group.

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38. FINANCIAL RISK MANAGEMENT AND FAIR VALUES *(Continued)*

Interest rate risk

The Group s interest rate risk exposure arises primarily from its short-term and long-term debts. Debts bearing interest at variable rates and at fixed rates expose the Group to cash flow interest rate risk and fair value interest rate risk respectively. The interest rates of short-term and long-term debts, and loans from Sinopec Group Company and fellow subsidiaries of the Group are disclosed in Note 26.

As of December 31, 2017, it is estimated that a general increase/decrease of 100 basis points in variable interest rates, with all other variables held constant, would decrease/increase the Group s net income by approximately RMB 450. As of December 31, 2018, it is estimated that a general increase/decrease of 100 basis points in variable interest rates, with all other variables held constant, would decrease/increase the Group s net income by approximately RMB 424. This sensitivity analysis has been determined assuming that the change of interest rates was applied to the Group s debts outstanding at the balance sheet date with exposure to cash flow interest rate risk. The analysis is performed on the same basis for 2017.

Commodity price risk

The Group engages in oil and gas operations and is exposed to commodity price risk related to price volatility of crude oil, refined oil products and chemical products. The fluctuations in prices of crude oil, refined oil products and chemical products could have significant impact on the Group. The Group uses derivative financial instruments, including commodity futures and swaps, to manage a portion of this risk.

As of December, 31, 2017 and 2018, the Group had certain commodity contracts of crude oil, refined oil product and chemical products designated as qualified cash flow hedges and economic hedges. As of December 31, 2017 and 2018, the fair value of such derivative hedging financial instruments is derivative financial assets of RMB 515 and RMB 7,844, respectively, and derivative financial liabilities of RMB 2,624 and RMB 13,568, respectively.

As of December 31, 2017, it is estimated that a general increase/decrease of USD 10 per barrel in basic price of derivative financial instruments, with all other variables held constant, would impact the fair value of derivative financial instruments, which would decrease/increase the Group s net income by approximately RMB 4,049 and decrease/increase the Group s other reserves by approximately RMB 701. As of December 31, 2018, it is estimated that a general increase/decrease of USD 10 per barrel in basic price of derivative financial instruments, with all other variables held constant, would impact the fair value of derivative financial instruments, which would decrease/increase the Group s net income for the period by approximately RMB 197 and increase/decrease the Group s other reserves by approximately RMB 6,850. This sensitivity analysis has been determined assuming that the change in prices had occurred at the balance sheet date and the change was applied to the Group s derivative financial instruments at that date with exposure to commodity price risk. The analysis is performed on the same basis for 2017.

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38. FINANCIAL RISK MANAGEMENT AND FAIR VALUES *(Continued)*

Fair values

(i) Financial instruments carried at fair value

The following table presents the carrying value of financial instruments measured at fair value at the balance sheet date across the three levels of the fair value hierarchy defined in IFRS 7, *Financial Instruments: Disclosures*, with the fair value of each financial instrument categorized in its entirety based on the lowest level of input that is significant to that fair value measurement. The levels are defined as follows:

- Level 1 (highest level): fair values measured using quoted prices (unadjusted) in active markets for identical financial instruments.

- Level 2: fair values measured using quoted prices in active markets for similar financial instruments, or using valuation techniques in which all significant inputs are directly or indirectly based on observable market data.

- Level 3 (lowest level): fair values measured using valuation techniques in which any significant input is not based on observable market data.

	December 31, 2017			
	Level 1 RMB	**Level 2 RMB**	**Level 3 RMB**	**Total RMB**
Assets				
Financial assets at fair value through profit and loss:				
- Structured deposit			51,196	51,196
Available-for-sale financial assets:				
- Listed	178			178
Derivative financial instruments:				
- Derivative financial assets	343	183		526
	521	**183**	**51,196**	**51,900**
Liabilities				
Derivative financial instruments:				
- Derivative financial liabilities	1,277	1,388		2,665
	1,277	**1,388**		**2,665**

	December 31, 2018			
	Level 1 RMB	**Level 2 RMB**	**Level 3 RMB**	**Total RMB**
Assets				
Financial assets at fair value through profit and loss:				
- Structured deposit			25,550	25,550
- Equity investments, listed and at quoted market price	182			182
Derivative financial instruments:				
- Derivative financial assets	874	7,013		7,887
Financial assets at fair value through other compre-hensive income:				
- Equity investments	127		1,323	1,450
	1,183	**7,013**	**26,873**	**35,069**
Liabilities				
Derivative financial instruments:				
- Derivative financial liabilities	5,500	8,071		13,571
	5,500	**8,071**		**13,571**

During the years ended December 31, 2017 and 2018, there was no transfer between instruments in Level 1 and Level 2.

Management of the Group uses discounted cash flow model with inputted interest rate and commodity index, which were influenced by historical fluctuation and the probability of market fluctuation, to evaluate the fair value of the structural deposits classified as level 3 financial assets.

38. FINANCIAL RISK MANAGEMENT AND FAIR VALUES *(Continued)*

Fair values *(Continued)*

(ii) Fair values of financial instruments carried at other than fair value

The disclosures of the fair value estimates, and their methods and assumptions of the Group s financial instruments, are made to comply with the requirements of IFRS 7 and IFRS 9 and should be read in conjunction with the Group s consolidated financial statements and related notes. The estimated fair value amounts have been determined by the Group using market information and valuation methodologies considered appropriate. However, considerable judgment is required to interpret market data to develop the estimates of fair value. Accordingly, the estimates presented herein are not necessarily indicative of the amounts the Group could realize in a current market exchange. The use of different market assumptions and/or estimation methodologies may have a material effect on the estimated fair value amounts.

The fair values of the Group s financial instruments carried at other than fair value (other than long-term indebtedness and investments in unquoted equity securities) approximate their carrying amounts due to the short-term maturity of these instruments. The fair values of long-term indebtedness are estimated by discounting future cash flows using current market interest rates offered to the Group that range between 1.79% to 4.90% and 2.76% to 4.90% for the years ended December 31, 2017 and 2018, respectively. The following table presents the carrying amount and fair value of the Group s long-term indebtedness other than loans from Sinopec Group Company and fellow subsidiaries as of December 31, 2017 and 2018:

	December 31,	
	2017 RMB	**2018 RMB**
Carrying amount	79,738	63,085
Fair value	78,040	62,656

The Group has not developed an internal valuation model necessary to estimate the fair value of loans from Sinopec Group Company and fellow subsidiaries as it is not considered practicable to estimate their fair values because the cost of obtaining discount and borrowing rates for comparable borrowings would be excessive based on the Reorganization, the Group s existing capital structure and the terms of the borrowings.

Except for the above items, the financial assets and liabilities of the Group are carried at amounts not materially different from their fair values as of December 31, 2017 and 2018.

39. ACCOUNTING ESTIMATES AND JUDGMENTS

The Group s financial condition and results of operations are sensitive to accounting methods, assumptions and estimates that underlie the preparation of the consolidated financial statements. Management bases the assumptions and estimates on historical experience and on various other assumptions that it believes to be reasonable and which form the basis for making judgments about matters that are not readily apparent from other sources. On an ongoing basis, management evaluates its estimates. Actual results may differ from those estimates as facts, circumstances and conditions change.

The selection of critical accounting policies, the judgments and other uncertainties affecting application of such policies and the sensitivity of reported results to changes in conditions and assumptions are factors to be considered when reviewing the consolidated financial statements. The significant accounting policies are set forth in Note 2. Management believes the following critical accounting policies involve the most significant judgments and estimates used in the preparation of the consolidated financial statements.

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39. ACCOUNTING ESTIMATES AND JUDGMENTS *(Continued)*

Oil and gas properties and reserves

The accounting for the exploration and production s oil and gas activities is subject to accounting rules that are unique to the oil and gas industry. There are two methods to account for oil and gas business activities, the successful efforts method and the full cost method. The Group has elected to use the successful efforts method. The successful efforts method reflects the volatility that is inherent in exploring for mineral resources in that costs of unsuccessful exploratory efforts are charged to expense as they are incurred. These costs primarily include dry hole costs, seismic costs and other exploratory costs. Under the full cost method, these costs are capitalized and written-off or depreciated over time.

Engineering estimates of the Group s oil and gas reserves are inherently imprecise and represent only approximate amounts because of the subjective judgments involved in developing such information. There are authoritative guidelines regarding the engineering criteria that have to be met before estimated oil and gas reserves can be designated as proved . Proved and proved developed reserves estimates are updated at least annually and take into account recent production and technical information about each field. In addition, as prices and cost levels change from year to year, the estimate of proved and proved developed reserves also changes. This change is considered a change in estimate for accounting purposes and is reflected on a prospective basis in relation to depreciation rates. Oil and gas reserves have a direct impact on the assessment of the recoverability of the carrying amounts of oil and gas properties reported in the financial statements. If proved reserves estimates are revised downwards, earnings could be affected by changes in depreciation expense or an immediate write-down of the property s carrying amount.

Future dismantlement costs for oil and gas properties are estimated with reference to engineering estimates after taking into consideration the anticipated method of dismantlement required in accordance with industry practices in similar geographic area, including estimation of economic life of oil and gas properties, technology and price level. The present values of these estimated future dismantlement costs are capitalized as oil and gas properties with equivalent amounts recognized as provisions for dismantlement costs.

Despite the inherent imprecision in these engineering estimates, these estimates are used in determining depreciation expense, impairment loss and future dismantlement costs. Capitalized costs of proved oil and gas properties are amortized on a unit-of-production method based on volumes produced and reserves.

Impairment for long-lived assets

If circumstances indicate that the net book value of a long-lived asset may not be recoverable, the asset may be considered impaired , and an impairment loss may be recognized in accordance with IAS 36 Impairment of Assets . The carrying amounts of long-lived assets are reviewed periodically in order to assess whether the recoverable amounts have declined below the carrying amounts. These assets are tested for impairment whenever events or changes in circumstances indicate that their recorded carrying amounts may not be recoverable. When such a decline has occurred, the carrying amount is reduced to recoverable amount. For goodwill, the recoverable amount is estimated annually. The recoverable amount is the greater of the net selling price and the value in use. It is difficult to precisely estimate selling price because quoted market prices for the Group s assets or cash-generating units are not readily available. In determining the value in use, expected cash flows generated by the asset or the cash-generating unit are discounted to their present value, which requires significant judgment relating to level of sale volume, selling price, amount of operating costs and discount rate. Management uses all readily available information in determining an amount that is a reasonable approximation of recoverable amount, including estimates based on reasonable and supportable assumptions and projections of sale volume, selling price, amount of operating costs and discount rate.

Depreciation

Property, plant and equipment, other than oil and gas properties, are depreciated on a straight-line basis over the estimated useful lives of the assets, after taking into account the estimated residual value. Management reviews the estimated useful lives of the assets at least annually in order to determine the amount of depreciation expense to be recorded during any reporting period. The useful lives are based on the Group s historical experience with similar assets and take into account anticipated technological changes. The depreciation expense for future periods is adjusted if there are significant changes from previous estimates.

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39. ACCOUNTING ESTIMATES AND JUDGMENTS *(Continued)*

Measurement of expected credit losses

The Group measures and recognizes expected credit losses, considering reasonable and supportable information about the relevant past events, current conditions and forecasts of future economic conditions. The Group regularly monitors and reviews the assumptions used for estimating expected credit losses.

Allowance for diminution in value of inventories

If the costs of inventories become higher than their net realizable values, an allowance for diminution in value of inventories is recognized. Net realizable value represents the estimated selling price in the ordinary course of business, less the estimated costs of completion and the estimated costs necessary to make the sale. Management bases the estimates on all available information, including the current market prices of the finished goods and raw materials, and historical operating costs. If the actual selling prices were to be lower or the costs of completion were to be higher than estimated, the actual allowance for diminution in value of inventories could be higher than estimated.

40. PARENT AND ULTIMATE HOLDING COMPANY

The directors consider the parent and ultimate holding company of the Group as of December 31, 2018 is Sinopec Group Company, a state-owned enterprise established in the PRC. This entity does not produce financial statements available for public use.

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41. RESERVES

	2017 RMB	2018 RMB
Capital reserve (Note (a))		
Balance as of January 1	26,290	26,326
Transaction with non-controlling interests	(13)	(12)
Others	49	(261)
Balance as of December 31	26,326	26,053
Share premium (Note (b))		
Balance as of January 1	55,850	55,850
Balance as of December 31	55,850	55,850
Statutory surplus reserve (Note (c))		
Balance as of January 1	79,640	82,682
Appropriation	3,042	3,996
Balance as of December 31	82,682	86,678
Discretionary surplus reserve		
Balance as of January 1	117,000	117,000
Balance as of December 31	117,000	117,000
Other reserves		
Change in accounting policy		(12)
Balance as of January 1	424	(2,946)
Other comprehensive income	(3,481)	(7,618)
Amounts transferred to cash flow hedge reserves initially recognized by hedged items		5,269
Others	123	818
Balance as of December 31	(2,934)	(4,477)
Retained earnings (Note (d))		
Change in accounting policy		12
Balance as of January 1	310,719	326,137
Net income attributable to owners of the Company	51,244	61,618
Final dividend inspect of the previous year, approved and paid during the year (Note (e))	(20,582)	(48,428)
Interim dividend (Note (f))	(12,107)	(19,371)
Appropriation	(3,042)	(3,996)
Others	(107)	(851)
Balance as of December 31	326,125	315,109
	605,049	596,213

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41. RESERVES *(Continued)*

Note:

(a) The capital reserve represents (i) the difference between the total amount of the par value of shares issued and the amount of the net assets transferred from Sinopec Group Company in connection with the Reorganization (Note 1), and (ii) the difference between the considerations paid over or received the amount of the net assets of entities and related operations acquired from or sold to Sinopec Group Company and non-controlling interests.

(b) The application of the share premium account is governed by Sections 167 and 168 of the PRC Company Law.

(c) According to the PRC Company Law and the Article of Association of the Company, the Company is required to transfer 10% of its net income determined in accordance with the accounting policies complying with Accounting Standards for Business Enterprises (ASBE), adopted by the Group to statutory surplus reserve. In the event that the reserve balance reaches 50% of the registered capital, no transfer is required. The transfer to this reserve must be made before distribution of a dividend to shareholders. Statutory surplus reserve can be used to make good previous years losses, if any, and may be converted into share capital by issuing of new shares to shareholders in proportion to their existing shareholdings or by increasing the par value of the shares currently held by them, provided that the balance after such issue is not less than 25% of the registered capital.

During the years ended December 31, 2016, 2017 and 2018, the Company transferred RMB nil, RMB 3,042 and RMB 3,996 respectively, being 10% of the net income determined in accordance with the accounting policies complying with ASBE, to this reserve.

(d) As of December 31, 2017 and 2018, the amount of retained earnings available for distribution was RMB 177,049 and RMB 143,148, respectively, being the amount determined in accordance with ASBE. According to the Articles of Association of the Company, the amount of retained earnings available for distribution to owners of the Company is the lower of the amount determined in accordance with the accounting policies complying with ASBE and the amount determined in accordance with the accounting policies complying with IFRS.

Pursuant to a resolution passed at the director s meeting on March 22, 2019, final dividends in respect of the year ended December 31, 2018 of RMB 0.26 per share totaling RMB 31,479 were proposed for shareholders approval at the Annual General Meeting. Final cash dividend for the year ended December 31, 2018 proposed after the balance sheet date has not been recognized as a liability at the balance sheet date.

(e) Pursuant to the shareholders approval at the Annual General Meeting on June 28, 2017, a final dividend of RMB 0.17 per share totaling RMB 20,582 according to total shares as of July 18, 2017 was approved. All dividends have been paid in the year ended December 31, 2017.

Pursuant to the shareholders approval at the Annual General Meeting on May 15, 2018, a final dividend of RMB 0.40 per share totaling RMB 48,428 according to total shares as of June 4, 2018 was approved. All dividends have been paid in the year ended December 31, 2018.

(f) Pursuant to the Company s Articles of Association and a resolution passed at the Directors meeting on August 25, 2017, the directors authorized to declare the interim dividend for the year ended December 31, 2017 of RMB 0.10 per share totaling RMB 12,107. Dividends were paid on September 20, 2017.

Pursuant to the Company s Articles of Association and a resolution passed at the Directors meeting on August 24, 2018, the directors authorized to declare the interim dividend for the year ended December 31, 2018 of RMB 0.16 per share totaling RMB 19,371. Dividends were paid on September 12, 2018.

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SUPPLEMENTAL INFORMATION ON OIL AND GAS

PRODUCING ACTIVITIES (UNAUDITED)

(All currency amounts in million)

In accordance with Accounting Standards Codification (ASC) Topic 932 Extractive Activities - Oil and Gas , issued by the Financial Accounting Standards Board of the United States, Rule 4-10 of Regulation S-X , issued by Securities and Exchange Commission (SEC), and in accordance with Industrial Information Disclosure Guidelines for Public Company - No. 8 Oil and Gas Exploitation , issued by Shanghai Stock Exchange, this section provides supplemental information on oil and gas exploration and producing activities of the Group and its equity method investments at December 31, 2017 and 2018, and for the years then ended in the following six separate tables. Tables I through III provide historical cost information under IFRS pertaining to capitalized costs related to oil and gas producing activities; costs incurred in oil and gas exploration and development; and results of operation related to oil and gas producing activities. Tables IV through VI present information on the Group s and its equity method investments estimated net proved reserve quantities; standardized measure of discounted future net cash flows; and changes in the standardized measure of discounted cash flows.

Tables I to VI of supplemental information on oil and gas producing activities set out below represent information of the Company and its consolidated subsidiaries and equity method investments.

Table I: Capitalized costs related to oil and gas producing activities

	Years ended December 31, 2016			2017			2018		
			RMB			RMB			RMB
	Total	China	Other countries	Total	China	Other countries	Total	China	Other countries
The Group									
Property cost, wells and related equipments and facilities	650,686	606,493	44,193	667,657	625,621	42,036	695,724	651,531	44,193
Supporting equipments and facilities	192,877	192,855	22	210,711	210,694	17	199,321	199,304	17
Uncompleted wells, equipments and facilities	52,935	52,931	4	41,397	41,389	8	40,778	40,770	8
Total capitalized costs	**896,498**	**852,279**	**44,219**	**919,765**	**877,704**	**42,061**	**935,823**	**891,605**	**44,218**
Accumulated depreciation, depletion, amortization and impairment losses	(528,636)	(495,538)	(33,098)	(601,318)	(565,651)	(35,667)	(658,093)	(618,593)	(39,500)
Net capitalized costs	**367,862**	**356,741**	**11,121**	**318,447**	**312,053**	**6,394**	**277,730**	**273,012**	**4,718**
Equity method investments									
Share of net capitalized costs of associates and joint ventures	**9,337**		**9,337**	**6,357**		**6,357**	**6,304**		**6,304**
Total of the Group s and its equity method investments net capitalized costs	**377,199**	**356,741**	**20,458**	**324,804**	**312,053**	**12,751**	**284,034**	**273,012**	**11,022**

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SUPPLEMENTAL INFORMATION ON OIL AND GAS

PRODUCING ACTIVITIES (UNAUDITED)

(All currency amounts in million)

Table II: Costs incurred in oil and gas exploration and development

	Years ended December 31,								
	2016			2017			2018		
			RMB			RMB			RMB
	Total	China	Other countries	Total	China	Other countries	Total	China	Other countries
The Group									
Exploration	10,942	10,942		11,589	11,589		12,108	12,108	
Development	32,280	31,918	362	30,844	30,710	134	27,453	27,329	124
Total costs incurred	**43,222**	**42,860**	**362**	**42,433**	**42,299**	**134**	**39,561**	**39,437**	**124**
Equity method investments									
Share of costs of exploration and development of associates and joint ventures	**719**		**719**	**724**		**724**	**793**		**793**
Total of the Group s and its equity method investments exploration and development costs	**43,941**	**42,860**	**1,081**	**43,157**	**42,299**	**858**	**40,354**	**39,437**	**917**

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SUPPLEMENTAL INFORMATION ON OIL AND GAS

PRODUCING ACTIVITIES (UNAUDITED)

(All currency amounts in million)

Table III: Results of operations related to oil and gas producing activities

					Years ended December 31,				
		2016			**2017**			**2018**	
			RMB			**RMB**			**RMB**
	Total	**China**	**Other countries**	**Total**	**China**	**Other countries**	**Total**	**China**	**Other countries**
The Group									
Revenues									
Sales	36,720	36,720		43,644	43,644		57,860	57,860	
Transfers	58,571	54,555	4,016	73,447	67,311	6,136	89,569	84,532	5,037
	95,291	**91,275**	**4,016**	**117,091**	**110,955**	**6,136**	**147,429**	**142,392**	**5,037**
Production costs excluding taxes	(44,077)	(42,652)	(1,425)	(46,311)	(44,977)	(1,334)	(47,227)	(45,953)	(1,274)
Exploration expenses	(11,035)	(11,035)		(11,089)	(11,089)		(10,744)	(10,744)	
Depreciation, depletion, amortization and impairment losses	(73,534)	(68,594)	(4,940)	(80,399)	(74,856)	(5,543)	(62,832)	(60,877)	(1,955)
Taxes other than income tax	(4,576)	(4,576)		(8,726)	(8,726)		(11,400)	(11,400)	
Earnings before taxation	**(37,931)**	**(35,582)**	**(2,349)**	**(29,434)**	**(28,693)**	**(741)**	**15,226**	**13,418**	**1,808**
Income tax expense	(798)		(798)	1,188		1,188	709		709
Results of operation from producing activities	**(38,729)**	**(35,582)**	**(3,147)**	**(28,246)**	**(28,693)**	**447**	**15,935**	**13,418**	**2,517**
Equity method investments									
Revenues									
Sales	6,352		6,352	8,080		8,080	9,530		9,530
	6,352		**6,352**	**8,080**		**8,080**	**9,530**		**9,530**
Production costs excluding taxes	(2,205)		(2,205)	(2,748)		(2,748)	(2,455)		(2,455)
Exploration expenses									
Depreciation, depletion, amortization and impairment losses	(2,752)		(2,752)	(1,243)		(1,243)	(1,163)		(1,163)
Taxes other than income tax	(2,570)		(2,570)	(3,628)		(3,628)	(4,075)		(4,075)
Earnings before taxation	**(1,175)**		**(1,175)**	**461**		**461**	**1,837**		**1,837**
Income tax expense	(195)		(195)	(347)		(347)	(667)		(667)
Share of net income for producing activities of associates and joint ventures	**(1,370)**		**(1,370)**	**114**		**114**	**1,170**		**1,170**
Total of the Group s and its equity method investments results of operations for producing activities	**(40,099)**	**(35,582)**	**(4,517)**	**(28,132)**	**(28,693)**	**561**	**17,105**	**13,418**	**3,687**

The results of operations for producing activities for the years ended December 31, 2016, 2017 and 2018 are shown above. Revenues include sales to unaffiliated parties and transfers (essentially at third party sales prices) to other segments of the Group. Income taxes are based on statutory tax rates, reflecting allowable deductions and tax credits. General corporate overhead and interest income and expense are excluded from the results of operations.

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SUPPLEMENTAL INFORMATION ON OIL AND GAS

PRODUCING ACTIVITIES (UNAUDITED)

(All currency amounts in million)

Table IV: Reserve quantities information

The Group s and its equity method investments estimated net proved underground oil and gas reserves and changes thereto for the years ended December 31, 2016, 2017 and 2018 are shown in the following table.

Proved oil and gas reserves are those quantities of oil and gas, which by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulation before contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether the estimate is a deterministic estimate or probabilistic estimate. Due to the inherent uncertainties and the limited nature of reservoir data, estimates of underground reserves are subject to change as additional information becomes available.

Proved developed oil and gas reserves are proved reserves that can be expected to be recovered through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared with the cost of a new well.

Net reserves exclude royalties and interests owned by others and reflect contractual arrangements and obligation of rental fee in effect at the time of the estimate.

SUPPLEMENTAL INFORMATION ON OIL AND GAS

PRODUCING ACTIVITIES (UNAUDITED)

(All currency amounts in million)

Table IV: Reserve quantities information *(Continued)*

	Years ended December 31,								
	2016			2017			2018		
	Total	China	Other countries	Total	China	Other countries	Total	China	Other countries
The Group									
Proved developed and undeveloped reserves (oil) (million barrels)									
Beginning of year	1,957	1,902	55	1,256	1,216	40	1,293	1,261	32
Revisions of previous estimates	(505)	(509)	4	151	148	3	160	158	2
Improved recovery	35	35		90	86	4	95	90	5
Extensions and discoveries	41	41		60	60		79	79	
Production	(272)	(253)	(19)	(264)	(249)	(15)	(260)	(249)	(11)
End of year	**1,256**	**1,216**	**40**	**1,293**	**1,261**	**32**	**1,367**	**1,339**	**28**
Non-controlling interest in proved developed and undeveloped reserves at the end of year	**18**		**18**	**14**		**14**	**12**		**12**
Proved developed reserves									
Beginning of year	1,753	1,701	52	1,120	1,080	40	1,156	1,124	32
End of year	**1,120**	**1,080**	**40**	**1,156**	**1,124**	**32**	**1,271**	**1,244**	**27**
Proved undeveloped reserves									
Beginning of year	204	201	3	136	136		137	137	
End of year	**136**	**136**		**137**	**137**		**96**	**95**	**1**
Proved developed and undeveloped reserves (gas) (billion cubic feet)									
Beginning of year	7,551	7,551		7,160	7,160		6,985	6,985	
Revisions of previous estimates	(170)	(170)		(107)	(107)		(40)	(40)	
Improved recovery	66	66		72	72		142	142	
Extensions and discoveries	475	475		769	769		680	680	
Production	(762)	(762)		(909)	(909)		(974)	(974)	
End of year	**7,160**	**7,160**		**6,985**	**6,985**		**6,793**	**6,793**	
Proved developed reserves									
Beginning of year	6,439	6,439		6,436	6,436		6,000	6,000	
End of year	**6,436**	**6,436**		**6,000**	**6,000**		**5,822**	**5,822**	
Proved undeveloped reserves									
Beginning of year	1,112	1,112		724	724		985	985	
End of year	**724**	**724**		**985**	**985**		**971**	**971**	

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SUPPLEMENTAL INFORMATION ON OIL AND GAS

PRODUCING ACTIVITIES (UNAUDITED)

(All currency amounts in million)

Table IV: Reserve quantities information *(Continued)*

	Years ended December 31, 2016			2017			2018		
	Total	China	Other countries	Total	China	Other countries	Total	China	Other countries
Equity method investments									
Proved developed and undeveloped reserves of associates and joint ventures (oil) (million barrels)									
Beginning of year	286		286	296		296	306		306
Revisions of previous estimates	(2)		(2)	12		12	12		12
Improved recovery	3		3	8		8	4		4
Extensions and discoveries	41		41	20		20	5		5
Production	(32)		(32)	(30)		(30)	(28)		(28)
End of year	**296**		**296**	**306**		**306**	**299**		**299**
Proved developed reserves									
Beginning of year	260		260	273		273	273		273
End of year	**273**		**273**	**273**		**273**	**261**		**261**
Proved undeveloped reserves									
Beginning of year	26		26	23		23	33		33
End of year	**23**		**23**	**33**		**33**	**38**		**38**
Proved developed and undeveloped reserves of associates and joint ventures (gas) (billion cubic feet)									
Beginning of year	19		19	18		18	12		12
Revisions of previous estimates	3		3	(2)		(2)	2		2
Improved recovery							2		2
Extensions and discoveries									
Production	(4)		(4)	(4)		(4)	(3)		(3)
End of year	**18**		**18**	**12**		**12**	**13**		**13**
Proved developed reserves									
Beginning of year	18		18	18		18	12		12
End of year	**18**		**18**	**12**		**12**	**13**		**13**
Proved undeveloped reserves									
Beginning of year	1		1						
End of year									
Total of the Group and its equity method investments									
Proved developed and undeveloped reserves (oil) (million barrels)									
Beginning of year	2,243	1,902	341	1,552	1,216	336	1,559	1,261	338
End of year	**1,552**	**1,216**	**336**	**1,599**	**1,261**	**338**	**1,666**	**1,339**	**327**
Proved developed and undeveloped reserves (gas) (billion cubic feet)									
Beginning of year	7,570	7,551	19	7,178	7,160	18	6,997	6,985	12

End of year	**7,178**	**7,160**	**18**	**6,997**	**6,985**	**12**	**6,806**	**6,793**	**13**

SUPPLEMENTAL INFORMATION ON OIL AND GAS

PRODUCING ACTIVITIES (UNAUDITED)

(All currency amounts in million)

Table V: Standardized measure of discounted future net cash flows

The standardized measure of discounted future net cash flows, related to the above proved oil and gas reserves, is calculated in accordance with the requirements of ASC Topic 932 Extractive Activities - Oil and Gas , SEC Rule 4-10 of Regulation S-X , and Industrial Information Disclosure Guidelines for Public Company - No. 8 Oil and Gas Exploitation . Estimated future cash inflows from production are computed by applying the average, first-day-of-the-month price for oil and gas during the twelve-month period before the ending date of the period covered by the report to year-end quantities of estimated net proved reserves. Future price changes are limited to those provided by contractual arrangements in existence at the end of each reporting year. Future development and production costs are those estimated future expenditures necessary to develop and produce year-end estimated proved reserves based on year-end cost indices, assuming continuation of year-end economic conditions. Estimated future income taxes are calculated by applying appropriate year-end statutory tax rates to estimated future pre-tax net cash flows, less the tax basis of related assets. Discounted future net cash flows are calculated using 10% discount factors. This discounting requires a year-by-year estimate of when the future expenditure will be incurred and when the reserves will be produced.

The information provided does not represent management s estimate of the Group s and its equity method investments expected future cash flows or value of proved oil and gas reserves. Estimates of proved reserve quantities are imprecise and change over time as new information becomes available. Moreover, probable and possible reserves, which may become proved in the future, are excluded from the calculations. The arbitrary valuation requires assumptions as to the timing and amount of future development and production costs. The calculations are made for the years ended December 31, 2016, 2017 and 2018 and should not be relied upon as an indication of the Group s and its equity method investments future cash flows or value of its oil and gas reserves.

	Years ended December 31,								
	2016			2017			2018		
	Total	China	RMB Other countries	Total	China	RMB Other countries	Total	China	RMB Other countries
The Group									
Future cash flows	603,785	592,389	11,396	639,336	628,187	11,149	868,058	854,563	13,495
Future production costs	(271,650)	(266,549)	(5,101)	(292,789)	(287,914)	(4,875)	(381,893)	(376,532)	(5,361)
Future development costs	(20,241)	(15,615)	(4,626)	(24,999)	(20,314)	(4,685)	(22,310)	(19,300)	(3,010)
Future income tax expenses	(1,405)		(1,405)	(1,374)		(1,374)	(42,728)	(40,651)	(2,077)
Undiscounted future net cash flows	310,489	310,225	264	320,174	319,959	215	421,127	418,080	3,047
10% annual discount for estimated timing of cash flows	(102,342)	(102,332)	(10)	(97,082)	(97,115)	33	(126,910)	(126,617)	(293)
Standardized measure of discounted future net cash flows	208,147	207,893	254	223,092	222,844	248	294,217	291,463	2,754
Discounted future net cash flows attributable to non-controlling interests	114		114	112		112	1,239		1,239
Equity method investments									
Future cash flows	35,690		35,690	43,587		43,587	48,778		48,778
Future production costs	(10,783)		(10,783)	(12,131)		(12,131)	(12,462)		(12,462)
Future development costs	(3,444)		(3,444)	(4,692)		(4,692)	(4,433)		(4,433)

Future income tax expenses	(3,303)		(3,303)	(4,406)		(4,406)	(5,632)		(5,632)
Undiscounted future net cash flows	18,160		18,160	22,358		22,358	26,251		26,251
10% annual discount for estimated timing of cash flows	(7,969)		(7,969)	(9,803)		(9,803)	(13,012)		(13,012)
Standardized measure of discounted future net cash flows	10,191		10,191	12,555		12,555	13,239		13,239
Total of the Group s and its equity method investments results of standardized measure of discounted future net cash flows	**218,338**	**207,893**	**10,445**	**235,647**	**222,844**	**12,803**	**307,456**	**291,463**	**15,993**

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SUPPLEMENTAL INFORMATION ON OIL AND GAS

PRODUCING ACTIVITIES (UNAUDITED)

(All currency amounts in million)

Table VI: Changes in the standardized measure of discounted cash flows

	Years ended December 31, 2016 RMB	2017 RMB	2018 RMB
The Group			
Sales and transfers of oil and gas produced, net of production costs	(46,637)	(62,054)	(88,802)
Net changes in prices and production costs	(53,715)	7,487	98,952
Net changes in estimated future development cost	6,073	(7,320)	(5,468)
Net changes due to extensions, discoveries and improved recoveries	15,113	29,799	41,385
Revisions of previous quantity estimates	(48,479)	20,608	22,040
Previously estimated development costs incurred during the year	9,370	5,747	9,507
Accretion of discount	30,340	20,909	22,405
Net changes in income taxes	6,363	(231)	(28,894)
Net changes for the year	**(81,572)**	**14,945**	**71,125**
Equity method investments			
Sales and transfers of oil and gas produced, net of production costs	(1,577)	(1,704)	(3,001)
Net changes in prices and production costs	(3,952)	2,479	1,620
Net changes in estimated future development cost	(534)	(856)	(196)
Net changes due to extensions, discoveries and improved recoveries	1,887	1,205	341
Revisions of previous quantity estimates	(92)	688	818
Previously estimated development costs incurred during the year	322	206	272
Accretion of discount	1,308	967	1,196
Net changes in income taxes	464	(621)	(366)
Net changes for the year	**(2,174)**	**2,364**	**684**
Total of the Group s and its equity method investments results of net changes for the year	**(83,746)**	**17,309**	**71,809**