

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 20-F

(Mark One)

- ☐ **REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR 12(g) OF THE SECURITIES EXCHANGE ACT OF 1934**
or
☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2022.
or
☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
or
☐ **SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
Date of event requiring this shell company report _____
For the transition period from _____ to _____
Commission File Number 1-15006

中国石油天然气股份有限公司

(Exact name of Registrant as specified in its charter)

PetroChina Company Limited

(Translation of Registrant's name into English)

The People's Republic of China (the "PRC")
(Jurisdiction of incorporation or organization)

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(Address of principal executive offices)

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(Name, telephone, e-mail and/or facsimile number and address of registrant's contact person)

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

None⁽¹⁾

- (1) The Company has delisted its American Depositary Shares, or ADSs, from the NYSE on September 8, 2022.

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

ADSs⁽²⁾, each representing 100 Class H ordinary shares, par value RMB 1.00 per share.

H Shares, par value RMB1.00 per share

(Title of Class)

- (2) The Company has terminated its ADR Program on October 17, 2022.

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:

A Shares, par value RMB1.00 per share*

H Shares, par value RMB1.00 per share**

161,922,077,818 ⁽³⁾

21,098,900,000**

- ⁽³⁾ Includes 147,103,617,108 A Shares held by CNPC and 14,818,460,710 A Shares held by the public shareholders.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. ☒ Yes ☐ No

If this is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. ☐ Yes ☒ No

Note — Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 from their obligations under those Sections.

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ☒ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically, 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). ☒ Yes ☐ No

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

Large Accelerated Filer ☒Accelerated Filer ☐Non-Accelerated Filer ☐Emerging Growth company ☐

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. ☐

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 whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

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

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

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow. Item 17 ☐ Item 18 ☐

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 2b-2 of the Exchange Act). Yes ☐ No ☒

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

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Sections 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court. Yes ☐ No ☐

* PetroChina's A Shares are listed and traded on the Shanghai Stock Exchange.

** PetroChina's H Shares are listed and traded on The Stock Exchange of Hong Kong Limited.

*** Includes 245,589,700 H Shares represented by the ADSs.

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CERTAIN TERMS AND CONVENTIONS

Conventions Which Apply to this Annual Report

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

- “CNPC” or “CNPC group” are to our parent, China National Petroleum Corporation and its affiliates and subsidiaries, excluding PetroChina, its subsidiaries and its interests in long-term investments, and where the context refers to any time prior to the establishment of CNPC, those entities and businesses which were contributed to CNPC upon its establishment.
- “PetroChina”, “we”, “our”, “our company”, “the Company” and “us” are to PetroChina Company Limited, a joint stock company incorporated in the PRC with limited liability and its subsidiaries and branch companies.
- “PRC” or “China” are to the People’s Republic of China. Unless otherwise indicated, the policies, laws, regulations and interpretations adopted by the government in the mainland of China which are specifically referenced in this annual report are not applicable to Hong Kong, Macau or Taiwan. The Company’s assets, business and revenues in Hong Kong as well as in foreign countries and regions outside of the mainland of China are accounted as “overseas” and not “domestic”.

Our financial statements are presented in Renminbi or RMB. In this annual report, IFRS refers to International Financial Reporting Standards as issued by the International Accounting Standards Board.

Conversion Table

1 barrel-of-oil equivalent	= 1 barrel of crude oil	= 6,000 cubic feet of natural gas
1 cubic meter	= 35.315 cubic feet	
1 ton of crude oil	= 1 metric ton of crude oil	= 7.389 barrels of crude oil (assuming an API gravity of 34 degrees)

Certain Oil and Gas Terms

Unless the context indicates otherwise, the following terms have the meanings shown below:

“acreage”	The total area, expressed in acres, over which an entity has interests in exploration or production. Net acreage is the entity’s interest, expressed in acres, in the relevant exploration or production area.
“condensate”	Light hydrocarbon substances produced with natural gas that condense into liquid at normal temperatures and pressures associated with surface production equipment.
“crude oil”	Crude oil, including condensate and natural gas liquids.
“developed reserves”	<p>Under the reserves rules of the Securities and Exchange Commission, or SEC, developed reserves are reserves of any category that can be expected to be recovered:</p> <p>(i) through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and</p> <p>(ii) through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.</p>

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“development cost”	For a given period, costs incurred to obtain access to proved reserves and to provide facilities for extracting, treating, gathering and storing the oil and gas.
“finding cost”	For a given period, costs incurred in identifying areas that may warrant examination and in examining specific areas that are considered to have prospects of containing oil and gas reserves, including costs of drilling exploratory wells and exploratory-type test wells. Finding cost is also known as exploration cost.
“lifting cost”	For a given period, costs incurred to operate and maintain wells and related equipment and facilities, including applicable operating costs of support equipment and facilities and other costs of operating and maintaining those wells and related equipment and facilities. Lifting cost is also known as production cost.
“natural gas liquids”	Hydrocarbons that can be extracted in liquid form during natural gas production. Ethane and pentanes are the predominant components, with other heavier hydrocarbons also present in limited quantities.
“offshore”	Areas under water with a depth of five meters or greater.
“onshore”	Areas of land and areas under water with a depth of less than five meters.
“primary distillation capacity”	At a given point in time, the maximum volume of crude oil a refinery is able to process in its basic distilling units.
“proved reserves”	<p>Under the SEC reserves rules, proved 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 regulations — prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. The project to extract the hydrocarbons must have commenced or the operator must be reasonably certain that it will commence the project within a reasonable time.</p> <p>(i) The area of the reservoir considered as proved includes:</p> <p>(A) The area identified by drilling and limited by fluid contacts, if any, and (B) Adjacent undrilled portions of the reservoir that can, with reasonable certainty, be judged to be continuous with it and to contain economically producible oil or gas on the basis of available geoscience and engineering data.</p> <p>(ii) In the absence of data on fluid contacts, proved quantities in a reservoir are limited by the lowest known hydrocarbons (LKH) as seen in a well penetration unless geoscience, engineering, or performance data and reliable technology establishes a lower contact with reasonable certainty.</p> <p>(iii) Where direct observation from well penetrations has defined a highest known oil (HKO) elevation and the potential exists for an associated gas cap, proved oil reserves may be assigned in the structurally higher portions of the reservoir only if geoscience, engineering, or performance data and reliable technology establish the higher contact with reasonable certainty.</p> <p>(iv) Reserves which can be produced economically through application of improved recovery techniques (including, but not limited to, fluid injection) are included in the proved classification when:</p> <p>(A) Successful testing by a pilot project in an area of the reservoir with properties no more favorable than in the reservoir as a whole, the operation of an installed</p>

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program in the reservoir or an analogous reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and (B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12-month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

“reserves-to-production ratio”

For any given well, field or country, the ratio of proved reserves to annual production of crude oil or, with respect to natural gas, to wellhead production excluding flared gas.

“natural gas for sale”

Marketable production of gas on an “as sold” basis, excluding flared gas, injected gas and gas consumed in operations.

“undeveloped reserves”

Under the SEC reserves rules, undeveloped reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are scheduled to be drilled within five years, unless the specific circumstances, justify a longer time.

(iii) Under no circumstances shall estimates for undeveloped reserves be attributable to any acreage for which an application of fluid injection or other improved recovery technique is contemplated, unless such techniques have been proved effective by actual projects in the same reservoir or an analogous reservoir, or by other evidence using reliable technology establishing reasonable certainty.

References to:

- BOE is to barrels-of-oil equivalent,
- Mcf is to thousand cubic feet, and
- Bcf is to billion cubic feet.

FORWARD-LOOKING STATEMENTS

This annual report contains “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities and Exchange Act of 1934, as amended. These forward-looking statements are, by their nature, subject to significant risks and uncertainties. These forward-looking statements include, without limitation, statements relating to:

- the amounts and nature of future exploration, development and other capital expenditures;
- future prices and demand for crude oil, natural gas, refined products and chemical products;
- development projects;
- exploration prospects;
- reserves potential;
- production of oil and gas and refined and chemical products;
- development and drilling potential;
- expansion and other development trends of the oil and gas industry;
- the planned development of our natural gas operations;
- the planned expansion of our refined product marketing network;
- the planned expansion of our natural gas infrastructure;
- the prospects of our new energy and new materials business;
- our strategies and blueprints for addressing climate change;
- the anticipated benefit from the acquisition of certain overseas assets from CNPC, our parent company;
- the plan to continue to pursue attractive business opportunities outside China;
- our future overall business development and economic performance;
- our anticipated financial and operating information regarding, and the future development and economic performance of, our business;
- our anticipated market risk exposure arising from future changes in interest rates, foreign exchange rates and commodity prices; and
- other prospects of our business and operations.

The words “anticipate”, “believe”, “could”, “estimate”, “expect”, “intend”, “may”, “plan”, “seek”, “will” and “would” and similar expressions, as they related to us, are intended to identify a number of these forward-looking statements.

By their nature, forward-looking statements involve risks and uncertainties because they relate to events and depend on circumstances that will occur in the future and are beyond our control. The forward-looking statements reflect our current views with respect to future events and are not a guarantee of future performance. Actual results may differ materially from information contained in the forward-looking statements as a result of a number of factors, including, without limitation, the risk factors set forth in this annual report and the following:

- fluctuations in crude oil and natural gas prices;
- failure to achieve continued exploration success;
- failures or delays in achieving production from development projects;

- continued availability of capital and financing;

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- acquisitions and other business opportunities that we may pursue;
- general economic, market and business conditions, including volatility in interest rates, changes in foreign exchange rates and volatility in commodity markets;
- liability for remedial actions under environmental regulations;
- the actions of competitors;
- wars and acts of terrorism or sabotage;
- changes in policies, laws or regulations of the PRC, including changes in applicable tax rates;
- the other changes in global economic and political conditions, including those affecting the production, supply and demand and pricing of crude oil, refined products, petrochemical products and natural gas; and
- the other risk factors discussed in this annual report, and other factors beyond our control.

You should not place undue reliance on any forward-looking statements.

PART I

Item 1 — *IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISORS*

Not applicable. See “Item 6 — Directors, Senior Management and Employees — Directors, Senior Management and Supervisors” and “Item 16C—Principal Accountant Fees and Services”.

Item 2 — *OFFER STATISTICS AND EXPECTED TIMETABLE*

Not applicable.

Item 3 — *KEY INFORMATION*

Cash and Asset Flows within Our Organization

As a company incorporated in China, we operate our business primarily through our branch companies and subsidiaries in China. We also operate our international business through our overseas subsidiaries. We hold our interests in our subsidiaries through shareholding. We do not operate our business through variable interest entities. The cash flows within our organization mainly consist of payment of capital contributions, dividend distributions, loans and trade payables. For the information of our corporate structure, please refer to “Item 4 – Information on the Company.”

Since our shares were listed on The Stock Exchange of Hong Kong Limited (the “HKSE”) and New York Stock Exchange (the “NYSE”) in 2000, we have distributed dividends to our shareholders (including our ADS holders) twice a year, and we have continued to do so after our ADSs were delisted from the NYSE. When paying dividends to our non-PRC resident shareholders, we are obliged to withhold and pay tax on the dividends according to the *Enterprise Income Tax Law of the PRC* (the “EIT Law”), the *Individual Income Tax Law of the PRC* (the “IIT Law”), the implementing regulations of the EIT Law and the IIT law, the rules and interpretations of the State Taxation Administration (the “SAT”), the tax treaties or arrangements signed between China and foreign countries or Hong Kong and Macau. At present, we withhold and pay income tax for all shareholders of non-resident enterprises at the rate of 10%, as provided under Article 91 of the *Implementation Regulation of the EIT Law*. All the withholding tax rates discussed in this paragraph are based on the gross amount of dividends pursuant to the relevant tax laws. If any shareholder as a non-resident enterprise meets the conditions for a more preferential tax rate under any tax treaty, it may submit supporting documents such as a tax form and beneficial owner’s certificate to us in accordance with the *Administrative Measures for Non-Resident Taxpayers Enjoying Treaty Treatment* which has been implemented by the SAT since January 1, 2020. Once we receive complete supporting document, we will submit the same to the tax authorities for their retention and we will apply the applicable preferential tax rate for the shareholder. We withhold and pay personal income tax at a rate of 10% for non-resident individual shareholders who are residents of Hong Kong, Macau and other countries with which China has signed tax treaties which provide a tax rate at 10%. If any non-resident individual shareholder whose home country has a tax treaty with China that provide a tax rate lower than 10%, he/she needs to submit the tax form and beneficiary certificate to us, and we will submit the same to the tax authority for retention and we will apply the preferential tax rate for the shareholder. If a non-resident individual shareholder whose home country has a tax treaty with China providing a tax rate higher than 10% and less than 20%, we will withhold tax at the agreed effective tax rate. If the non-resident individual shareholder whose home country does not have any tax agreement with China or whose home country has a tax treaty with China providing a rate of 20% or otherwise, we will withhold the tax at 20%. For more details of income tax on dividends of non-resident shareholders, please refer to “Item 10 — Additional Information — Taxation” and “Item 8 — Financial Information — Dividend Policy”. Please note that our discussion of PRC tax law is not intended to provide and should not be construed as providing legal or tax advice to any particular investor. We urge you to consult your tax advisor.

Prior to paying dividends or other distributions to us, our subsidiaries will pay taxes in accordance with applicable tax laws and regulations of China or the jurisdictions in which they operate. The statutory rate of

enterprise income tax in China is 25% on taxable income, and enterprises that meet certain conditions can enjoy preferential treatment. In 2022, we paid approximately RMB54,686 million in the aggregate to our shareholders as dividends for the second half of 2021 and the first half of 2022, which included approximately RMB5,713 million paid to the holders of our H Shares (including ADSs) after withholding and paying the PRC withholding tax of approximately RMB591 million. See “Item 4 — Information on the Company — Regulatory Matters — Taxes, Fees and Royalties”, “Item 5 — Operating and Financial Review and Prospects—Liquidity and Capital Resources”, “Item 8 — Financial Information —Dividend Policy”, “Item 10 — Additional Information — Taxation”, “Item 10 — Additional Information — Memorandum and Articles of Association — Dividends”, the financial statements and the Note 12.

Although other financing means are available to us, our ability to pay dividends to our shareholders and to service our debt depends in part on the cash generated by our branch companies and the dividends paid to us by our subsidiaries. We and our PRC subsidiaries’ ability to distribute earnings are mainly subject to the following restrictions and limitations:

- *Accumulated profit:* Under PRC laws and regulations, we and our PRC subsidiaries can pay dividends only out of accumulated profit as determined in accordance with PRC accounting standards and regulations.
- *Statutory reserve fund:* Under PRC laws and regulations, PRC companies are required to set aside at least 10% of their accumulated after-tax profits each year, if any, to fund a certain statutory reserve fund, until the aggregate amount of such fund reaches 50% of their respective registered capital. Such reserve funds cannot be distributed as dividends, except as part of liquidation in the event of insolvency. In 2022, we allocated a total of RMB12,987 million to our statutory common reserve fund. See Note 32 to the financial statements for further details.
- *Capital requirements:* To achieve our strategies and to meet our contractual or other obligations, we and our subsidiaries need to retain sufficient cash to satisfy the capital requirements. We and our subsidiaries are subject to the limits on distribution of dividends as provided in the articles of associations. For example, our articles of association provides that we can distribute dividends only if our net profit attributable to owners and the accumulated undistributed profit for a year are positive, and our cash flow can satisfy our normal operation and sustainable development.
- *Debt instrument restrictions:* For the debts incurred by us or our subsidiaries, the instruments governing such debts may restrict our or our subsidiaries’ ability to pay dividends.
- *Foreign exchange regulation:* Cash transfers from China to outside of China are subject to foreign exchange regulations by the PRC government. Shortages in the availability of foreign currency may temporarily delay our ability to remit sufficient foreign currency to pay dividends or other payments, or otherwise satisfy our foreign currency denominated obligations. Remittance of dividends by us out of China is also subject to the review by the financial institutions engaging in foreign exchange settlement as approved by the State Administration of Foreign Exchange (the “SAFE”), and the SAFE may also exercise its supervision and inspection authority over our remittance of dividends out of China, which could delay the distribution of dividends to our overseas investors. Although we have not experienced any delay in distribution of dividends to our overseas investors in the past due to any issues in relation to foreign exchange regulation or shortage in foreign currency, we cannot rule out the possibility of the occurrence of such delay in the future. See “Item 3 – Key Information — Risk Factors — Risks Related to Pricing and Foreign Exchange”.

In 2022, the cash transfers between us and our subsidiaries mainly consisted of the following:

- Transfer from us to our subsidiaries
 - Contributed capital of approximately RMB5,221 million;
 - Repaid loans of approximately RMB70,296 million

- Transfer from our subsidiaries to us
 - Paid dividends of approximately RMB10,039 million;
 - Granted loans of approximately RMB81,734 million

The figures listed above with regard to our subsidiaries include both our domestic and overseas subsidiaries.

In addition, we are a group company with integrated upstream and downstream businesses. We and our subsidiaries work closely in the normal operations by supplying products and services to each other and settling the payments on an arm's length basis, which are performed pursuant to the relevant regulation requirements in all material respects. See "Item 7 — Major Shareholders and Related Party Transactions — Related Party Transactions."

At present, Hong Kong does not have foreign exchange regulations similar to those in the mainland of China, and the foreign exchange regulations in the mainland of China do not apply to Hong Kong. Therefore, at present, the transfer of funds by our subsidiaries in Hong Kong to out of Hong Kong is not subject to the restrictions under the foreign exchange regulations in the mainland of China. Our Hong Kong subsidiaries are free to transfer funds out of Hong Kong provided that they meet the general compliance obligations under Hong Kong law in terms of taxation, anti-money laundering, accounting rules, etc. In the future, if Hong Kong were to adopt any regulations that restrict the transfer of funds, and thereby affect the transfer of funds by our Hong Kong subsidiaries, our Hong Kong subsidiaries may be restricted in providing funds for operations outside of Hong Kong or distributing funds to their investors located out of Hong Kong.

Risk Factors

Our business is subject to various changing competitive, economic, social, political and regulatory and other related conditions. Such changing conditions entail certain risks, which are described below.

Risks Related to Government Regulation

Our operations in China contribute a large majority of our revenue. Accordingly, we are affected and regulated by the economic and industrial policies, laws and regulations adopted in China. This may in turn adversely affect our financial condition, operation results, liquidity, and the value of our shares. These effects are reflected mainly in the following respects:

(1) *In terms of general economic policies*: The Chinese government regulates China's economic development by stimulating general economic policies such as monetary and financial policy, fiscal and tax policy and foreign exchange policy. The application of any policy to us may affect our business decisions, production plans and strategy executions, which in turn may have an impact on our financial condition, operating results and value of our shares.

(2) *In terms of industrial policies, laws and regulations*: The business sector in which we operate is subject to regulation and regulatory control by the Chinese government. The regulation and regulatory control relate to many material aspects of our operations. As a result, we may face constraints and restrictions on our ability to implement our business strategies, to develop or expand our business operations or to maximize our profitability. For example:

- *Energy transition policy*: In order to address climate change concerns, the Chinese government has set the goal to hit carbon peak by 2030 and achieve carbon neutrality by 2060. To achieve that goal, China has introduced and is expected to introduce a series of economic policies and supporting laws and regulations. These regulations would pose severe challenges to traditional oil extraction and refining operations and drive us to adjust our operational strategies and initiate steps to expand into new energy business while continuing to develop our traditional business with high quality. If our efforts to address climate change fail to produce satisfactory results, the overall operations, liquidity, profitability and the value of the shares of our company may suffer an adverse effect.
- *Product pricing mechanism*: In China, the pricing of gasoline, diesel and natural gas products is subject to government regulation, and we cannot freely determine prices for these products. We are required to price these products in compliance with the Chinese government's pricing mechanism. As a major supplier of essential energy sources in China, we are not permitted to cease supply to the market even if market prices are not favorable and we cannot exceed the pricing limit set by the government.
- *Crude oil special gain levy*: China collects a crude oil special gain levy on all oil production companies that sell crude oil produced from China. At present, we are required to pay the crude oil special gain levy for the excessive revenue received by us from the sale of domestically produced crude oil above US\$65 per barrel.
- *Mineral rights granting system*: We are subject to various requirements under the *Mineral Resources Law of the PRC* and supporting laws and regulations, including those requirements relating to exploration licenses, production licenses, mineral rights fees, and minimum investment into mining blocks.
- *Ecological and environmental protection and safety production*: We are subject to a series of ecological and environmental protection and safety production laws and standards, which have become increasingly stringent over recent years in China with respect to the oil and gas industries.
- *Project approvals*: In China, the construction of significant refining and petrochemical facilities is subject to governmental approval. We presently have several significant projects pending approval.

from the relevant government authorities and will need approvals from the relevant government authorities in connection with several other significant projects. We do not have control over the timing and outcome of the final project approvals.

- *Oil and gas production targets* : The National Energy Administration of the PRC (“NEA”) publishes certain guiding targets for annual production of domestic energy companies. For example, for 2023, the NEA announced that its target is to procure China’s annual production of domestic crude oil to increase to about 205 million tons and annual production of domestic natural gas to increase by about 6 billion cubic meters, and at the same time, to vigorously promote the integrated development of oil and gas exploration and development and alternative energy. Although failure to achieve these targets will not subject us or other relevant companies to fines, these targets themselves would have an effect on our business decisions, hence, driving our management to make plans to work towards achievement of the pre-set targets.

(3) *In terms of generally applicable business laws and regulations* : We are subject to generally applicable business laws and regulations, including, without limitation, corporate governance, securities regulation, employee benefits, information protection, anti-monopoly and anti-money-laundering laws and regulations. We are required to continue to invest substantial management resources to ensure compliance with all these laws and regulations. Any noncompliance with any of these laws or regulations will subject our company to penalties and reputational risks, and in turn harm the interests of our investors. For example:

- *Anti-monopoly*: We are subject to anti-monopoly laws and regulations. We are prohibited from entering into or implementing anti-competitive agreements, abusing market position or conducting any concentration of business operators which has or may have the effect of excluding or limiting competition. Occupying a leading position in the oil and gas industry, we are more susceptible to anti-monopoly compliance risks. See the “Risks Related to Anti-Monopoly Initiatives” for a more detailed discussion of this risk.
- *Corporate governance and securities regulatory compliance* : Our securities are currently traded on the Shanghai Stock Exchange (“SSE”), and the HKSE. Although our securities have been delisted from the NYSE, they have not been deregistered from the SEC, and therefore, till the completion of the deregistration, we continue to have a reporting obligation under the Securities Exchange Act of 1934. Accordingly, we are subject to all the applicable requirements under the listing rules, disclosure rules, securities laws as well as corporate governance and compliance rules adopted in relevant jurisdictions. As a result, we are required to continue to invest substantial management resources to ensure compliance with all these requirements.

(4) *In terms of regulation and supervision of state-owned assets* : We are a company with controlling shares ultimately owned by the state. Our controlling shareholder CNPC is a state-owned enterprise. Although the State-owned Assets Supervision and Administration Commission of the State Council (“SASAC”) does not exert influence directly on us, it is positioned to make decisions on significant matters of CNPC in its capacity as shareholder and CNPC can in turn resolve on significant matters of our company in its capacity as shareholder (see the provisions regarding shareholders’ rights and obligations in our Articles of Association). As a consolidated subsidiary of CNPC, we are subject to certain regulations in relation to state-owned assets. For example, we are subject to the audits by the National Audit Office of the PRC relating to our business, finance and staff. For certain material transactions, we are required to retain external asset appraisal firms to evaluate the target assets. All these would increase our compliance burden. Please see “Item 7 — Major Shareholders and Related Party Transactions — Related Party Transactions” and “Item 3—Key Information—Risk Factors— Risks Related to Controlling Shareholder” for a detailed description of our transactions and relationships with our controlling shareholder.

(5) *National security concerns, foreign investment restrictions and other considerations* : The Chinese regulations requiring national security review with regard to foreign investment in certain sectors and overseas

offering and listing by certain domestic companies or prohibiting or restricting foreign investment in certain businesses in China, are not applicable to us in light of our current situation. Nevertheless, we cannot assure you that the circumstances will not change or those regulations will not be amended and become applicable to us in the future.

- *National security review of foreign investment* : According to the *Measures for Security Review of Foreign Investment* (the “Security Review Measures”) that were promulgated by the PRC government on December 19, 2020 and came into effect on January 18, 2021, where a foreign investor intends to invest in a business in China and seeks to obtain actual control of the business, and that business falls into a key sector that may cause national security concerns as set forth in the Security Review Measures, such investment should be filed with the Office of Foreign Investment Security Review (the “Security Review Office”) established by the PRC government for review. If the Security Review Office determines that, based on its review, such investment may have an impact on China’s national security, it may block the investment or grant a conditional approval. The Security Review Measures set forth a number of sectors where foreign investment would be subject to security review, and the critical energy and resources sectors are among them. The Security Review Measures delegate the China Securities Regulatory Commission (“CSRC”) to formulate rules regarding security review of foreign investment through purchasing shares of listed companies through stock exchanges. As of the date of this annual report, CSRC has not proposed any such rules. With regard to our company, as CNPC owns the majority of our share capital, it is our controlling shareholder. All other holders of our A Shares and H Shares (including ADSs) owned less than 20% of our share capital in the aggregate, and our H Shares (including ADSs) accounted for approximately 11.53% of our total share capital. Therefore, at present, based on our shareholding structure, our foreign investors are minority shareholders and do not have control over us. We believe that it is also extremely remote that our foreign investors could acquire actual control over us by holding our shares (including ADSs), and that the national security review requirement could be triggered. Nevertheless, we cannot assure you that the PRC government will not amend the Security Review Measures or promulgate new rules, including among other things, amending the conditions for triggering the security review. If the PRC government were to prohibit foreign persons from investing into our shares on the grounds of “national security concern”, we may have to take such actions including but not limited to buying back our H Shares (including ADSs) then issued and outstanding.
- *Overseas offering and listing*: On February 17, 2023, the CSRC issued the *Trial Measures for Administration of Overseas Offering and Listing of Securities by Domestic Enterprises* (the “Measures”). According to the Measures, for overseas offering and listing of securities by a PRC domestic company, that company shall submit filings with the CSRC. The company shall strictly abide by the national security laws, administrative regulations and relevant provisions such as foreign investment, cybersecurity, and data security, and earnestly perform their obligations to safeguard national security. Where security review is involved, relevant safety review procedures shall be performed in accordance with law before submitting to the CSRC. The company shall, in accordance with the requirements of the relevant competent departments under the State Council, employ measures such as timely rectification, making commitments, and divesting business assets to eliminate or avoid the impact on national security arising out of overseas offering and listing. The CSRC also stated that it does not require immediate filing for those companies that have already been listed overseas, until such companies submit a filing for a follow-on financing. We have obtained the necessary government approvals, including the CSRC’s approval, prior to offering of our H Shares and ADSs in 2000 and getting listed on the HKSE and the NYSE, and we currently have no refinancing plan, so at present we will not be required to make any filings with the CSRC under the Measures. If in the future we seek to conduct a follow-on overseas offering or listing on another foreign stock exchange, we would be required to make the requisite filings under the Measures. If we were to be subject to security review, we cannot rule out the possibility that the Chinese government may impose restriction on our overseas offering and listing, or require us to take such measures as rectification, making commitment or

divesting assets in order to eliminate or avoid the impact on national security arising out of our overseas offering and listing.

- *Foreign investment restrictions:* According to the *Special Management Measures for Foreign Investment Access (Negative List) (2021 Version)* (the “Negative List”) currently in effect in China, where any PRC domestic company operating in a sector in which foreign investment is prohibited under the Negative List intends to offer its shares and become listed on a foreign stock exchange, such company shall file the proposed overseas offering and listing with and obtain the approvals from the competent PRC governmental authorities, and it shall procure that at any time from and after the closing of its overseas offering and listing, its foreign investors will not participate in its business operation or management and its foreign ownership will not exceed certain limits. As of the date of this Annual Report, none of our business falls under the Negative List. On the contrary, our oil and gas exploration and development business and certain petrochemical business fall into the sectors in which foreign investment is encouraged under the *Industry Catalogue of Sectors Encouraging Foreign Investment of 2022*. Based on the foregoing, our business currently is not subject to foreign investment restrictions other than the national security review with regard to foreign investment in critical energy sector with actual control, as discussed above. If in the future the PRC government were to prohibit foreign investment in the sector in which we operate for any reason, we may face the following consequences pursuant to the Negative List: (i) any follow-on or new overseas share offering and overseas listing contemplated by us will need further approval by the competent PRC governmental authorities, although we have already received all required governmental approvals necessary for our initial offering and listing of our H Shares and ADSs in 2000; (ii) our foreign investors will not be permitted to participate in our business operations or management, although it is currently the case that our current holders of our H Shares (including ADSs) are financial investors only, who are entitled to vote at the shareholders’ meetings but do not participate in our business operation or management; and (iii) the percentage of foreign ownership in our company will be subject to certain limits, that is, the number of shares held by any foreign shareholder(s) individually may not exceed 10%, and collectively may not exceed 30%, of the total shares outstanding of the company.
- *Effects on our daily operations, etc.:* Although currently there are no specific restrictions imposed on our daily operations or our ability to legally transfer capital out of China or enter into normal business transactions with non-Chinese parties under any law or regulation on the grounds of “national security concerns” or foreign investment restrictions, we cannot assure you that the PRC government will not impose such type of restrictions on us in the future.

(6) *Impact of rapid evolution of PRC laws and regulations:* PRC laws, regulations and legal requirements dealing with economic matters have experienced rapid development during the decades after China’s adoption of the reform and opening-up policy, especially during the most recent two decades. Some laws having a material effect on our company may be put into force or implementation without any transitional period or only after a very short transitional period, which have required us to quickly adjust our operation and compliance strategies in order to comply with the new rules.

We are advised by King & Wood Mallesons (“KWM”), our external PRC counsel, that we have obtained the necessary permissions and approvals from the Chinese governmental authorities in all material aspects for operating our principal business in China, including but not limited to the exploration licenses, exploitation licenses, refined oil operation licenses, ecological and environmental protection and other permissions in relation to our business operations; and we have obtained all requisite approvals for offering our H Shares and ADSs in 2000 including but not limited to the approval from the CSRC. As advised by KWM, our current principal business operation in China and listing status on the SSE and the HKSE do not involve extra material approvals of the Chinese government; and neither the currently valid rules and interpretations of the CSRC, the Cyberspace Administration of China (“CAC”) nor other government agencies require us to obtain any additional approvals. No permissions or licenses requisite for maintaining our main business operations in China and our listing status on the SSE and HKSE have been denied. Please note that we have delisted from the NYSE and our ADR

program has been terminated. However, there is no assurance that we can obtain the permissions from the government for any new project and new offering in the future. If we or our subsidiaries (i) fail to receive or maintain the required permissions or approvals as set forth above, or (ii) inadvertently determine that such permissions or approvals are not required, we or our subsidiaries may be subject to administrative penalties, including fines, rectification, etc., which may result in fluctuations in our stock price and bring loss to our investors. In the future, if any applicable law, regulation or legal interpretation were to change and we are required to obtain any other permission or approval, such as in relation to data security associated with an overseas listing or security review in relation to outbound transmission of data, if we cannot obtain such permission or fail to pass any security review, we may be ordered to make rectifications for protection of critical information infrastructure data, or for protection of the personal data of our individual customers of our retail business on internet platforms, and if after such rectification, we still fail to meet the requirements of the CAC, such situation may cause an impact on our listing status on the HKSE and may also hinder any potential listing on other foreign exchanges.

We are also advised by KWM, our PRC and Hong Kong external counsel, that the Chinese economic policies, industry policies, laws and regulations with respect to mining rights, foreign exchange, pricing, taxation, general commercial affairs, anti-monopoly, foreign investment restrictions, data security reviews, etc. as referenced in this risk factor, are only applicable to the mainland of China. Therefore, “Risks Related to Government Regulation” is limited to the discussion of the risks associated with our exposure to government regulation in the mainland of China, except for the securities regulation of Hong Kong in connection with our listing of shares on HKSE. At present, we operate oil and gas trading, investment and retail businesses in Hong Kong and we do not have any oil and gas exploration, exploitation and refining businesses in Hong Kong. We have no business operations in Macau. We are advised by KWM that the laws and regulations of the mainland of China presently do not require us to cease, materially change or limit, in part or in whole, our trading, investment and retail business in Hong Kong, limit the development prospects of such business, nor require us not to comply with any law or regulation of Hong Kong, which could have a material adverse effect on our trading, investment and retail business in Hong Kong and our ability to maintain our listing status on the HKSE. We are also advised by KWM that Hong Kong has its own general commercial laws and regulations applicable to Hong Kong businesses, such as with regard to corporate, financial, securities, commercial, competition, labor, personal information protection, accounting and other regulations, as well as its own general economic policies, while it has no policies and regulations for the oil and gas industry which are commensurate to those in the mainland of China as discussed under this Risk Factors section, and it has no foreign exchange regulations and foreign investment regulations commensurate to those in the mainland of China. The current regulatory regime in Hong Kong has no material adverse effect on our oil and gas trading, investment and retail business in Hong Kong and our ability to maintain our listing status on HKSE, and, as of the date of this annual report, there are no material adverse changes expected in this regard. However, if in the future Hong Kong and/or Macau were to adopt equivalent or similar regulations in any respect commensurate to those in the mainland of China and thereby have an effect on our business in Hong Kong and/or Macau (if any, in the future) at that time, then the relevant aspects of the above discussed risk factor may also apply to our businesses in Hong Kong and/or Macau (if any, in the future).

See also “Item 4 — Information on the Company — Regulatory Matters” and the other relevant risk factors disclosed in this section, including without limitation, “Risks Related to Macro Economic Conditions”, “Risks Related to Competition”, “Risks Related to Financial Reporting Differences”, “Risks Related to Pricing and Exchange Rate”, “Risks Related to Environmental Protection and Safety Production”, and “Risks Related to Climate Change”, “Risks Related to Audit Reports Prepared by an Auditor Who Is Not Inspected by the Public Company Accounting Oversight Board” and “Risks Related to China’s Anti-Monopoly Initiatives”.

Risks Related to Controlling Shareholder

We are a company with controlling shares ultimately owned by the state. CNPC, which is controlled by SASAC, is our controlling shareholder. SASAC’s control over CNPC and CNPC’s control over us are mainly

shareholding relationships. SASAC holds the equity interests in state-owned enterprises (such as CNPC) on behalf of the Chinese government. As a result, in the corporate governance structure SASAC is a shareholder and accordingly has to comply with the shareholder's rights and obligations under the PRC Company Law. Likewise, CNPC's control over us is also subject to the shareholder's rights and obligations under the PRC Company Law. Although SASAC does not exert direct influence over us, it can make decisions on significant matters relating to CNPC in its capacity as CNPC's shareholder and CNPC can in turn resolve on significant matters of our company in its capacity as our shareholder (see the provisions in relation to shareholders' rights and obligations in our Articles of Association). As a consolidated subsidiary of CNPC, we are subject to certain regulations in relation to state-owned assets. For example, we are subject to the audits by the National Audit Office of the PRC on the compliance of our business, finance and staff. For material merger and acquisition transactions, we are required to retain external asset appraisal firms to evaluate the target assets.

As of March 31, 2023, CNPC beneficially owned approximately 82.62% of our share capital. As a result, CNPC can vote on significant matters relating to our company by exercising its rights as our controlling shareholder, as set forth in detail in our Articles of Association. Accordingly, CNPC is in a position to:

- direct our policies, management and other various affairs;
- subject to applicable PRC laws and regulations and provisions of our Articles of Association, affect the timing and amount of dividend payments and adopt amendments to certain of the provisions of our Articles of Association; and
- otherwise determine the outcome of most corporate actions and, subject to the regulatory requirements of the jurisdictions in which our shares are listed, cause our company to effect corporate transactions without the approval of minority shareholders.

CNPC's interests may occasionally conflict with those of some or all of our minority shareholders. We cannot assure you that CNPC, as our controlling shareholder, will always vote its shares in a way that benefits our minority shareholders.

In addition to its relationship with us as our controlling shareholder, CNPC by itself or through its affiliates also provides us with certain services and products necessary for our business activities, such as construction and technical services, production services, materials supply services, social services and financial services. The interests of CNPC and its affiliates as providers of these services and products to us may conflict with our interests.

Risks Related to Pricing and Exchange Rate

Our operations are affected by the volatility of prices for crude oil, refined products and natural gas. We adjust our crude oil median prices periodically based on the international trading prices for crude oil.

In recent years, international prices for crude oil have fluctuated substantially in response to a wide range of factors, including changes in global and regional economy, the 2020-2022 pandemic, politics, geopolitical tensions and supply and demand for crude oil. We do not have, and will not have, control over factors affecting international prices for crude oil. Fluctuations and volatility in crude oil prices have a significant impact on our results of operations. The decline in international crude oil prices would have a material adverse effect on our upstream business profits, and also have an impact on our downstream business profits through China's pricing mechanism of refined oil products, thereby adversely affecting our overall sales revenue and profits. Further, in the situations where crude oil prices remain at a low level for a long period of time, we would be required to determine and estimate whether our oil and gas assets may suffer impairment and, if so, the amount of the impairment. An increase in crude oil prices may, however, increase the production costs of refined products, reduce demand for our products and affect our operating profits.

Under the current refined oil pricing mechanism implemented by the PRC government, when there is a change in the average crude oil price in the international market during a given time period, the PRC government

can adjust refined oil prices. When international crude oil price experiences significant increases or volatility, the PRC government may strengthen its control over the refined oil prices. As a result, the regulation on refined product prices by the PRC government may reduce our profit and cause our refining assets to suffer impairment.

We negotiate the actual settlement price with natural gas users within the price range permitted by the PRC government. When the domestic price is lower than the international natural gas price, the cost of our imported natural gas will be higher than the sales price of our natural gas, which may reduce our revenues and profit, or result in losses, cause our natural gas assets to suffer impairment.

Currently, RMB is not a freely convertible currency. Conversion and remittance of foreign currencies out of China are subject to the supervision of the PRC government's foreign exchange administrative agencies, through filings and/or approval requirements. We receive and maintain a portion of cash and cash equivalents in foreign currencies as part of our international business. We receive most of our revenue in RMB. We convert RMB into foreign currencies from time to time to meet our foreign currency obligations, including repayment of foreign currency denominated debt, payment of overseas capital expenditures and equity investments, import of oil, gas, equipment and materials, and payment of dividends declared with respect to the H Shares. Although we have not been denied any application for converting foreign currency for use in our outbound investments, international trade and distribution of dividends, etc., the PRC government's regulation on foreign exchange may influence our international strategies, and/or prolong, delay or otherwise impose restrictions on our international business, and may also result in an increase of our financing costs in certain circumstances. For example, unlike our competitors located in countries where foreign exchange is not regulated, we must consider foreign exchange implications when making and pursuing our international business strategies. Where we expect to encounter difficulties in obtaining sufficient foreign currency to support certain international strategies, we may have to choose not to pursue those plans. Pursuant to the PRC's foreign exchange rules currently in effect, in most circumstances, the entities of our company incorporated in China cannot directly use their receipts in foreign currencies to satisfy their payment obligations in foreign currencies. Instead, they are required to convert their receipts in foreign currencies into RMB. As a result, they have to apply for and purchase foreign exchange when they have a need for funds in foreign currencies. We are prohibited from obtaining overseas financing through debt offerings or loan facilities, or providing guarantees for overseas debts, without the approval of and/or registration with the relevant PRC government authorities. Consequently, we may not be able to make use of certain low-cost sources of funds which may be available to non-PRC companies. We are required to obtain approvals from and/or register with the relevant PRC government authorities, and make filings with the foreign exchange authorities before we can conduct and/or finance our overseas direct investment projects. Therefore, we may not be able to take advantage of international business opportunities if we do not hold, or cannot obtain in a timely fashion, sufficient foreign currency.

The value of RMB against U.S. dollar and other currencies may fluctuate and is affected by, among other things, changes in China's political and economic conditions. The PRC government has implemented a floating exchange rate system to allow the value of RMB to fluctuate within a regulated band based on market supply and demand and by reference to a basket of foreign currencies. Because a substantial part of our imports and our outbound investments are settled in foreign currencies, the exchange rates between RMB and U.S. dollars and any other relevant foreign currencies may have an effect on our purchase costs and our investment costs.

Risks Related to the Enforceability of Securities Law Liabilities against Our Officers and Directors

PRC laws and regulations have their foundation in written laws, and PRC laws, regulations and legal requirements dealing with economic matters continue to evolve. PRC laws and regulations are different in certain material areas such as legislation, judicial system, and enforcement from those in the United States and other common law jurisdictions. Because of the non-binding nature of prior court decisions in China, the enforcement of laws, regulations and legal requirements involve some degree of uncertainty. Given that the PRC laws and regulations with respect to companies, securities and litigation are different in certain important aspects from those in the United States and other common law jurisdictions, and most of our assets are located in the PRC and

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most of our directors and substantially all of our executive officers reside in the PRC, it may be difficult for our shareholders (including investors of our ADSs) to enforce any judgments against our assets or the assets of our directors and officers located in China in an event that they believe their rights have been infringed and even if they successfully bring an action against us or our directors and officers and they are successful in an action of this kind.

The ability of U.S. government agencies, such as the U.S. Securities and Exchange Commission, or the SEC, and the U.S. Department of Justice, or the DOJ, to investigate and bring enforcement actions against us may be constrained by the PRC laws. For example, the securities regulators of the U.S. cannot directly enter into China to carry out investigations and collect evidence, but need to resort to the regulatory cooperation channels with the regulatory authorities in China, and the DOJ can only conduct investigations through bilateral judicial assistance channels with the PRC judicial authorities. According to Article 177 of the PRC Securities Law, the securities regulatory authority under the State Council of China may establish a supervision and administration cooperation mechanism with the securities regulatory authorities of other countries or regions for cross-border securities supervision and administration, and no foreign securities regulator is allowed to directly conduct investigations or evidence collection activities within the territory of China. Without the consent of the securities regulatory department of the State Council and other competent authorities under the State Council, no organization or individual may provide documents or materials relating to securities business activities to overseas parties.

Where an effective civil judgment or ruling of a foreign court requires recognition and enforcement by a court in China, a party may apply directly to a court in China which has the jurisdiction or apply to the foreign court for the foreign court to request recognition and enforcement by a court in China according to the treaty concluded or acceded to by China with the home country of the party or under the principle of reciprocity. After examining an application or request, if the court deems that the judgment or ruling does not violate the basic principles of the laws of China and the sovereignty, national security and public interest of China, the court shall issue a ruling to recognize the legal validity of the judgment or ruling and issue an order for enforcement as needed to enforce the judgment or ruling. If the court deems that the judgment or ruling violates the basic principles of the laws of China or the sovereignty, national security or public interest of China, the court will not grant recognition and enforcement. Where an arbitration award of a foreign arbitral tribunal requires recognition and enforcement by a court in China, a party shall apply directly to the court at the place of domicile of the party against whom enforcement is sought or at the place where the property of that party is located, and the court shall process the application in accordance with the treaty concluded or acceded to by China or under the principle of reciprocity.

Civil judgments of U.S. courts cannot be directly enforced in Hong Kong either. At present, there are no treaties or other arrangements between the U.S. and Hong Kong for reciprocal enforcement of foreign judgments. However, common law permits an action to be brought upon a foreign judgment. Because a judgment can be regarded as creating a debt between the parties, the foreign judgment itself may form the basis of the cause of action. To enforce a foreign judgment in Hong Kong, a common law action for debt must be brought and the enforcement of a foreign judgment in Hong Kong is subject to a number of conditions, including but not limited to: (a) the foreign judgment is a final judgment on the merits of the case; (b) the judgment is a judgment on liquidated damages in a civil action and not on taxes, fines, or similar complaints; (c) the proceedings in which the judgment was obtained were not contrary to natural justice; and (d) that the enforcement of the judgment is not contrary to the public policy of Hong Kong. In addition, there is a six-year limitation period from the date of the foreign judgment to commence enforcement proceedings under common law in Hong Kong. The defenses that are available to a defendant in a common law action brought on the basis of a foreign judgment include lack of jurisdiction, fraud, or inconsistency of any previous judgment of a Hong Kong court or a foreign judgment recognized in Hong Kong.

As a result of the reasons including but not limited to the foregoing, our foreign public shareholders may have difficulty and face uncertainties in protecting their interests through actions against our company, directors,

officers or our majority shareholder. Shareholder protection through actions initiated by the SEC, DOJ and other U.S. government agencies may also be limited.

Risks Related to Macro Economic Conditions

Our operations may be adversely affected by international and domestic economic conditions. As the oil and gas industry is sensitive to macro-economic trends, oil and gas prices tend to fluctuate along with changes in macro-economic conditions. We may experience pricing pressure on our refined products in recessionary periods, which would have an adverse effect on our profitability. Changes in macro-economic conditions can affect the demand for certain of our products. These factors may also lead to intensified competition for market share, with consequential potential adverse effects on sales volumes. Inflation may lead to increase in our operating costs. Notwithstanding the measures taken by the PRC government to control inflation, China may experience an increase in inflation in the future and our operating costs may become higher than anticipated. The financial, economic or political situation may also have a negative impact on third parties with whom we do business, and may impact their ability to perform contractual obligations to us. In addition, other factors that affect the macro economy, such as declining population growth rates, inflationary pressures, supply chain disruptions, geopolitical tensions, conflicts and wars, trade and tariff policies, and major public health may have an adverse impact on oil and gas and petrochemical industries, including us.

In addition, if in the future any government or governmental authorities were to impose restrictions, or any negative comments or warnings are made by any government or governmental authorities on the investments and inflow of capital into China or China-based companies in general or about us specifically, or if there is any escalation of geopolitical tensions or any news or rumors thereof or if we are involved in any negative news, rumors or controversies, or if investment and trading restrictions are imposed on us or we are threatened with investment or trading restrictions, we may suffer from disruptions in our supply chain and it may be difficult for us to obtain substitution from other sources in a timely, sufficiently and costly manner, which may increase our costs and reduce our profits, and potential investors may shun away from our securities and/or certain of our existing investors may divest from us. Any of these factors may adversely affect our financial condition, results of operations, liquidity, and the value and liquidity of our shares.

Risks Related to Competition

The oil, gas and petrochemicals industries are highly competitive. There is strong competition, both within the oil and gas industry and with other industries, in supplying the fuel needs of commercial, industrial and residential markets. In recent years, with the intensive reform of China's petroleum, refining and chemical, natural gas, LNG and refined oils sales industries, we have been facing increasingly intense competition in the exploration, refinery, chemical, sales, and oil and gas service sectors from privately-owned companies, foreign-invested enterprises and other state-owned enterprises that recently entered the oil and gas industries.

Alternative energy sources and new products also pose strong competition against the oil and gas and petrochemical industries. In particular, the booming of the new energy vehicle industry confronts the oil industry with tough challenges. In October 2020, the State Council issued the New Energy Vehicle Industry Development Plan (for 2021-2035), according to which, China expects that the share of new energy vehicles out of total vehicle sales in China to rise to 20% by 2025 and pure electric vehicles to account for the majority of vehicle sales by 2035. We expect to see continued rapid development of the new energy vehicle industry, which will adversely affect the consumption of refined oil products. Competition puts pressure on product prices, affects oil products marketing and requires continuous management focus on identifying new trends, reducing unit costs and improving efficiency. The implementation of our growth strategy requires continued technological advances and innovation, including advances in exploration & production, and refining & chemicals manufacturing technology and advances in technology related to energy usage. Our performance could be impeded if competitors developed or acquired intellectual property rights to technology that we required or if our innovation lagged the industry.

The Eastern and Southern regions of China have a higher demand for refined products and chemical products than the Western and Northern regions. Although we have strived to increase our refinery capacity in the Southern regions of China over recent years, most of our refineries and chemical plants are located in the Northeastern and Northwestern regions of China. We incur relatively higher transportation costs for delivery of our refined products and chemical products to certain areas of the Eastern and Southern regions from our refineries and chemical plants in Western and Northern China. We face strong competition from other traditional domestic oil companies, local independent refineries and other competitors. As a result, we expect that we will continue to encounter some difficulty in increasing our sales of refined products and chemical products in these regions.

Risks Related to Anti-Monopoly Initiatives

The Anti-Monopoly Law of the PRC (the “Anti-Monopoly Law”) prohibits the entry into or implementation of any horizontal or vertical monopoly agreements, the taking of any action by abusing dominant market position, and any concentration of business operators that has or may have the effect of excluding or limiting competition. Penalties for violations of the Anti-Monopoly Law include, inter alia, confiscation of illegal gains and imposition of penalties as high as 10% of the sales revenue in the preceding year. We have directed our headquarter office and subsidiaries not to take any action in violation of the Anti-Monopoly Law or any of its supporting laws and regulation in their conduct of business, and have monitored company-wide anti-monopoly compliance through our internal compliance system. Despite that, we cannot assure you that our company can prevent all anti-monopoly compliance risks due to the fact that our company occupies a leading market position, the large scale of our business operations and our company has a large number of subsidiaries and branches. If in the future our company is determined to have deficiencies in the anti-monopoly compliance, or any business model adopted or particular transaction conducted by our company is determined, for example, to have abused our market position, entered into monopoly agreements, or implemented a concentration of business operators in violation of anti-monopoly requirements, we may be subject to investigations or enforcement actions by the government. In the case of such determination, in addition to being subject to a substantial fine, we may need to adjust our business model accordingly or make corresponding changes to a particular transaction structure. All of these would have a material adverse effect on our business operations, financial condition, operating results and corporate reputation, and may reduce the value of our securities and the profits distributable to our shareholders.

Risks Related to Economic Sanctions and Trade Controls

The U.S. government has imposed various sanctions on Chinese companies and individuals. For example, many Chinese companies have been placed on the trade control lists administered by the U.S. Department of Commerce Bureau of Industry and Security (“BIS”) due to various allegations, thereby prohibiting or restricting the supply of certain designated U.S. goods and technologies to such companies. Certain Chinese companies were designated by the Office of Foreign Assets Control (“OFAC”) of the US Department of the Treasury on a list that prohibits U.S. entities from investing in the publicly traded securities of such companies, resulting in U.S. investors having to dispose of their securities within a specified period of time. The U.S. government has also worked with the European Union, the governments of United Kingdom and other countries to expand the scope of these sanctions. We are not currently included in any sanction lists, but there can be no assurance that we or any of our subsidiaries would not be a target, be involved in or impacted by sanctions in any way in the future.

In addition, CNPC, our controlling shareholder, has for a long time engaged in international oil and gas operations. Some of these operations are located in countries which are subject to sanctions by the U.S. government, the European Union or other governments or international organizations. Some operations involve certain entities, which are subject to sanctions. We are also heavily dependent on imports of crude oil and natural gas, a part of which is indirectly or directly sourced from Russia.

In summary, sanctions and trade controls may pose the following risks to us:

- *Risks of being sanctioned or implicated in sanctions* : We have always endeavored to prevent our own business and/or our direct or indirect ties with any sanctioned entity from violating the sanctions imposed by the U.S. or any other governments or international organizations. However, we cannot assure you that any future sanctions will not target or implicate CNPC or our company.
- *Divestment*: Some investors (including U.S. investors) are prohibited from investing or may not wish to invest and have proposed or adopted divestment or similar initiatives regarding investments in companies that do business in countries and regions or have trade or investment ties with entities that are subject to sanctions. As a result, these investors may also divest their investment in us because of our and/or CNPC's (including its subsidiaries) investments, trade and other operations in certain countries which are subject to sanctions, and our and/or CNPC's (including its subsidiaries) trade and investment ties with certain sanctioned companies, or the concerns that our company may be the target or subject of sanctions. As a result, the liquidity and value of our securities may be materially and adversely affected.
- *Supply disruptions and wind-down of operations* : Since certain U.S. sanction programs have extraterritorial effect or effect on non-US persons, such as certain secondary sanctions administered by the OFAC, and certain trade controls administered by the BIS, especially under the "foreign direct product rules", in certain circumstances, we and certain of our business partners may need to exercise business judgment to wind down certain existing projects or abandon or change some business plans. As a result, we may suffer adverse consequences, such as supply disruptions, increased costs of raw materials, impairment of assets or loss of profit-making opportunities. If any sanctions were to directly target or indirectly affect us, we could face immediate supply chain disruptions which could have a material adverse impact on our operations.
- *Reputation risks*: Although most of the sanction programs do not prohibit us or our parent company from carrying on existing operations in sanctioned countries, or from maintaining direct or indirect ties with any sanctioned entity, to maintain such operations may have an adverse impact on our reputation.
- *Compliance risks*: In view of the complexity of the various sanctions regimes, the frequent expansion and escalation of sanctions policies and programs, the power of sanction regulators to interpret policies, and the increasing enforcement of sanction laws, we are required to continuously invest substantial resources in compliance management, and the risk of being penalized for any non-compliance cannot be completely avoided and any non-compliance of sanctions may subject us to penalties.

Set forth below, please see our disclosure on a country-by-country basis of CNPC's and our operations in certain sanctioned countries and business ties with certain sanctioned entities.

About Iran

In 2018, the United States government withdrew from the Joint Comprehensive Plan of Action ("JCPOA") and reimposed certain sanctions against Iran, which were conditionally lifted in 2015 following entry into the JCPOA. These reimposed sanctions have implications for non-U.S. companies, including requiring foreign companies to cease participation in projects in certain sectors of Iran (including the energy sector), and prohibiting or restricting oil and petrochemicals imports from Iran, except for eight countries and regions (including China) which were granted a Significant Reduction Exception ("SRE") to be able to continue to import limited oil and petrochemicals until May 2019. Pursuant to section 13(r) to the U.S. Securities Exchange Act of 1934, reporting issuers are required to disclose whether they or any of their affiliates have knowingly engaged in certain activities, transactions, or dealings related to Iran during the reporting period, including activities not prohibited by U.S. law. Based on CNPC's response to our inquiries, a subsidiary of CNPC (the "CNPC Sub") held interests in certain oil and gas development projects in Iran, namely, (i) the MIS oilfields in

which the CNPC Sub obtained a 100% interest in 2010, and (ii) the North Azadegan oilfield, in which the CNPC Sub obtained a 100% interest in 2009. From the re-imposition of U.S. sanctions, the CNPC Sub has been providing minimal support and services to the two oilfields. Since May 2019 when the SRE expired, the two oilfields have suspended lifting oil for recovery and did not generate any revenue for the CNPC Sub.

In July 2012, OFAC added Bank of Kunlun Co., Ltd., or Kunlun Bank, a subsidiary of CNPC, to its “List of Foreign Financial Institutions Subject to Part 561”, which was replaced by the list of Correspondent Account of Payable-Through Account Sanctions, pursuant to the *Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010*. According to OFAC, Kunlun Bank allegedly provided financial services to at least six Iranian banks that were on OFAC’s sanctions list during 2012. These financial services included holding accounts, making transfers and paying letters of credit on behalf of the designated banks. Since 2018, Kunlun Bank’s settlement business involving Iran has been limited to settlement of humanitarian materials and other business activities that are not subject to sanctions. We have no involvement in or control over such activities of Kunlun Bank or CNPC and CNPC subsidiaries and affiliates, and we have never received any revenue or profit derived from these activities.

About Russia

Since July 2014, the United States government has adopted economic sanctions against certain Russian persons and entities, including various entities operating in the financial, energy and defense sectors, such as Rosneft, Gazprom, Transneft, and OAO Novatek as well as those companies in which the foregoing companies independently or jointly hold a 50% or more interest. These sanctions prohibit U.S. persons from transacting in, providing financing for or otherwise dealing in debt issuance by certain of these entities, or exporting, transferring, or providing certain technologies, equipment or services to certain oil-development projects in Russia.

Since February 2022, the U.S. government has expanded the sanctions against Russia. Please refer to the websites of OFAC and other sanction regulators for details. In conjunction with such measures by the U.S. government, E.U., U.K. and certain other countries have also announced similar sanctions against Russia.

Pursuant to certain pre-existing agreements or arrangements, CNPC has for a long time imported crude oil and natural gas from Russia and held investment interests in certain projects in Russia. Our company also has direct or indirect business ties with certain sanctioned Russian entities. These operations include the following:

- CNPC indirectly holds 20% equity interest in OAO Yamal LNG and 10% equity interest in Arctic LNG 2, both of which are more than 50% owned by OAO Novatek.
- CNPC has long-term agreements with Rosneft, Transneft, Gazprom and Arctic LNG 2 (all subject to OFAC sanctions), to import crude oil, natural gas or LNG from Russia. CNPC has resold, and will for the foreseeable future resell or transfer, all or a substantial portion of the imported crude oil and gas under the agreements to us.
- Our company has for a long time imported natural gas from Gazprom, and LNG from a subsidiary of OAO Yamal LNG.

In 2022, the revenue derived from our operations in oil and gas involving those sourced from Russia accounted for 6.2% of our total revenue.

Both CNPC and our company have been continuously assessing the risks related to operations involving Russia. The above business ties may cause a high risk in the context of the Ukraine crisis. At present, the U.S. and certain other countries implement a price limit policy on Russian oil exports. It is possible that such countries may implement more severe policies in the future, and we cannot guarantee that these countries will not intervene in our Russia-related business. We also cannot guarantee that our business partners will not have any negative perception of us as a result of the business ties mentioned above, or they may even consider divesting from us and/or terminating the business relationships with us.

About Venezuela

In 2017, the United States imposed economic sanctions against the Government of Venezuela and certain state-owned entities, including Petroleos de Venezuela, S.A. ("PdVSA"). These sanctions prohibit U.S. persons from transacting in, providing financing for or otherwise dealing in "new debt" issued by these entities on or after August 25, 2017, with certain exceptions for short-term debt. In 2019, the United States issued enhanced sanction measures against Venezuela, which included blocking the property of Venezuelan government and its controlled entities (including PdVSA), and introducing new restrictions on Venezuela's oil sector. Under these programs, persons determined to be operating in the oil sector of the Venezuelan economy, or to have materially assisted, sponsored, or provided financial, material, or technological support for, or goods or services to or in support of, any person included on the list of SDNs and Blocked Persons, may also be subject to risk of being designated for sanctions. In 2008, CNPC Exploration and Development Company Limited ("CNPC E&D"), a joint venture held as to 50% by us and 50% by CNPC, established a joint venture with PdVSA (the "JV") to operate the Sinovensa block located in Carabobo, Monagas State, Venezuela, which block produces and sells extra-heavy oil. CNPC E&D holds a 40% interest in the JV and PdVSA holds 60%. In the past three years, CNPC E&D contributed no new investment in the JV. We also indirectly hold minority interests in a few other small projects in Venezuela. For the year ended December 31, 2022, the share of net profit from the Sinovensa block and the other projects in aggregate accounted for approximately 0.56% of our net profit attributable to owners of the company.

Others

As a major supplier of essential energy sources in China, we may in the ordinary course of our business, develop ties with certain Chinese entities or individuals who are currently or in the future could be subject to various sanctions. In performing daily compliance work, on the one hand, we take great care to identify and assess the risks of violating the US and other countries' sanction regimes, and on the other hand, we strive to comply with PRC anti-sanctions and anti-boycott laws and regulations. When faced with the situation where foreign sanctions conflict with China's anti-sanctions and anti-boycott rules, we may be obligated to comply with China's rules. Hence, we may be unable to completely prevent all sanctions compliance risks.

Our controlling shareholder, CNPC, may have some operations in certain other countries and regions sanctioned by the U.S. to different extents. None of such activities result in us violating any U.S. or any other international sanctions.

Risks Related to Outbound Investments and Trading

We are subject to various political, legal and regulatory environments in foreign countries in which we have investments or with which we conduct trading transactions. The legal and regulatory regimes of some of those countries may not be as developed or sophisticated and may differ in many significant respects from those prevailing in developed countries. Expansion into new international markets requires significant resources, management attention and increased legal compliance costs and subjects us to regulatory, economic, tax and political risks. We are also subject to general risks inherent in international operations, such as fluctuations in exchange rates, changes in trade policies, tariff regulations, embargoes and customs clearances, or other trade restrictions, as well political or social unrest or economic instability in regions in which we operate.

As we continue to expand our business and geographic footprint, including in countries with regulatory and compliance regimes with which we are unfamiliar, we will need to adapt and implement compliance and operational protocols to ensure compliance in each such market. The laws and regulations of various countries in which we currently operate or may operate in the future are evolving. Consequently, such laws and regulations may change and sometimes may conflict with each other, making it more complicated for us to be compliant and sometimes may be at odds such that we must make a strategic decision to abandon or scale back operations in some markets. At any time, authorities in the countries where we currently operate may require us to obtain additional, or extend existing, licenses, permits or approvals. However, there is no guarantee that we will be able

to obtain these in a timely and cost-effective manner. Authorities may revoke existing licenses, and we may not be able to appeal any such revocations in a timely and/or effective manner, or at all.

Risks Related to Climate Change

In recent years, the oil industry has faced increasingly severe challenges posed by global climate change. Numerous international, domestic and regional treaties and agreements which restrict carbon emissions have been executed and become effective. China and some other countries in which we operate have adopted, or are considering the adoption of, regulations to reduce carbon emissions. These include the adoption of carbon emissions “cap and trade” regimes, carbon taxes, more stringent efficiency standards, and incentives or mandates for clean energy. The Chinese government has announced that China strives to hit carbon peak by 2030 and achieve carbon neutrality by 2060. These policies and measures will bring opportunities to our new energy business, but may lead to changes to our oil extraction and refining businesses. We will continue to enhance our oil and gas exploration and development while seek to explore and use new energy sources, aiming to achieve an integrated development of fossil energy and clean energy. Our proposed initiatives to pursue this strategy will include without limitation: to put more efforts into the development and exploitation of geothermal energy, solar energy, wind energy, hydrogen energy and other new energy; to promote the substitution of energy used for our operation with clean energy; to promote the development of gas-to-power business; to increase investments in R&D of new energies; and to enhance carbon capture, utilization and storage (“CCUS”) measures. We will strive to achieve the following goals (i) by 2025, our new energy production capacity to reach 7% of our domestic energy supply capacity; (ii) by 2035, the volume of our external supply of carbon-free energy to exceed the fossil energy we consume, and to achieve an equal share among new energy, oil and gas in our total production capacity (i.e., each accounting for one-third), and (iii) by around 2050, to achieve near-zero emissions, when our new energy capacity to amount to half of our total energy production capacity. In the course of striving to achieve these goals, we expect to encounter the following major risks:

- *In terms of market position:* As a result of the acceleration of energy transition in China, clean energy players are expected to be offered more development opportunities and become increasingly competitive. On the contrary, the share of fossil fuels in primary energy consumption is expected to decrease. The Chinese government plans to increase the share of non-fossil fuels in primary energy consumption from 15% in 2019 to around 25% by 2030. This would have an effect on our position in the refined oil market and the development strategies for the new energy market that we are currently implementing.
- *In terms of liquidity:* In order to achieve a success in relation to energy transition initiatives, we expect to spend more on developing and obtaining new technologies and investing in and implementing our business expansion strategy. This will require our company to maintain an appropriate level of liquidity sufficient to support our transition strategies.
- *In terms of compliance:* the Chinese government is expected to introduce more stringent policies and standards relating to climate change (mainly relating to energy conservation and carbon emission reduction), which could increase our compliance cost. Any noncompliance may subject us to government investigation or penalties.
- *In terms of legal proceedings:* as advised by our PRC legal counsel, at present, under existing PRC laws, the legal basis for initiating any environment-related litigation mainly relates to the laws governing natural resources, environmental or ecological protection. Whether such legal basis is directly applicable to climate change-related litigation remains subject to clarification by further legislation or judicial interpretation. There have only been a few cases in China that are directly or indirectly related to climate change and they are not typical enough to be referred to as precedents. As a result, the potential impact of climate change-related litigation in China on us is not estimable at this stage. Despite that, we have noticed that the Chinese government is working on building a comprehensive legal regime with respect to climate change, and hence we cannot rule out the risk of potential legal proceedings involving oil and gas companies or petrochemical companies in the future.

- *In terms of reputation:* A low carbon profile has become an important indication of the influence of energy companies and a major concern for stakeholders. If we fail to meet our low-carbon development goals, our reputation may be affected adversely.
- *In terms of physical impact:* Natural disasters such as typhoons, rainstorms, floods, and landslides caused by climate change may directly damage our assets and business operations, and the resulting tentative disruption to the supply chain will indirectly affect our operations. As we are an integrated oil and gas operator, with operations extending from upstream to downstream, any tentative supply chain disruption will primarily impact the supply among different segments within our company, and to a lesser extent, the supply to external customers and suppliers. The aforementioned natural disasters may result in, among others, flooding of oil and gas wells, limitations on our ability to operate certain facilities, pipelines exposure, road disruptions and shipping suspensions, any of which can reduce the production of our oil and gas fields, and reduce the workload of our refineries and/or the sales volumes of our sales enterprises. In extreme scenarios, it may cause tentative disruption of delivery and supply at various parts of the supply chains and adversely affect us and our external suppliers and customers.

See also “Risk Factors – Risks Related to Environmental Protection and Safety Production”.

Risks Related to Environmental Protection and Safety Production

Compliance with changes in laws, regulations and obligations relating to environmental protection and safety production could result in substantial expenditures and reduced profitability from increases in operating costs. In recent years, the PRC government has implemented environmental and ecological protection and safety production laws and regulations and has gradually raised refined oil standards which have stricter requirements for our business, and the requirements as to the increase in provision of safety production funds led to an increase in our operating costs. In the future, the PRC government will implement more stringent environmental protection and safety production regulations and impose higher standards on refined oil products. Compliance with these new regulations and standards will increase our costs and expenses.

Our oil and gas exploration and production activities shall comply with relevant PRC environmental protection laws and regulations governing abandonment and disposal processes for oil and gas exploration and production activities. We have established standard abandonment procedures pursuant to these laws and regulations. We have included under our asset retirement obligations the costs for these abandonment activities and this asset retirement obligation is based on our best estimate of future abandonment expenditures. In addition, PRC national or local governments may enact stricter environmental protection regulations and our abandonment costs may increase as a result.

Exploring, producing and transporting crude oil and natural gas and producing and transporting refined products and chemical products involve many hazards. These hazards may result in fires, explosions, spills, blow-outs and other unexpected or dangerous conditions causing personal injuries or death, property damage, environmental damage and interruption of operations.

Some of our oil and natural gas fields and production facilities are surrounded by residential areas or located in areas where natural disasters, such as earthquakes, floods and sandstorms, tend to occur more frequently than in other areas. Any natural disaster or accident encountered by our oil or natural gas fields or production facilities would aggravate any personal injuries, deaths and property damage.

Significant operating hazards and natural disasters such as earthquake, tsunami and health epidemics and pandemic (such as the 2020-2021 pandemic), may cause partial interruptions to our operations, property damage, personal injuries or deaths and environmental damage that could have an adverse impact on our production and operations and financial condition.

Risks Related to Oil and Gas Reserves

The crude oil and natural gas reserves data in this annual report are only estimates. The reliability of reserves estimates depends on a number of factors, assumptions and variables, such as the quality and quantity of our technical and economic data and the prevailing oil and gas prices applicable to our production, some of which are beyond our control and may prove to be incorrect over time. Results of drilling, testing and production after the date of estimates may require substantial upward or downward revisions in our reserves data. Our actual production, revenues and expenditures with respect to our reserves may differ materially from these estimates because of these revisions.

We are actively pursuing business opportunities outside China to improve our international operations. We cannot assure you, however, that we can successfully locate sufficient, if any, alternative sources of crude oil supply 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 materially and adversely affected.

Risks Related to Liquidity

We have made best endeavors to ensure an appropriate level of liquidity and financing ability. However, as we are currently making our efforts to find high-quality large-scale reserves, strengthening capacity building in key areas, constructing new, expanding and upgrading some existing, refinery and petrochemical facilities and expanding the oil and gas terminal markets, we may have to make substantial capital expenditures and investments. In addition, we are endeavoring to advance energy transition and striving to achieve our pre-set goals (see also “Risks Related to Climate Change”). We cannot assure you 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. If either of these conditions arises, we may have to seek external financing to satisfy our capital needs. Our inability to obtain sufficient funding for our development plans could adversely affect our business, financial condition and results of operations.

Risks Related to Audit Reports Prepared by an Auditor who is not Inspected by the Public Company Accounting Oversight Board

As a company with shares registered with the SEC, and previously traded publicly in the United States, our independent registered public accounting firm is required under the laws of the United States to be registered with the Public Company Accounting Oversight Board, or the PCAOB, and undergo regular inspections by the PCAOB to assess its compliance with the laws of the United States and professional standards. Under PRC laws, the PCAOB's inspection of a registered public accounting firm's audit work in China should be by way of regulatory cooperation from relevant Chinese authorities. The CSRC also stated that cross-border audit supervision should be realized through regulatory cooperation between China and the U.S. Therefore, the PCAOB's inspection of our independent registered public accounting firm should be realized through regulatory cooperation between China and the U.S. In 2020, the Holding Foreign Companies Accountable Act, or the HFCAA, was signed into law. According to the HFCAA, where a covered foreign company listed in the U.S. retains an auditor who has a branch or office located in a foreign jurisdiction, and the PCAOB is unable to completely inspect or investigate the auditor for three consecutive years because of a position taken by an authority in the foreign jurisdiction, the SEC may prohibit securities of such covered foreign company from being traded on any national securities exchange or over-the-counter market in the U.S. and such covered foreign company is required to satisfy certain additional disclosure requirements. On December 29, 2022, President Biden signed the 2023 Consolidated Appropriations Act, which, among other things, amended the HFCAA to reduce the number of consecutive years an issuer can be identified as a Commission-Identified Issuer before the SEC must impose an initial trading prohibition on the issuer's securities from three years to two years. In December 2021, the SEC issued the rules to implement the requirements of the HFCAA. In December 2021, PCAOB issued the list of accounting firms that it is unable to inspect or investigate completely as determined by

it (the “2021 Determination”), which included our external auditor. In May 2022, we were identified as a covered issuer. In August 2022, the CSRC, the Ministry of Finance (the “MOF”) and the PCAOB signed an audit supervision cooperation agreement. From September 2022, PCAOB conducted audit inspections in Hong Kong. In December 2022, PCAOB announced that it had secured complete inspection and vacated its 2021 Determination. The SEC subsequently announced that it would no longer identify issuers to which the HFCAA applies until the PCAOB again decides that it cannot conduct a complete inspection and investigation.

Our shares have been delisted from the NYSE on September 8, 2022 and we have terminated our ADR program on October 17, 2022. We expect to deregister our shares with the SEC upon satisfaction of the relevant conditions under the Securities Exchange Act. Prior to the deregistration, we will continue to need to meet the disclosure obligations under the Securities Exchange Act. Given that our shares have been delisted from the NYSE, the risk of trading prohibition under the HFCAA no longer applies to us. However, if PCAOB determines that it cannot conduct complete inspection and investigation of accounting firms located in China again, the risk of resuming the implementation of the HFCAA may adversely affect the value of our H Shares.

By conducting inspections of independent registered public accounting firms, the PCAOB has at times identified deficiencies in the audit procedures and quality control procedures of those accounting firms. Such deficiencies may be addressed in those accounting firms’ future inspection process to improve their audit quality. If PCAOB is unable to conduct regular inspections of audit work undertaken in China again, it may cause the investors to lose confidence in the financial statements and reports of the issuers audited by such independent registered public accounting firms.

Risks Related to Effectiveness of Internal Control over Financial Reporting

The SEC, as required by Section 404 of the Sarbanes-Oxley Act of 2002, has adopted rules requiring every public company in the United States to include a management report on such company’s internal control over financial reporting in its annual report, which contains management’s assessment of the effectiveness of our internal control over financial reporting. In addition, an independent registered public accounting firm must attest to and report on the effectiveness of our internal control over financial reporting. Although our management concluded that our internal control over our financial reporting as of December 31, 2022 was effective, and our independent registered public accounting firm has issued an attestation report, which concluded that our internal control over financial reporting was effective in all material aspects as of December 31, 2022, we may discover other deficiencies in the course of our future evaluation of our internal control over our financial reporting and may be unable to remediate such deficiencies in a timely manner. If we fail to maintain the adequacy of our internal control over financial reporting, we may not be able to conclude that we have effective internal control over financial reporting on an ongoing basis, in accordance with the Sarbanes-Oxley Act. Moreover, effective internal control is necessary for us to produce reliable financial reports and is important to prevent fraud. As a result, our failure to maintain effective internal control over financial reporting could result in the loss of investor confidence in the reliability of our financial statements, which in turn could harm our business and negatively impact the trading prices of our shares.

Risks Relating Financial Reporting Differences

As a foreign private issuer, we are exempt from certain disclosure requirements under the U.S. Exchange Act, which may afford less protection to you than you would enjoy if we were a domestic U.S. company. As a foreign private issuer, we are exempt from, among other things, the rules prescribing the furnishing and content of proxy statements under the U.S. Exchange Act and the rules relating to selective disclosure of material nonpublic information under Regulation FD under the U.S. Exchange Act. In addition, our executive officers, directors and principal shareholders are exempt from the reporting and short-swing profit and recovery provisions contained in Section 16 of the U.S. Exchange Act. We are also not required under the U.S. Exchange Act to file periodic reports and financial statements with the SEC as frequently or as promptly as domestic U.S. companies with securities registered under the U.S. Exchange Act. For example, in addition to annual

reports with audited financial statements, domestic U.S. companies are required to file with the SEC quarterly reports that include interim financial statements reviewed by an independent registered public accounting firm and certified by the companies' principal executive and financial officers. By contrast, as a foreign private issuer, we are not required to file such quarterly reports with the SEC or to provide quarterly certifications by our principal executive and financial officers. Although we are required by the listing rules of SSE with respect to our A Shares to publish quarterly and semi-annual reports and also required by listing rules of HKSE with respect to our H Shares to publish semi-annual reports, and such reports are furnished to the SEC on Form 6-K, our financial statements included in the reports are not reviewed by an independent registered public accounting firm, and are only reviewed and signed by all our directors, president and CFO.

Risks Related to Employee Misconduct

We may not be able to detect or prevent employee misconduct, including misconduct by senior management, and such misconduct may damage our reputation and could adversely affect the price of our shares. We have gradually reinforced and enhanced our internal control and corporate governance policies and procedures in order to strengthen our ability to detect and prevent employee misconduct. We cannot assure you, however, that we will be able to detect or prevent such misconduct in a timely fashion, or at all. If we fail to prevent employee misconduct, our reputation may be harmed, and the trading price of our shares could be adversely affected.

Risks Related to Cyber Security

In recent years, we have increased the utilization of artificial intelligence, cloud computing, big data, Internet of Things, and other types of information technology ("IT") in our production and operations, our activities are therefore heavily dependent on the reliability and security of our IT systems. Our IT systems may suffer disruptions due to technical failure and disruptions, cyber-attack, computer intrusions and viruses, power and network outages or natural disasters. We have adopted multi-layer technological measures for prevention and detection of cybersecurity problems, and we also train our employees in order to improve their awareness and ability to detect and respond to cybersecurity situations. If our measures prove to be insufficient, deficiencies in any processes could adversely affect or disrupt our normal operations or result in incidents or property loss or personal injuries. Cyberattacks may also result in proprietary information being altered, lost, or stolen, result in employee, customer, or third-party information or material intellectual property being breached, or otherwise disrupt our business operations. In case we suffer any grave cybersecurity incident, we could face regulatory actions, third party litigations or reputational harm in addition to being required to make compensation for direct losses resulting from the incident. As a result, we and our customers, employees, or third parties could be adversely affected, potentially having a material adverse effect on our business and financial conditions.

Risks Related to Insurance

Due to the fact that oil industry is susceptible to high and industry-specific risks in nature, the current ordinary commercial insurance cannot cover all the risks we are exposed to. We maintain insurance coverage against liability risks relating to assets that have significant operational risks, auto risks, and third-party liabilities for personal, property, and environmental risks, but not all, potential losses. We may suffer material losses resulting from uninsurable or uninsured risks or insufficient insurance coverage.

Item 4— INFORMATION ON THE COMPANY

Introduction

History and Development of Our Company

Our legal name is “中国石油天然气股份有限公司” and its English translation is PetroChina Company Limited.

We were established as a joint stock company with limited liability under the Company Law of the PRC on November 5, 1999 as part of a restructuring in which CNPC transferred to us most of the assets and liabilities of CNPC relating to its exploration and production, refining and marketing, chemicals and natural gas businesses. In April 2000, we completed a global offering of H Shares and ADSs. In September 2005, we completed a follow-on offering of over 3 billion H Shares. In October 2007, we issued 4 billion A Shares. The A Shares were listed on the SSE in November 2007. As of March 31, 2023, CNPC beneficially owned 150,923,565,570 A Shares and 291,518,000 H Shares in us, representing approximately 82.62% of our share capital in aggregate. The H Shares held by CNPC were through Fairy King Investments Limited, an overseas wholly owned subsidiary of CNPC.

We are the largest oil and gas producer and seller occupying a leading position in the oil and gas industry in China, one of the largest companies in China in terms of sales revenue, and also one of the largest companies in the world. Currently, our principal business lines include the exploration, development, transmission, production and marketing of crude oil, natural gas and new energy; the refining of crude oil and petroleum products, as well as the production and marketing of basic petrochemical products, derivative chemical products and other chemical products and new materials; the marketing and trading of refined oil products and non-oil products; and the sale of natural gas.

Currently, substantially all of our crude oil and natural gas reserves and production-related assets are located in China. Our exploration, development and production activities commenced in the early 1950s. For seven decades, we have conducted crude oil and natural gas exploration activities in many regions of China. We commenced limited refining operations in the mid-1950s. Our chemicals operations commenced in the early 1950s. Our natural gas transmission and marketing activities commenced in Sichuan in Southwestern China in the 1950s. In the early 1960s, we began producing ethylene.

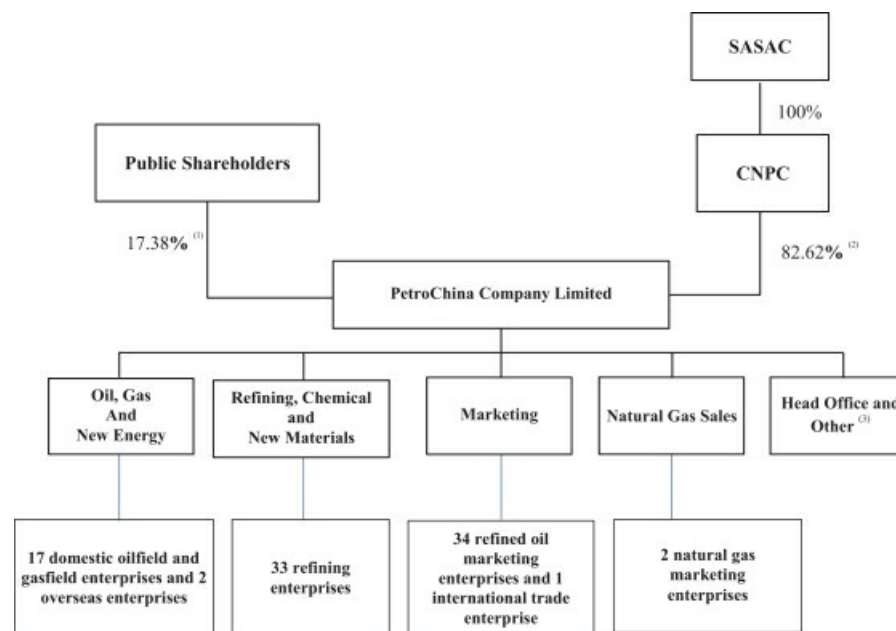
We have continued to pursue attractive business opportunities outside China as part of our business growth strategy to utilize both domestic and international resources to strengthen our competitiveness. Since 2005, we have acquired interests in various oil and natural gas assets in several countries, which significantly expanded our overseas operations and effectively increased our oil and gas reserves and production volumes. At the same time, we have been maintaining certain proportion of imported crude oil and natural gas in accordance with our needs. In 2020, 2021 and 2022, we imported approximately 679.3 million barrels, 583.1 million barrels and 528.8 million barrels of crude oil, respectively.

To address the climate change concerns, we have adopted a three-steps energy transition plan. We will strive to achieve the following goals (i) by 2025, our new energy production capacity to reach 7% of our domestic energy supply capacity; (ii) by 2035, the volume of our external supply of carbon-free energy to exceed the fossil energy we consume, and to achieve an equal share among new energy, oil and gas in our total production capacity (i.e., each accounting for one-third), and (iii) by around 2050, to achieve near-zero emissions, when our new energy capacity to amount to half of our total energy production capacity.

Our headquarters are located at 9 Dongzhimen North Street, Dongcheng District, Beijing, China, 100007, and our telephone number at this address is (8610) 5998-2622. Our website address is www.petrochina.com.cn. The information on our website is not part of this annual report. We file our annual reports on Form 20-F, interim reports on Form 6-K and other documents required to be filed with the SEC on the SEC's website www.sec.gov.

Our Corporate Organization Structure

The following chart illustrates our corporate organization structure as of March 31, 2023.



(1) Indicates approximate shareholding.

(2) Indicates approximate shareholding, including 291,518,000 H Shares indirectly held by CNPC as of March 31, 2023 through Fairy King Investments Limited, a wholly owned overseas subsidiary of CNPC.

(3) Includes PetroChina Exploration & Development Research Institute, PetroChina Planning & Engineering Institute, PetroChina Petrochemical Research Institute and several other companies.

* Our major subsidiaries, all included in the chart above, are classified into different business segments based on the nature of their principal business activities. See Note 19 to our financial statements for a detailed discussion. Other than the major subsidiaries, companies in which we hold equity interest mainly include China Oil & Gas Pipeline Network Corporation ("PipeChina"), CNPC Finance Co., Ltd., CNPC Captive Insurance Company Limited and other associate companies and joint ventures as well as other equity investments measured at fair value through other comprehensive income. See Note 17 and Note 18 to our financial statements for a detailed discussion.

For information on capital expenditures, please see "Item 5 — Operating and Financial Review and Prospects — Liquidity and Capital Resources — Capital Expenditures and Investments."

Oil, Gas and New Energy

We engage in crude oil and natural gas exploration, development and production and new energy business. Substantially all of our estimated proved crude oil and natural gas reserves are located in China, principally in Northeastern, Northern, Southwestern and Northwestern China. Meanwhile, we have enhanced our overseas cooperation and expanded our strategic presence in five major overseas oil and gas cooperation regions by conducting new project development.

In 2022, we strengthened our overall research and top-down design in the domestic oil and gas business, risk exploration in new areas and new fields and the concentrated exploration and fine exploration in key reserve-increasing areas and strategic replacement areas. We achieved multiple breakthroughs and important discoveries in Tarim, Junggar, Sichuan, Bohai Bay and other key basins, developing into various large-scale oil and gas reserve areas. We vigorously enhanced the stable output in the existing oil and gas fields and optimized the layout of production capacity in new fields, and the output of oil and gas continued to increase. In 2022, our domestic business achieved a crude oil output of 767.4 million barrels, representing an increase of 1.9% as compared with last year, a marketable natural gas output of 4,471.3 Bcf, representing an increase of 5.9% as compared with last year, and an oil and natural gas equivalent output of 1,512.6 million BOE, representing an increase of 3.8% as compared with last year.

In 2022, our overseas oil and gas business adhered to high quality development, and important discoveries have been made in various projects such as Niger and Chad; we enhanced full-cycle management of development plans, promoting various key capacity projects put into operation. In 2022, we enhanced the acquisition of new projects and cooperation in existing projects, completed the restructuring and closing of the Rumaila project, and extended the contract term of the Aktobe project. In 2022, the crude oil output from overseas operations amounted to 138.8 million barrels, representing an increase of 3.3% as compared with last year, the output of marketable natural gas from overseas operations was 203.7 Bcf, representing an increase of 3.0% as compared with last year; and the output of oil and gas equivalent from overseas operations was 172.8 million BOE, representing an increase of 3.2% as compared with last year, accounting for 10.3% of our total oil and natural gas equivalent output.

In 2022, our crude oil output amounted to 906.2 million barrels, representing an increase of 2.1% as compared with last year. The marketable natural gas output reached 4,675.0 Bcf, representing an increase of 5.8% as compared with last year. The oil and natural gas equivalent output amounted to 1,685.4 million BOE, representing an increase of 3.7% as compared with last year.

As of December 31, 2022, our exploration and exploitation licenses for oil and gas (including coalbed methane) covered a total area of approximately 240.7 million acres, including the exploration licenses covering a total area of approximately 203.0 million acres and the production licenses covering a total area of approximately 37.7 million acres.

The following table sets forth the financial and operating data of our oil, gas and new energy segment for each of the years ended December 31, 2020, 2021 and 2022:

	Year Ended December 31,		
	2020	2021	2022
Revenue (RMB in millions)	530,807	688,334	929,279
Profit from operations (RMB in millions)	23,092	68,452	165,748
Proved developed and undeveloped reserves			
Crude oil (million barrels)	5,206.1	6,063.8	6,418.4
Natural gas (Bcf)	76,437.1	74,915.9	73,452.7
Production			
Crude oil (million barrels)	921.8	887.9	906.2
Natural gas for sale (Bcf)	4,221.0	4,420.0	4,675.0

Reserves

As of December 31, 2022, our total estimated proved reserves of crude oil was approximately 6,418.4 million barrels and our total estimated proved reserves of natural gas was approximately 73,452.7 Bcf. As of December 31, 2022, our proved developed reserves of crude oil accounted for 86.8% of our total proved reserves of crude oil, and our proved developed reserves of natural gas accounted for 56.5% of our total proved reserves of natural gas. Total proved hydrocarbon reserves, including our overseas crude oil reserves of 722.5 million barrels and overseas natural gas reserves of 1,288.1 Bcf, increased by 0.6% from approximately 18,549.8 million BOE as of December 31, 2021 to approximately 18,660.6 million BOE as of December 31, 2022. Natural gas reserves accounted for 65.6% of our total proved hydrocarbon reserves as of December 31, 2022.

Approximately 54%, 57% and 58% of our estimated proved reserves as of December 31, 2020, 2021 and 2022, respectively, were assessed by our internal assessment team and audited by our independent engineering consultants. Other portions were based on the estimates performed by our independent engineering consultants, DeGolyer and MacNaughton, McDaniel & Associates, Ryder Scott and GLJ. The reserves assessments and reports of our company were performed and prepared in compliance with SEC's oil and gas reserves reporting rules. Our reserves estimates include only crude oil and natural gas which we believe can be reasonably produced within the current terms of our production licenses or within the terms of the licenses which we are reasonably certain to be renewed. See "Regulatory Matters — Exploration Licenses and Production Licenses" for a discussion of our production licenses. Also see "Item 3 — Key Information — Risk Factors — Risks Related to Oil and Gas Reserves" for a discussion of the uncertainty inherent in the estimation of proved reserves.

We have adopted methods generally accepted in the industry to assess our proved reserves, including production decline curve analysis methods, volumetric methods, material balance methods, and reservoir simulation methods, or a combination of these methods, and took into account economic conditions in performing the assessments. Basic data used by us to assess our proved reserves estimates include geological, geophysical, engineering and financial data as well as other relevant data. In order to satisfy the requirements for establishing a reasonable certainty for proved reserves, including material increase in proved reserves estimates, we adopted field-tested repeatable and consistent reliable technologies, including, among others, logging, 3D seismic data, rock core analyses, static or dynamic pressure tests and production well testing. To the extent that appropriate analogous reservoirs are available, we use analogous reservoir parameters to enhance the quality of our reserves assessment results so as to be consistent with the reliable results required for proved reserves assessment as specified in applicable SEC rules.

Internal Controls Over Reserves Estimates

We have an oil and gas reserves management committee, which is chaired by the president of our company.

We require our employees engaged in oil and gas reserves evaluation and audit must hold a competent professional qualification. Both our headquarters and regional companies are staffed with reserves personnels. We have a reserves management department in our oil, gas and new energy branch company. The main staff of the department have over 20 years of experience in the oil industry and many years of experience in reserves evaluation pursuant to SEC rules. All of the staff of the department hold national certificates for reserves assessment. Each regional company has a reserves management committee and a multi-disciplinary reserves research office. Mr. Duan Xiaowen from the reserves administration division of our oil, gas and new energy branch company, is the person in charge of our reserves estimation. Mr. Duan holds a bachelor's degree in geology and a master's degree in business administration. He has many years of work experience in oil and gas exploration and development industry and has been engaged in reserves estimate and management for a long time. Since 2008, Mr. Duan has been participating in the supervision of reserves estimation and management in our company. In 2016, Mr. Duan became the division head primarily responsible for overseeing the preparation of the reserves estimates, estimation technology and management. The reserves research offices of the regional

companies are responsible for estimating newly discovered reserves and updating the estimates of existing reserves. The results of our oil and gas reserves assessment are subject to a two-level review by both the regional companies and our oil, gas and new energy branch company, with final examination and approval of the reserves management committee.

In addition, we retain independent assessment firms to perform reserves evaluation and/or audit our estimates of proved reserves each year in accordance with relevant SEC rules. We disclose the reserves in accordance with the SEC's oil and gas reporting rules. The independent engineering consultants providing us with reserves audit and/or assessment services for 2022 were DeGolyer and MacNaughton, Ryder Scott Company L.P., GLJ Petroleum Consultants and McDaniel & Associates Consultants Ltd. None of them or their partners, senior officers or employees has any direct or indirect financial interest in our company and the remunerations to the firms are not in any way contingent upon reported reserves estimates. The summaries of the reserves assessment reports and audit reports issued to us by the foregoing independent engineering consultants have been included as exhibits 15.1 through 15.5 to this annual report on Form 20-F.

The following table sets forth our estimated reserves and the changes in the years ended December 31, 2020, 2021 and 2022.

	Crude Oil and Condensate ⁽¹⁾ (Million barrels)	Natural Gas ⁽²⁾ (Bcf)	Combined (BOE, in millions)
Proved developed and undeveloped reserves			
On a consolidated basis:			
Reserves as of December 31, 2020	5,206.1	76,437.1	17,945.6
Revisions of previous estimates	1,159.1	(2,011.6)	824.1
Extensions and discoveries	472.3	4,885.3	1,286.5
Improved recovery	116.7	27.0	121.2
Purchased	—	—	—
Sold	(2.5)	(1.9)	(2.8)
Production for the year	(887.9)	(4,420.0)	(1,624.8)
Reserves as of December 31, 2021	6,063.8	74,915.9	18,549.8
Revisions of previous estimates	511.4	(3,155.9)	(14.4)
Extensions and discoveries	622.9	6,236.8	1,662.3
Improved recovery	124.9	130.9	146.7
Purchased	1.6	—	1.6
Sold	—	—	—
Production for the year	(906.2)	(4,675.0)	(1,685.4)
Reserves as of December 31, 2022	6,418.4	73,452.7	18,660.6
Proved developed reserves			
As of December 31, 2020	4,653.6	42,076.7	11,666.4
Of which: domestic	3,987.0	40,732.3	10,775.8
Overseas	666.6	1,344.4	890.6
As of December 31, 2021	5,374.8	42,575.6	12,470.7
Of which: domestic	4,799.6	41,343.5	11,690.2
Overseas	575.2	1,232.1	780.5
As of December 31, 2022	5,574.2	41,508.4	12,492.3
Of which: domestic	5,024.3	40,449.3	11,765.9
Overseas	549.9	1,059.1	726.4
Proved undeveloped reserves			
As of December 31, 2020	552.5	34,360.4	6,279.2
Of which: domestic	387.9	34,062.0	6,064.9
Overseas	164.6	298.4	214.3
As of December 31, 2021	689.0	32,340.3	6,079.1
Of which: domestic	486.0	32,116.5	5,838.8
Overseas	203.0	223.8	240.3
As of December 31, 2022	844.2	31,944.3	6,168.3
Of which: domestic	671.6	31,715.3	5,957.5
Overseas	172.6	229.0	210.8
Share of proved developed and undeveloped reserves in associates and joint ventures calculated by the equity method			
As of December 31, 2020	195.5	362.7	256.0
As of December 31, 2021	208.5	511.4	293.7
As of December 31, 2022	175.6	537.1	265.1

(1) As of December 31, 2022, the crude oil and condensate reserves included 318.3 million barrels of natural gas liquid.

(2) Represents the remaining natural gas after on-site condensate separation treatment and minus the vented combustion gas.

As of December 31, 2020, 2021 and 2022, our total proved developed and undeveloped reserves on consolidated basis and on equity method, were 18,202 million BOE, 18,844 million BOE and 18,926 million BOE, including 5,402 million, 6,272 million and 6,594 million barrels of crude oil and condensate, and 76,799.8 Bcf, 75,427.3 Bcf and 73,989.8 Bcf of natural gas.

Our proved undeveloped reserves were 6,168.3 million BOE as of December 31, 2022, representing an increase of 1.5% as compared to 6,079.1 million BOE for 2021. The main changes in our proved undeveloped reserves in 2022 included (i) an increase of 1,662.3 million BOE through extensions and discoveries; (ii) an increase of 146.7 million BOE through improved recovery; (iii) a reduction of 459.2 million BOE due to certain downward adjustments primarily for purposes of optimizing investment in proved undeveloped reserves; (iv) the conversion of 1,260.7 million BOE of proved undeveloped reserves into proved developed reserves; and (v) an increase of 0.2 million BOE through purchase. In 2022, we spent RMB161,933 million on developing proved undeveloped reserves.

The overwhelming majority of our proved undeveloped reserves are situated around the oil fields that are currently producing. Some of our proved undeveloped reserves of natural gas are scheduled for development more than five years after their initial disclosure primarily due to the effect of long-term natural gas supply contracts. The sale of natural gas produced from our reserves located in China is subject to our long-term contractual obligations to provide a stable supply of natural gas to customers. We sell all of the natural gas under long-term supply arrangements with customers.

There are mainly two types of long-term supply arrangements. The first is multi-year supply contracts with terms ranging from 20 to 30 years that can be extended upon mutual agreement. The second type is renewable annual contracts. The majority of the natural gas produced in our gas fields in China is put into the nationwide, long-range pipeline system to be sold to customers who have entered into multi-year supply contracts with us in the areas where the long-range pipeline system covers. A small portion of the natural gas produced by our company is put into local pipeline systems to be sold to customers in the areas adjacent to our gas fields. These customers typically have formed de-facto long-term relationships with our company over the years and enter into supply contracts with us before the year end to determine the amount of gas to be purchased for the next year, with such contracts being renewed every year. In general, our supply relationships with customers under the annual contracts have existed for more than ten years.

Mainly as a result of our contractual obligations to ensure a long-term, stable supply of natural gas to customers, we must maintain a relatively large amount of proved undeveloped natural gas reserves and develop them over an extended period of time (in some cases, longer than five years).

Most of our proved reserves are located in China, and no individual country, region or continent outside of China contains 15% or more of our total proved reserves. In the years ended December 31, 2020, 2021 and 2022, our overseas proved reserves, taken together, accounted for 6.2%, 5.5% and 5.0% of our total proved reserves, respectively.

The following tables set forth our crude oil and natural gas proved reserves and proved developed reserves by region as of December 31, 2020, 2021 and 2022.

	As of December 31,					
	2020		2021		2022	
	Proved Developed and Undeveloped	Proved Developed	Proved Developed and Undeveloped	Proved Developed	Proved Developed and Undeveloped	Proved Developed
Crude oil reserves (Million barrels)						
Daqing	928.6	881.5	960.1	936.6	929.3	922.5
Changqing	1,262.5	1,185.8	1,516.1	1,380.4	1,607.1	1,342.9
Xinjiang	717.2	677.8	825.9	774.1	961.8	864.0
Other regions in China	1,479.6	1,254.9	1,983.5	1,708.5	2,197.7	1,894.9
Overseas	818.2	653.6	778.2	575.2	722.5	549.9
Total	5,206.1	4,653.6	6,063.8	5,374.8	6,418.4	5,574.2
Natural gas Reserves⁽¹⁾ (Bcf)						
Changqing	25,969.8	10,700.7	25,467.6	10,910.4	23,806.1	10,610.0
Tarim	22,680.6	15,091.9	21,128.9	14,711.3	19,633.1	13,118.3
Chuanyu	14,933.6	8,316.5	15,580.2	9,074.3	16,663.8	10,030.0
Other regions in China	11,212.0	6,624.9	11,283.3	6,647.5	12,061.6	6,691.0
Overseas	1,641.1	1,342.7	1,455.9	1,232.1	1,288.1	1,059.1
Total	76,437.1	42,076.7	74,915.9	42,575.6	73,452.7	41,508.4

(1) Represents the remaining natural gas after on-site condensate separation treatment and minus the vented combustion gas.

Exploration and Development

We currently conduct exploration and development in 12 provinces, two municipalities under the direct administration of the central government and three autonomous regions in China as well as in certain regions in other countries.

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The following table sets forth the number of wells we drilled, or in which we owned an interest, and the results thereof, in 2020, 2021 and 2022.

Year	Daqing	Xinjiang	Changqing	Tarim	Other regions in China ⁽¹⁾	Overseas	Total
2020							
Net exploratory wells drilled ⁽²⁾	166	151	661	35	526	24.0	1,563.0
Crude oil	142	120	380	11	345	17.9	1,015.9
Natural gas	9	9	53	8	65	1.8	145.8
Dry ⁽³⁾	15	22	228	16	116	4.3	401.3
Net development wells drilled ⁽²⁾	3,264	1,048	4,630	123	2,998	210.5	12,273.5
Crude oil	3,240	1,040	3,082	57	2,349	209.5	9,977.5
Natural gas	11	8	1,512	59	642	1.0	2,233.0
Dry ⁽³⁾	13	—	36	7	7	—	63.0
2021							
Net exploratory wells drilled ⁽²⁾	207	149	604	39	457	23.3	1,479.3
Crude oil	160	86	371	15	265	15.6	912.6
Natural gas	17	17	43	8	90	1.1	176.1
Dry ⁽³⁾	30	46	190	16	102	6.6	390.6
Net development wells drilled ⁽²⁾	3,387	736	4,034	75	3,124	266.4	11,622.4
Crude oil	3,370	732	2,483	42	2,497	262.2	9,386.2
Natural gas	6	4	1,518	30	620	4.2	2,182.2
Dry ⁽³⁾	11	—	33	3	7	—	54.0
2022							
Net exploratory wells drilled ⁽²⁾	167	136	557	31	460	24.2	1,375.2
Crude oil	112	116	318	9	232	18.2	805.2
Natural gas	16	20	43	8	116	2	205.0
Dry ⁽³⁾	39	—	196	14	112	4	365.0
Net development wells drilled ⁽²⁾	3,449	485	4,367	102	3,250	286.7	11,939.7
Crude oil	3,429	465	2,641	75	2,720	276.8	9,606.8
Natural gas	9	20	1,702	25	529	9	2,294.0
Dry ⁽³⁾	11	—	24	2	1	0.9	38.9

(1) Represents the Liaohe, Jilin, Huabei, Dagang, Southwest, Tuha, Qinghai, Jidong, Yumen, Zhejiang, Southern and other oil regions.

(2) "Net" wells refer to the wells after deducting interests of others.

(3) "Dry" wells are wells with insufficient reserves to sustain commercial production.

As of December 31, 2022, we had 441 net wells in the process of being drilled, including 6.7 net wells located outside of China. For the year ended December 31, 2022, we completed 7,282 net wells with multiple completions, including 34.6 net wells located outside of China.

Oil-and-Gas Properties

The following table sets forth the gross and net productive crude oil and natural gas wells and acreage we owned an interest as of December 31, 2022.

Oil and Gas Region ⁽³⁾	Productive Wells ⁽¹⁾				Acreage ⁽¹⁾ (Thousand acres)							
					Developed				Undeveloped			
	Crude Oil		Natural Gas		Crude Oil		Natural Gas		Crude Oil		Natural Gas	
	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net
Daqing	78,477	69,323	755	755	1,404.89	1,395.54	196.19	196.19	438.98	438.98	352.81	352.81
Changqing	69,200	63,922	24,863	23,701	2,049.27	2,049.27	9,051.79	8,871.12	1,017.47	1,017.47	3,240.56	3,012.64
Xinjiang	33,921	27,690	286	286	502.88	486	74.37	74.37	210.08	210.08	18.24	18.24
Tarim	1,707	1,707	825	787	436.94	436.94	379.32	371.13	419.12	419.12	241.75	241.75
Other Regions in China ⁽²⁾	76,709	69,102	15,673	14,529	1,625.91	1,564.11	2,032.92	1,951.09	686.66	686.66	2,405.67	2,361.84
Overseas Total	11,050	8,783.7	610	239.3	511.84	336.33	90.75	39.70	90.64	69.85	20.06	11.02
Total	271,064	240,527.7	43,012	40,297.3	6,531.73	6,268.19	11,825.34	11,503.60	2,862.95	2,842.16	6,279.09	5,998.30

(1) Includes all wells and acreage in which we have an interest.

(2) Represents the Liaohe, Jilin, Huabei, Dagang, Southwestern, Tuha, Qinghai, Jidong, Yumen, Zhejiang, Southern and other oil regions.

(3) The gross and the net number of wells and amounts of acreage in the oil regions in which we operate solely and not in partnership with any other party are the same.

The term of our production licenses covering our acreage located in China varies from 10 to 30 years, depending on the actual size of the blocks. The production licenses with respect to our oil and gas acreage located in China are renewable upon application prior to expiration. Our developed and undeveloped acreage located outside China relates to multiple concessions, blocks and leases, which have materially different contractual terms and conditions. The term of our licenses for acreage development outside China generally varies from 20 to 30 years, and the contracts for certain projects are renewable on a preferred basis upon application prior to expiration. Our decision as to whether to apply for a renewal of any production license for any project located outside China depends on our assessment of the prospects of such project and the need of our development strategies. None of our undeveloped acreage located outside China will expire in the near future.

Production

The following table sets forth our historical average net daily crude oil and natural gas production by region and our average sales price for the years ended December 31, 2020, 2021 and 2022.

	Year Ended December 31,			
	2020	2021	2022	% of 2022
Crude oil production⁽¹⁾				
(thousand barrels per day, except percentages or otherwise indicated)				
Daqing	595.7	596.3	601.5	24.2
Changqing	497.7	513.0	519.8	20.9
Xinjiang	262.2	273.6	288.6	11.6
Other ⁽²⁾	1,162.9	1,049.7	1,072.9	43.3
Total	2,518.5	2,432.6	2,482.8	100.0
Annual production (million barrels)	921.8	887.9	906.2	100.0
Domestic	743.8	753.4	767.4	84.7
Overseas	178.0	134.5	138.8	15.3
Average sales price (US\$ per barrel)	40.33	65.58	92.12	
Natural gas production⁽¹⁾⁽³⁾				
(million cubic feet per day, except percentages or otherwise indicated)				
Changqing	3,757.6	3,916.9	4,160.5	32.5
Tarim	2,748.0	2,820.6	2,860.1	22.3
Chuanyu	2,793.7	3,140.3	3,407.9	26.6
Other ⁽⁴⁾	2,233.5	2,231.8	2,379.8	18.6
Total	11,532.8	12,109.6	12,808.3	100.0
Annual production (Bcf)	4,221.0	4,420.0	4,675.0	100.0
Domestic	3,993.8	4,222.2	4,471.3	95.6
Overseas	227.2	197.8	203.7	4.4
Average realized price (US\$ per Mcf)	4.80	7.59	11.30	

(1) Production volumes for each region include our share of the production from all of our cooperative projects with foreign companies in that region.

(2) Represents production from the Liaohe, Jilin, Huabei, Dagang, Tarim, Tuha, Qinghai, Jidong, Yumen, Southern and other oil regions and our share of overseas production as a result of our acquisition of overseas assets.

(3) Represents production of natural gas for sale.

(4) Represents production from the Daqing, Qinghai, Tuha, Xinjiang, Liaohe, Huabei, Dagang, Jilin, Jidong, Yumen, Zhejiang, Southern and other oil and gas regions and our share of overseas production as a result of our acquisition of overseas assets.

In 2022, we supplied a substantial majority of our total crude oil sales to our own refineries. In addition, we and China Petroleum & Chemical Corporation, or Sinopec, supply crude oil to each other's refineries to allow supplies to be easily obtained from nearby resources.

The following table sets forth our average sales prices and average lifting costs of crude oil and natural gas of our company on an overall basis and those in China in 2020, 2021 and 2022.

	Crude Oil Average Realized Prices (RMB/ton)	Natural Gas Average Realized Prices (RMB/Kilostere)	Average Lifting Cost (US\$/BOE)
2020			
Overall	2,056	1,170	11.10
- China	2,111	1,314	12.19
2021			
Overall	3,126	1,729	12.30
- China	3,140	1,426	13.06
2022			
Overall	4,578	2,684	12.42
- China	4,602	1,820	13.17

Principal Oil and Gas Regions

Daqing Oil Region

In 1950s, we discovered the Daqing oil region. The Daqing oil region is our largest oil and gas producing property, located in the Songliao basin and consisting of 40 oilfields. In 2022, the Daqing oil region produced an average of 601.5 thousand barrels of crude oil per day, representing approximately 24.2% of our total daily crude oil production.

As of December 31, 2022, our proved crude oil reserves in the Daqing oil region were 929.3 million barrels, representing 14.5% of our total proved crude oil reserves. As of December 31, 2022, the crude oil reserves-to-production ratio of the Daqing oil region was approximately 4.2 years.

Daqing's crude oil has low sulfur and high paraffin content. As many refineries in China, particularly those in Northeastern China, primarily refine Daqing crude oil, we have a stable market for the crude oil we produce in the Daqing oil region.

Changqing Oil and Gas Region

In the early 1990s, we discovered the Changqing oil and gas region, which covers parts of Shaanxi Province, Gansu Province, Ningxia, Inner Mongolia and Shanxi Province and consists of 48 oil and gas producing blocks. In 2022, the Changqing oil region produced an average of 519.8 thousand barrels of crude oil per day and an average of 4.2 Bcf of natural gas for sale per day, respectively, representing approximately 20.9% of our total daily crude oil production, and approximately 32.5% of our total daily production of natural gas for sale, respectively.

As of December 31, 2022, the Changqing oil and gas region had total proved crude oil reserves of 1,607.1 million barrels and total proved natural gas reserves of 23,806.1 Bcf, respectively, representing 25.0% of our total proved crude oil reserves and 32.4% of our total proved natural gas reserves, respectively. As of December 31, 2022, the crude oil and gas reserves-to-production ratio at the Changqing oil region was approximately 12.6 years.

In January 2001, we discovered the Sulige gas field in the Changqing oil and gas region, which had total proved natural gas reserves of 12,972.8 Bcf as of December 31, 2022. Sulige gas field is currently the largest gas field in China.

Changqing crude oil has low sulfur content and is paraffin-based. We have configured the Changqing oil region with refineries specializing in the refining of Changqing crude oil located in the adjacent area. Sinopec

also has refineries nearby. In addition, supporting railway facilities have been built for outgoing transportation of relevant products from the Changqing oil and gas region. We therefore have a stable market for the crude oil we produce in the Changqing oil region. The majority of the natural gas produced at the Changqing oil and gas region has been transmitted to Beijing, Tianjin and Hebei regions and a small portion is offered for sale in Shaanxi, Inner Mongolia, Gansu, Ningxia and other parts of Northwestern China.

Xinjiang Oil Region

We commenced operations in the Xinjiang oil region in 1950s. The Xinjiang oil region is located in the Junggar basin in Northwestern China, consisting of 29 oil producing blocks. In 2022, our crude oil production fields in the Xinjiang oil region produced an average of 288.6 thousand barrels per day, representing approximately 11.6% of our total daily crude oil production.

As of December 31, 2022, our proved crude oil reserves in the Xinjiang oil region were 961.8 million barrels, representing 15.0% of our total proved crude oil reserves. As of December 31, 2022, the crude oil reserves-to-production ratio at the Xinjiang oil region was approximately 9.1 years.

Xinjiang crude oil comes in multiple varieties, namely light crude oils, medium crude oils and heavy crude oils. We have configured Xinjiang oilfields with refineries located in the adjacent area and pipelines for crude oil outgoing transportation so that the crude oil produced in the Xinjiang oil region can be delivered to other refineries located in the western region. We therefore have a stable market for the crude oil we produce in the Xinjiang oil region.

Tarim Oil and Gas Region

In 1980s, we discovered Tarim oil and gas region. The Tarim oil and gas region is located in the Tarim basin in Northwestern China, consisting of 33 oil producing blocks. In 2022, the Tarim oil and gas region produced an average of 148.7 thousand barrels of crude oil per day and an average of 2.9 Bcf of natural gas for sale per day, respectively, representing approximately 6.0% of our total daily crude oil production, and approximately 22.3% of our total daily natural gas for sale, respectively.

As of December 31, 2022, the Tarim oil and gas region had total proved crude oil reserves of 442.2 million barrels and total proved natural gas reserves of 19,633.1 Bcf, respectively, representing 6.9% of our total proved crude oil reserves and 26.7% of our total proved natural gas reserves, respectively. As of December 31, 2022, the oil and natural gas reserves-to-production ratio in the Tarim oil and gas region was approximately 16.3 years.

We deliver natural gas produced in the Tarim oil and gas region through gas pipelines to the central and eastern regions of China where there is strong demand for natural gas.

Chuanyu Gas Region

We commenced natural gas exploration and production in the Chuanyu gas region in the 1950s. The Chuanyu gas region is located in the Sichuan basin in Southwestern China, consisting of 119 gas producing blocks.

In 2022, the Chuanyu gas region produced an average of 3.4 Bcf of natural gas for sale per day, representing approximately 26.6% of our total daily production of natural gas for sale. As of December 31, 2022, our proved natural gas reserves in the Chuanyu gas region were 16,663.8 Bcf, representing 22.7% of our total proved natural gas reserves. As of December 31, 2022, the natural gas reserves-to-production ratio in the Chuanyu gas region was approximately 13.4 years.

In 2019, we discovered the Sichuan shale gas field in the Chuanyu gas region. As of December 31, 2022, the proved reserves in the Sichuan shale gas field were 1,970.6 Bcf.

The majority of the natural gas produced at the Chuanyu gas region is offered for sale in the Chuanyu region and only a small portion is transmitted to Central and South China.

New Energy Business

We have accelerated the development of new energy business and the construction of key projects, achieving remarkable results in the expansion in the markets of clean energy substitution for production and external clean energy supply. We have strived to obtain clean power grid connection, and vigorously promoted wind power generation, photovoltaic power generation, geothermal heating and CCUS businesses. Our first integrated wind and solar storage development project – the Daqing Oilfield Puerlian small-sized distributed generation cluster demonstration and application project (first phase) has been connected to the power grid for power generation. In 2022, we completed wind and photovoltaic power projects with an aggregate installed capacity of more than 1.4 million kilowatts and an aggregate geothermal heating area of 25 million square meters. In 2022, the total capacity of our new energy projects developed and utilized amounted to 8 million tons of standard coal per year.

Refining, Chemicals and New Materials

We now operate 33 enterprises located in nine provinces, four autonomous regions and three municipalities to engage in refining of crude oil and petroleum products, as well as the production and marketing of basic petrochemical products, derivative chemical products, new materials and other chemical products.

In 2022, we grasped opportunities arising from the industry and market demand changes in the refining, chemicals and new materials business, and continued to push forward the transformation and upgrades. We promptly optimized the workload of production equipment and products structure, adhered to the strategy to reduce the production of refined products and increase the production of chemical products, to reduce the production of traditional refining products and increase the production of special petroleum products, and vigorously developed new chemical products and materials. We also improved the integrated technical service system of production, marketing, research and application, leveraged the function of the "PetroChina e-Chemical" platform, and strengthened the marketing of chemical products. In 2022, we processed 1,212.7 million barrels of crude oil, representing a decrease of 1.0% as compared with last year, among which 688.7 million barrels of crude oil were from our oil and gas business, accounting for 56.8% of the total amount and showing good synergic effects; we produced 105.354 million tons of refined oil, representing a decrease of 3.1% as compared with last year; the volume of chemical products output was 31.568 million tons, representing an increase of 2.5% as compared with last year; the output of ethylene, synthetic resin and urea increased by 10.5%, 6.6% and 5.2%, respectively, as compared with last year; and the volume of new chemical materials output reached 0.855 million tons, representing an increase of 56.3% as compared with last year.

The following table sets forth the financial and operating data of our refining and chemicals segment for each of the years ended December 31, 2020, 2021 and 2022.

	Year Ended December 31,		
	2020	2021	2022
Revenue (RMB in millions)	774,775	974,972	1,164,596
Profit from operations/(loss) (RMB in millions)	(1,834)	49,740	40,570
Crude oil processed (million barrels)	1,177.5	1,225.0	1,212.7
Crude oil primary distillation capacity (million barrels/year)	1,492.6	1,492.6	1,640.4
Production of refined oil products (thousand tons)	107,042	108,712	105,354

Refining

Refined Products

We produce a wide range of refined products at our refineries. Some of the refined products are for our internal consumption and used as raw materials in our petrochemical operation. The table below sets forth production volumes of our principal refined products in 2020, 2021 and 2022.

Principal Products	Year Ended December 31,		
	2020	2021	2022
	(In thousand tons)		
Diesel	50,719	48,245	53,648
Gasoline	46,280	49,388	43,514
Kerosene	10,043	11,079	8,192
Lubricants	1,575	1,964	1,679
Fuel oil	4,086	6,662	9,387
Naphtha	12,706	12,878	11,745

Our Refineries

Most of our refineries are strategically located close to our crude oil production and storage bases along the crude oil and refined product transmission pipelines and railways, which provide our refineries with secure supplies of crude oil and facilitate our distribution of refined products to the domestic markets.

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In 2020, 2021 and 2022, our exploration and production operations supplied approximately 57.6%, 55.8% and 56.8%, respectively, of the crude oil processed in our refineries.

In 2022, Daqing Petrochemical, Jilin Petrochemical, Fushun Petrochemical, Lanzhou Petrochemical, Dushanzi Petrochemical, Dalian Petrochemical, Dalian West Pacific, Liaoyang Petrochemical, Huabei Petrochemical, Urumqi Petrochemical, Guangxi Petrochemical, Sichuan Petrochemical and Yunnan Petrochemical were our principal refineries in terms of both primary distillation capacity and refining throughput. Guangdong Petrochemical will also be a principal refinery once it is put into production. The table below sets forth the primary distillation capacity and refining throughput of our principal refineries in 2020, 2021 and 2022.

	As of December 31,		
	2020	2021	2022
Primary distillation capacity ⁽¹⁾ (thousand barrels per day)			
Daqing Petrochemical	202.4	202.4	202.4
Jilin Petrochemical	198.4	198.4	198.4
Fushun Petrochemical	222.7	222.7	222.7
Lanzhou Petrochemical	212.6	212.6	212.6
Dushanzi Petrochemical	202.4	202.4	202.4
Dalian Petrochemical	415.0	415.0	415.0
Dalian West Pacific	202.4	202.4	202.4
Liaoyang Petrochemical	182.2	182.2	182.2
Huabei Petrochemical	202.4	202.4	202.4
Urumqi Petrochemical	172.1	172.1	172.1
Guangxi Petrochemical	202.4	202.4	202.4
Sichuan Petrochemical	202.4	202.4	202.4
Yunnan Petrochemical	263.2	263.2	263.2
Guangdong Petrochemical	—	—	404.8
Other refineries	1,208.7	1,208.7	1,208.7
Total	4,089.3	4,089.3	4,494.1

(1) Represents the primary distillation capacity of crude oil and condensate.

	Year Ended December 31,		
	2020	2021	2022
Refining throughput (thousand barrels per day)			
Daqing Petrochemical	122.6	163.6	160.3
Jilin Petrochemical	178.8	158.7	182.3
Fushun Petrochemical	162.8	145.2	166.0
Lanzhou Petrochemical	183.7	182.4	189.7
Dushanzi Petrochemical	143.6	147.6	156.7
Dalian Petrochemical	269.0	317.8	310.0
Dalian West Pacific	166.0	166.9	117.8
Liaoyang Petrochemical	173.3	165.9	161.0
Huabei Petrochemical	110.4	123.5	116.2
Urumqi Petrochemical	123.2	125.4	135.6
Guangxi Petrochemical	157.5	197.2	187.7
Sichuan Petrochemical	207.3	166.9	165.1
Yunnan Petrochemical	154.8	197.0	202.2
Other refineries	1,072.9	1,098.0	1,071.8
Total	3,225.9	3,356.1	3,322.4

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In 2022, Guangdong Petrochemical's integrated refining and chemicals project, Jilin Petrochemical's Jieyang ABS project and certain other projects have been fully completed. The construction of key projects such as Jilin Petrochemical's refining and chemical transformation and upgrading project has commenced.

The table below sets forth the major indicators of the realized productivity of our refineries in each of 2020, 2021 and 2022.

	Year Ended December 31,		
	2020	2021	2022
Average utilization rate of primary distillation capacity (%)	80.0	82.5	80.9
Average yield for principal refined products (%) ^{(1) (2)}	68.2	66.8	65.2
Overall refining yield (%)	93.5	93.9	93.9

- (1) Principal refined products include gasoline, kerosene, diesel and lubricant.
- (2) "Yield" represents the number of tons of a refined product expressed as a percentage of the number of tons of crude oil from which that product is processed.

Chemicals

Most of our chemical plants are close to our refineries and are connected to the refineries by pipelines, providing additional production flexibility and opportunities for cost competitiveness. The raw materials required by our chemicals operations are mainly supplied by our own refineries.

Our Chemical Products

The table below sets forth the production volumes of our principal chemical products for each of the years ended December 31, 2020, 2021 and 2022.

	Year Ended December 31,		
	2020	2021	2022
	(In thousand tons)		
Basic petrochemicals			
Ethylene	6,345	6,713	7,419
Derivative petrochemicals			
Synthetic resin	10,287	10,903	11,620
Synthetic fiber raw materials and polymers	1,278	1,146	1,099
Synthetic rubber	1,001	1,044	1,044
Other chemicals			
Urea	2,163	2,422	2,549

We are one of the major producers of ethylene in China. We use the bulk of the ethylene we produce as a principal feedstock for the production of many chemical products, such as polyethylene. As of December 31, 2022, our annual ethylene production capacity was 8,610 thousand tons. We produce a number of synthetic resin products, including polyethylene, polypropylene and ABS. As of December 31, 2022, our annual production capacities for polyethylene, polypropylene and ABS were 7,662 thousand tons, 5,020 thousand tons and 1,303 thousand tons, respectively.

Marketing of Chemicals

Our chemical products are distributed to a number of industries including the automotive, construction, electronics, pharmaceutical, printing, electrical appliances, household products, insulation, packaging, paper, textile, paint, footwear, agriculture and furniture industries.

The following table sets forth the sales volumes of our chemical products by principal product category for each of the years ended December 31, 2020, 2021 and 2022.

Products	Year Ended December 31,		
	2020	2021	2022
	(In thousand tons)		
Derivative petrochemicals			
Synthetic resin	10,912.8	11,302.1	11,733.2
Synthetic fiber	25.2	22.7	33.6
Synthetic rubber	1,098.4	1,066.4	1,052.5
Intermediates	12,929.0	13,525.6	13,074.7
Other chemicals			
Urea	2,596.9	2,399.1	2,562.2

Marketing

We engage in domestic marketing of refined products through 34 regional sales companies including two distribution branch companies and one convenience store chain company, PetroChina uSmile Company Limited, operated under the trade name “uSmile”. These operations include transportation and storage of the refined products, wholesale, retail and export of gasoline, diesel, kerosene and other refined products, and non-oil business. We engage in international trade business through PetroChina International Company Limited. Its major businesses include international trade in crude oil, refined oil, natural gas, petrochemical products, oil and gas entrepot trade, investment, construction and operation of overseas trade operation platforms, and futures business.

The following table sets forth the financial and operating data of our marketing segment for each of the years ended December 31, 2020, 2021 and 2022:

	Year Ended December 31,		
	2020	2021	2022
Revenue (RMB in millions)	1,497,533	2,170,062	2,771,894
(Loss)/profits from operations (RMB in millions)	(2,906)	13,277	14,374
External sales volume of gasoline, kerosene and diesel (thousand tons)	161,230	163,307	150,649

With respect to our domestic sales business, our marketing network consists of:

- Nationwide wholesale distribution outlets. Almost all of these outlets are located in high demand areas across China, particularly in the coastal areas, along major railways and along the Yangtze River. We sell refined products both directly and through distributors to various wholesale markets, as well as to utility, commercial, petrochemical, aviation, agricultural, fishery and transportation companies in China.
- Service stations owned and operated by us and franchised service stations owned and operated by third parties across China.

In relation to domestic marketing, in 2022 we actively responded to unfavourable environment such as the decline in market demand, by optimizing resource allocation and inventory management for marketing business, ensuring the smooth operation of our refining business, and maintaining the overall stability of the industry chain. By leveraging the advantages arising from the domestic refined oil market’s continuous standardization, we adhered to strategies such as the integration of wholesale and retail, mutual promotion of refined oil and non-oil products, and integration of online and offline marketing to increase our market share. We adapted to the new trends in energy consumption and actively promoted the building of sales networks such as oil and gas stations, charging and swapping stations, photovoltaic stations and comprehensive energy service stations. We explored the “oil + commodity + service” marketing model and strived to expand the sales of our non-oil business.

In relation to international trade, in 2022, we actively promoted the overseas oil sale channels, and coordinated the export of refined oil and chemical products. We took various actions to ensure the smooth operation of the industrial chain and to maximize our overall profitability.

The PRC government and other institutional customers, including railway, transportation and fishery operators, are long-term purchasers of the gasoline and diesel that we produce. We sell gasoline and diesel to these customers based on the supply prices for special customers prescribed by the PRC government. See “Item 4 — Regulatory Matters — Pricing — Refined Products” for a discussion of refined product pricing.

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The following table sets forth the major operation data relating to our marketing segment for the years ended December 31, 2020, 2021 and 2022:

	Year Ended / As of December 31,		
	2020	2021	2022
Sales volume of gasoline, kerosene and diesel (thousand tons)	161,230	163,307	150,649
Of which: Gasoline	66,084	65,981	58,209
Kerosene	14,350	15,598	13,678
Diesel	80,796	81,728	78,762
Domestic sales volume of gasoline, kerosene and diesel (thousand tons)	105,896	112,493	105,164
Of which: gasoline	49,188	52,626	44,284
Kerosene	8,331	9,005	5,467
Diesel	48,377	50,862	55,413
Lubricants sales volume (thousand tons)	1,404	1,565	1,132
Market share in domestic refined oil market (%)	35.9	35.3	34.4
Number of service stations	22,619	22,800	22,586
Of which: owned service stations	21,042	20,734	20,564
Sales volume per service station (tons/day)	8.48	8.05	7.79
Number of convenience stores	20,212	20,178	20,600

Natural Gas Sales

We are China's largest natural gas seller. We sell natural gas primarily to industrial companies, power plants, fertilizer and chemical companies, commercial users and municipal utilities owned by local governments.

In 2022, for the natural gas sales business, we overcame the unfavourable situation of cost increase for imported natural gas and decline in consumption in the domestic market, continuously optimized the scale and structure of imported gas, and the market structure and sales flow according to the profitability principle, and enhanced the promotion of end customer market; we optimized marketing strategies, enhanced professional marketing and sales ability and actively developed online transactions to improve sales profitability.

The following table sets forth the financial and operating data of our natural gas sales segment for each of the years ended December 31, 2020, 2021 and 2022:

	As of December 31,		
	2020	2021	2022
Revenue (RMB in millions)	370,771	417,022	519,211
Profit from operations (RMB in millions)	72,410	43,965	12,957
Total volume of natural gas sold (Bcf)	8,784.4	9,675.4	9,191.9

Our Principal Markets for Natural Gas

We sell our natural gas across China. Our natural gas supply covers all provinces, municipalities under direct administration of the central government, autonomous regions and Hong Kong of China, except Macau and Taiwan. The Bohai Rim, the Yangtze River Delta and the Southwestern region in China are our principal markets for natural gas. In addition, provinces such as Inner Mongolia, and Anhui consume more and more natural gas and have become another significant natural gas market of us. We supply natural gas to these regions primarily through pipelines except for Tibet where we supply natural gas by LNG tanker trucks.

Driven by environmental and efficiency concerns, the PRC government encourages industrial and residential use of natural gas. The current value-added tax rate for natural gas is 9%, while the value-added tax rate for crude oil and refined oil products is 13%.

Competition

As an oil and gas company operating in a competitive industry, we compete in each of our business segments in both China and international markets for desirable business prospects and for customers. At present, our principal competitors in China are China Petrochemical Corporation, or Sinopec Group, and China National Offshore Oil Corporation, or CNOOC.

Oil, Gas and New Energy

We are the largest onshore oil and gas company in China in terms of proved crude oil and natural gas reserves as well as crude oil and natural gas production and sales. However, we compete with other domestic oil and gas companies for the acquisition of desirable crude oil and natural gas prospects. Similarly, we face some competition in the development of offshore oil and gas resources. In 2019, the Chinese government lifted the restrictions on foreign investment in oil and gas exploration and development, which had been limited to joint ventures and cooperation, introduced market competition mechanisms in the oil and gas industry to support private enterprises participating in oil and gas exploration and development. These policy changes mean that the barriers to entering the area of oil and gas exploration have been removed, and our exploration and development business may face heightened competition from foreign capital and private enterprises. In addition, the competition of international energy supply has intensified, the crude oil market continues to fluctuate, and price volatility has become frequent. We believe that our experience in crude oil and natural gas exploration and

production and our advanced exploration and development technologies that are suitable for the diverse geological conditions in China will enable us to maintain our leading position in discovering and developing crude oil and natural gas reserves in China.

We have a competitive advantage in the development of new energy. We have abundant wind, solar and geothermal resources within our oil and gas fields. We will vigorously promote the integration of wind, solar, gas and electricity and the scale application of geothermal energy, promote the development of the use of hydrogen energy within our whole industry chain, and promote our transformation into a comprehensive energy company of oil, gas, thermoelectric and hydrogen.

Refining, Chemicals and New Materials and Marketing

We compete with our primary competitor Sinopec in our refining and chemicals operations and marketing operations on the basis of price, quality and customer service. Most of our refineries and chemical plants are located in the Northeastern and Northwestern regions of China where we have the significant market share for refined products and chemical products. We sell the remainder of our refined products and chemical products to the Eastern, Southern, Southwestern and Central-southern regions of China, where our products have a considerable market share. The Eastern and Southern regions of China, where refined products and chemical products are in higher demand, are important markets for our refined products and chemical products. Sinopec has a strong presence in the Eastern and Southern regions of China in competition with us, and most of Sinopec's refineries, chemical plants and distribution networks are located in these regions in close proximity to these markets. Moreover, as the newly constructed facilities of CNOOC commenced operation in the same region, large quantity of chemical products have been marketed into that area, which made the competition even intense. We expect that we will continue to face competition in our refined products and chemical products sales in these regions.

In recent years, China has gradually liberalized the restrictions on market access for the refining and chemical industry. The refining and chemical industry led by us and Sinopec has been rapidly transformed into diversified market participants. Some large state-owned enterprises and private enterprises have entered the refining and chemical industry. Local refineries have rapidly emerged, and international refining and chemical companies have recently opened large refineries in China. The restrictions on foreign investment in wholesale and retail chains of refined oil have been further liberalized. In 2019, the Chinese government issued policies to further liberalize market access for private enterprises, encouraging private enterprises to enter the industries of refineries and sales, and to construct storage and transportation infrastructure for refined oil, and encourage qualified enterprises to participate in crude oil imports and refined oil exports. We expect to continue to face strong market competition.

We also face competition from imported refined products and chemical products in terms of price and quality. In recent years, competition from foreign producers of refined products and chemical products has increased as a result of changes in China's tariff policies toward imported refined products and chemical products. In response, we have sought to reduce our production costs, improve the quality of our products and optimize our product mix.

In addition, we also face competition from alternative energy. Alternative energy is developing rapidly in China, and electric power, liquefied gas, natural gas and biodiesel have increasingly become effective alternatives to refined oil, continually reducing the demand for refined oil. Among them, vehicular natural gas is still the main substitute for refined oil. Driven by the national policy and breakthroughs in battery and self-driving technologies, China's electric vehicle industry has developed rapidly, which has led to a rapid growth in the number of electric cars in China. Electricity is expected to replace vehicular natural gas as the primary alternative energy source for refined oils and will continuously reduce the importance of refined oils as a major energy source. In October 2020, the State Council issued the New Energy Vehicle Industry Development Plan (for 2021-2035), according to which China expects that the share of new energy vehicles out of total vehicle sales in China will rise to 20% by 2025 and pure electric vehicles will account for the majority of vehicle sales by 2035.

Natural Gas Sales

We are the largest natural gas supplier in the PRC in terms of sales volume. Currently, we mainly face competition from Sinopec, CNOOC, coal-based natural gas producers and importers of natural gas and LNG in the supply of natural gas to Beijing, Tianjin, Hebei Province, Shanghai, Jiangsu Province, Anhui Province, Henan Province, Hubei Province, Hunan Province and the Northwestern regions of China, our existing principal markets for natural gas. Currently, Sinopec has natural gas fields in Sichuan Province and Chongqing Municipality and sells natural gas to users in places such as Sichuan Province, Chongqing, Hunan Province, Jiangsu Province, Zhejiang Province and Shanghai. We have also expanded into the coastal regions in Eastern and Southern China where we face competition from CNOOC and Sinopec. Over the recent years, as the reform of the oil and gas regulatory system has continuously progressed amidst macro-economic changes, the reshaping of the oil and gas industry has accelerated in China. In addition to us, Sinopec and CNOOC, more and more other companies are expected to join the competition in the natural gas resources sector and oil and gas terminal business. We believe that our advantages in natural gas resources, production, sales and technologies will enable us to maintain our position as a leading player in the natural gas markets in China. See “Item 3 — Key Information — Risk Factors — Risks Related to Competition”.

Environmental Matters

We are subject to numerous national, regional and local environmental and ecological protection laws and regulations promulgated by the governments in those jurisdictions where we have business operations. These laws and regulations concern our oil and gas exploration and production operations, petroleum and petrochemical products and other activities. In particular, some of these laws and regulations:

- require an environmental impact evaluation report to be submitted and approved prior to the commencement of exploration, production, refining and chemical projects;
- restrict the type, quantities, and concentration of various substances that can be released into the environment in connection with drilling and production activities;
- limit or prohibit drilling activities within protected areas and certain other areas; and
- impose penalties for pollution resulting from oil, natural gas and refining operations, including criminal and civil liabilities for serious pollution.

These laws and regulations may also restrict the emissions into the air and discharges into water from our gas processing plants, chemical plants, refineries, pipeline systems and other facilities that we own or operate. In addition, our operations are subject to laws and regulations relating to the generation, handling, storage, transportation, disposal and treatment of solid waste materials. In 2020, 2021 and 2022, we paid a total environmental protection tax of approximately RMB143 million, RMB155 million and RMB127 million, respectively.

To meet future environmental obligations, we have been committed to developing effective environmental protection measures. These measures include:

- building eco-friendly projects;
- improving the quality of refined oil products and reducing toxic substances in refined oil products;
- improving the utilization efficiency of energy sources, water, land, raw materials and other resources, and continuously reducing emissions and effluents from operations;
- strengthening the automated monitoring and control of effluents and emissions;
- adopting clean production technologies and enhancing the comprehensive utilization of oil containing wastes and other similar solid wastes;

- continuously improving our system of biodiversity conservation, incorporating biodiversity risk assessment into the whole life cycle management of projects, and carrying out a variety of biodiversity conservation practices;
- deploying across our company on a world-wide basis a centralized HSE management system and risk management platform to identify environmental risks, and implementing strict hierarchical management and level by level prevention of environmental risks; and
- incorporating ecological and environmental protection factor into the performance appraisal of the management of our company, subsidiaries and branch companies, and implementing a life-long accountability system for ecological and environmental responsibility.

Our capital expenditures on environmental programs in 2020, 2021 and 2022 were approximately RMB2.94 billion, RMB3.92 billion and RMB3.91 billion, respectively.

Because a number of our production facilities are located in populated areas, we have established a series of preventative measures to improve the safety of our employees and surrounding residents and minimize disruptions or other adverse effects on our business. These measures include:

- providing the residents surrounding our production facilities with printed materials to explain and illustrate safety and protection knowledge and skills; and
- enhancing the implementation of various effective safety production measures we have adopted previously.

We believe that these preventative measures have helped reduce the possibility of incidents that may result in serious casualties and environmental consequences. In addition, the adoption of these preventative measures has not required significant capital expenditures to date, and therefore, will not have a material adverse effect on our results of operations and financial condition.


See “Item 3 — Key Information — Risk Factors — Risks Related to Environmental Protection and Safety” and “Item 3 — Key Information — Risk Factors — Risks Related to Climate Change”.

Properties, Plants and Equipment

We own substantially all of our properties, plants and equipment relating to our business activities. We hold exploration and production licenses covering all of our interests in developed and undeveloped acreage, oil and natural gas wells and relevant facilities.

See the description of our properties, plants and equipment relating to our business activities included elsewhere in this “Item 4 — Information on the Company” and “Item 7 — Major Shareholders and Related Party Transactions — Related Party Transactions”.

Intellectual Property

Our logo “” is jointly owned by us and CNPC and has been used since December 26, 2004. Together with CNPC, we have applied for trademark registrations of the logo both in China and abroad. We have received 506 International Trademark Registration Certificates for our logo covering more than 50 jurisdictions.

As of December 31, 2022, we owned approximately 19,869 patents in China and other jurisdictions. We were granted 1,598 patents in 2022.

Regulatory Matters

Overview

China's oil and gas industry is subject to regulation by the PRC government with respect to exploration, production, transmission and marketing of crude oil and natural gas as well as production, transportation and marketing of refined products and chemical products. The central government authorities which exercise control over China's oil and gas industry include, but not be limited to:

- The National Energy Administration, or the NEA, which 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 energy and new energy, and organizing matters relating to energy conservation and comprehensive utilization as well as environmental protection for the energy industries.
- The Ministry of Natural Resources, or the MNR, which has the authority to grant, examine and approve mineral resources exploration and production licenses, and to oversee the registration and transfer of exploration and production licenses;
- The Ministry of Commerce, or the MOFCOM, which
 - determines and grants import and export volume quotas for crude oil and refined oil products;
 - issues import and export licenses for crude oil and refined products to oil and gas companies that have obtained import and export quotas;
 - is responsible for the record-filing of Sino-foreign joint venture contracts, and monitoring the foreign investors' oil and gas exploration projects in the PRC; and
 - is responsible for approving and filing of overseas investment projects by PRC enterprises.
- The National Development and Reform Commission, or the NDRC, which
 - is responsible for industry administration, industry policy and policy coordination over China's oil and gas industry;
 - publishes guidance prices for natural gas and maximum retail prices for gasoline and diesel;
 - formulates the plan for aggregate import and export volume of crude oil and refined products in accordance with the market supply and demand in China;
 - approves significant petroleum, natural gas, oil refinery and chemical projects set forth under the Catalogs of Investment Projects Subject to Approval of the Central Government; and
 - approves Sino-foreign equity and cooperative projects of certain types.
- The Ministry of Ecology and Environment, which
 - is responsible for taking measures to address climate change concerns, proposing and formulating significant strategies, plans and policies to address climate change concerns and reduce greenhouse emissions, and supervising the achievement of emissions compliance targets;
 - is responsible for supervising and administering the prevention and treatment of environmental pollution, and guiding, coordinating and supervising the protection and restoration of the ecological environment;
 - is responsible for supervising and administering the ecological and environmental access, evaluating the environmental impact of critical economic and technological policies and development plans, and significant economic development programs entrusted to it by the State Council; examines and approves or reviews environmental impact evaluation documents for critical development or construction areas, plans or projects; and formulates and organizes the implementation of the ecological and environment access lists;

- The National Anti-Monopoly Bureau, which
 - is responsible for proposing and formulating anti-monopoly rules, measures and guidelines;
 - is responsible for organizing the implementation of anti-monopoly enforcement actions; and
 - is responsible for organizing and guiding the fair competition reviews.

Exploration Licenses and Production Licenses

The *Mineral Resources Law* authorizes the MNR to exercise administrative authority over the exploration and production of mineral resources within the PRC. The *Mineral Resources Law* and its supplementary regulations provide the basic legal framework under which exploration licenses and production licenses are granted. License applicants must be companies approved by the State Council to engage in oil and gas exploration and production activities.

Applicants for exploration licenses must first register the blocks that they intend to engage in exploration activities with the MNR. The holder of an exploration license is obligated to make a progressively increasing annual minimum exploration investment in each corresponding block. Investments range from RMB2,000 per square kilometer for the initial year to RMB5,000 per square kilometer for the second year, and to RMB10,000 per square kilometer for the third and subsequent years. Additionally, the holder has to pay royalty fees that starts at RMB100 per square kilometer per year for each of the first three years and increases by an additional RMB100 per square kilometer per year for subsequent years up to a maximum of RMB500 per square kilometer per year. The maximum term of an oil and natural gas exploration license is seven years, subject to renewal upon expiration of the original term, with each renewal being up to two years. 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 proven. Upon the detection and confirmation of the quantity of reserves in a certain block, the holder must apply for a production license based on economic evaluation, market conditions and development planning in order to shift into the production phase in a timely fashion. In addition, the holder needs to obtain the right to use that block of land. Generally, the holder of a full production license must obtain a land use rights certificate for industrial land use covering that block of land.

The MNR issues production licenses to applicants on the basis of the reserves reports approved by the relevant authorities. Production license holders are required to pay a royalty of RMB1,000 per square kilometer per year. Administrative rules issued by the State Council provide that the maximum term of a production license is 30 years, 20 years, or 10 years as applicable to large, medium and small mineral blocks, respectively. In accordance with a special approval from the State Council, the MNR has issued production licenses with terms coextensive with the projected productive life of the assessed proven reserves as discussed above. Each of our production licenses is renewable upon our application 30 days prior to expiration. If oil and gas prices increase, the productive life of our crude oil and natural gas reservoirs may be extended beyond the current terms of the relevant production licenses.

The MNR comprehensively promotes the manner which mining rights are granted through competitive ways, such as bidding, auction or listing, while strictly limits the non-competitive ways.

China has implemented the regulation of unified licensing of oil and gas exploration and production, pursuant to which, if an oil and gas exploration license holder discovers any oil and gas reservoir available for production, it may commence production immediately after having submitted a report to the local natural resource authorities, and is not required to obtain a separate oil and gas production license. If such oil and gas exploration license holder has since then conducted oil and gas production activities, it is required to enter into a mining rights grant contract and complete the mining rights registration in accordance with applicable laws within five years thereafter.

Among the major PRC oil and gas companies, the exploration licenses and production licenses held by us, Sinopec and CNOOC account for the majority of mining rights in China. Among those companies, we and

Sinopec primarily engage in onshore exploration and production, while CNOOC primarily engages in offshore exploration and production. According to the new policies of the Chinese government, private enterprises and foreign-invested enterprises are allowed to obtain exploration licenses.

Pricing

In recent years, the pricing of gasoline, diesel, natural gas and pipeline transmission services, depending on the situation, has either been subject to government guiding prices or government set prices, while the pricing of crude oil and other refined oil products is not subject to government regulation.

Gasoline and Diesel

According to the *Measures for Administration of Petroleum Products Pricing* issued by the NDRC on January 13, 2016, (i) the retail prices and wholesale prices of gasoline and diesel, and the prices for supply of gasoline and oil to special customers such as social wholesale enterprises, railway and other transportation operators are expected to follow government guiding prices, and (ii) the supply prices for supply of gasoline and diesel to the country's Strategic Petroleum Reserve and Xinjiang Production and Construction Corps are expected to follow government set prices. The ceiling retail prices of gasoline and diesel are determined on the basis of international crude oil prices, by taking into consideration the average domestic processing cost, tax, reasonable circulation costs and appropriate profit margin. Further, when the international crude oil prices drop to US\$40 per barrel or below, the prices of refined oil products in China will be calculated as if the crude oil price were still US\$40 per barrel and by taking into consideration a normal processing profit margin. When the international crude oil prices rise to the range between US\$40 per barrel (exclusive) and US\$80 per barrel (inclusive), the prices of refined oil products in China will be calculated by taking into consideration a normal processing profit margin. When the international crude oil prices surge to more than US\$80 per barrel, the processing profit margin used to determine the prices of refined oil products will be reduced until to zero. When the international crude oil prices surge to US\$130 per barrel or above, appropriate financial and taxation policies will be adopted to ensure the production and supply of refined oil products but the prices of gasoline and diesel will in principle remain unadjusted or will only be slightly adjusted upwards in principle by adhering to the principle of taking into account the interests of both the producers and the consumers so as to maintain the smooth operation of the national economy. The government would adjust the gasoline and diesel prices every 10 working days in line with fluctuations in international crude oil prices. Refined oil retail enterprises have freedom to set their own specific retail prices as long as their retail prices do not exceed the ceiling prices set by the government. The ceiling supply prices of gasoline and diesel to be supplied to special customers such as railway, transportation and other business operators by domestic refined oil production and marketing enterprises are determined by reducing the ceiling national average retail price by RMB400 per ton. Domestic refined oil production and marketing enterprises may determine the specific supply prices with special customers such as railway, transportation and other business operators through negotiations subject to the ceiling supply prices published by the government. When market retail prices drop, the supply prices set for special customers will be adjusted downward accordingly. The so-called "special customers" means big customers who have for historical reasons established their own independent oil supply system, as identified in a list formulated by the NDRC. The supply prices of gasoline and diesel to be supplied to the country's Strategic Petroleum Reserve and Xinjiang Production and Construction Corps by domestic refined oil production and marketing enterprises are determined by deducting circulation markup from the ceiling national average retail price.

On March 13, 2020, the NDRC issued the updated version of the *Central Pricing Catalogue*. According to the updated Catalogue, in the interim, prices of refined oil products will continue to be determined by the existing pricing mechanism, as adjusted in line with the fluctuations in international oil prices. The updated Catalogue indicates that based on the progress of the oil and gas reform, China will fully liberalize the pricing of refined oil products and allow it to be entirely market-based in due course.

On May 18, 2021, the NDRC issued the *Notice on the Action Plan for Deepening the Pricing Reform During the 14th Five-Year Plan Period*. In the Notice, the NDRC stated that during the 14th Five-Year Plan

period, the Chinese government will conduct research to enhance the pricing mechanism for refined oil products in line with the changes in the domestic and international energy market conditions and the progress in the domestic energy pricing system.

Natural Gas

According to the updated Central Pricing Catalogue issued by the NDRC on March 13, 2020, the prices of offshore gas, shale gas, coal bed methane, coal gas, LNG, gas supplied directly to certain customers, gas supplied to and resold by gas storage facilities, gas publicly traded on trading platforms, gas imported through pipelines put into operation after 2015, and citygate gas prices in those provinces possessing conditions for determining citygate gas prices through competition should become market based. The prices of other domestically produced onshore pipeline gas and the citygate prices of the gas imported through pipelines put into operation before the end of 2014 should in the interim continue to be determined by the existing pricing mechanism, and will be liberalized and become market-based in due course as the reform to marketize the natural gas sector progresses. Pursuant to the natural gas pricing reform programs issued by the NDRC in recent years, at present, the PRC government regulates natural gas pricing mainly through the citygate benchmark price. Under this regime, gas suppliers and purchasers would determine the specific citygate prices for their transactions through negotiations by using the citygate benchmark prices published by the relevant local governments as the base and then adjusting the base either upwards by no more than 20% or downwards without limit. The NDRC also rolled out seasonal natural gas prices to encourage market-oriented pricing. Natural gas production and marketing enterprises and users are encouraged to proactively trade on natural gas trading platforms. Prices of natural gas publicly traded on natural gas exchanges such as Shanghai Oil and Gas Exchange and Chongqing Oil and Gas Exchange are entirely driven by market conditions.

On May 18, 2021, the NDRC issued the *Notice on the Action Plan for Deepening the Pricing Reform During the 14th Five-Year Plan Period*. In the Notice, the NDRC stated that during the 14th Five-Year Plan period, China would steadily advance the oil and natural gas pricing reform. By following the guidelines “to control the middle and liberalize the two ends” and in line with the progress in the independent operation of natural gas pipeline network and diversification of the entities operating in oil and gas exploration and development, gas supply and gas sales sectors, the market-oriented citygate gas pricing reform will be steadily pushed forward, enhancing the mechanism to synchronize the terminal selling prices with the purchasing costs. Meanwhile, great effort will be made to coordinate the boosting of fair access to urban gas distribution networks, reduce the gas distribution levels, tighten the monitoring over the gas distribution pricing, and explore ways to advance the marketization of the pricing of the natural gas supplied to end users.

Pipeline Transmission Tariff

Pipeline transmission tariffs for crude oil, refined oil and natural gas are set by the government. Cross province transmission tariffs are set by the NDRC and provincial transmission tariffs are set by the provincial level branches of the NDRC.

For those pipelines constructed prior to 1984, which were funded by the government, the transmission tariff is a uniform flat tariff determined based on the principle of minimum profit margin. For those pipelines constructed with the funds of the enterprises after 1984, the tariffs must be submitted to the NDRC for examination and approval on a case by case basis and based on the capital investment made in the pipeline, the operation period for the pipeline and a reasonable profit margin.

On October 9, 2016, the NDRC issued *Regulation on Administration of the Pipeline Transmission Tariff for Natural Gas (on trial)* and *Rules on Supervision and Review of the Costs Used in Setting the Pipeline Transmission Tariff (on trial)*, which provides that effective January 1, 2017, the pipeline transmission tariff for natural gas shall be reviewed and determined on the principle of “permissible costs plus reasonable margins”, and the rules intended to regulate the tariff charged by companies engaged in cross-province pipeline transmission operation.

On June 7, 2021, the NDRC issued the *Regulation on Administration of the Pipeline Transmission Tariff for Natural Gas (Interim)* and the *Rules on Supervision and Review of the Costs Used in Setting the Pipeline Transmission Tariff (Interim)*. The Regulations and the Rules generally simplified the current mechanism for setting the natural gas pipeline transmission tariffs by reducing the number of China's pipeline price zones from 15 to 4. According to the Regulations and the Rules, going forward, the rates of return allowed for natural gas pipeline network transmission businesses shall be adjusted dynamically by taking into account China's national strategic requirements and industrial development needs and users' bearing capacity. The Regulation and Rules further state that the initially approved rate of return shall be 8% and the depreciable life of the pipelines used for setting the natural pipeline transmission tariffs shall be extended from 30 years to 40 years.

Production and Marketing

Crude Oil

Each year, the NDRC publishes the projected target for the production and processing of crude oil in China based on the domestic consumption estimates submitted by domestic producers, including but not limited to us, Sinopec and CNOOC, the production of these companies as well as the forecast of international crude oil prices. The actual production volumes are determined by the producers themselves and may vary from estimates. The MOFCOM and its local branches were previously responsible for supervising and managing the crude oil market. Enterprises that meet certain operating conditions may apply for the permit for crude oil sales and warehousing business. On December 3, 2019, the MOFCOM issued the *Notice on Proper Implementation of the Reform to "Streamline Administration, Delegate Power, Strengthen Regulation and Improve Services" in the Administration of Circulation of Refined Petroleum Products*. According to the Notice, MOFCOM offices will no longer accept applications for qualifications for crude oil marketing or warehousing business, or for amendment, renewal or cancellation of the certificates of such qualifications, and such certificates shall expire automatically upon expiration and will not be taken back. This means that the operation of crude oil marketing and warehousing business will no longer be subject to MOFCOM approval.

Refined Products

Historically, only we and Sinopec had the right to conduct gasoline and diesel wholesale business. Other companies, including foreign invested companies, were not allowed to engage in wholesale of gasoline and diesel in China's domestic market. In general, only domestic companies, including Sino-foreign joint venture companies, were permitted to engage in retail of gasoline and diesel. Since December 11, 2004, wholly foreign-owned enterprises are permitted to conduct refined oil retail business. Since January 1, 2007, when the *Measures on the Administration of the Refined Products Market* became effective, all entities meeting certain requirements are allowed to submit applications to the MOFCOM to conduct refined oil products wholesale, retail and storage businesses. On July 28, 2018, the PRC government removed the restriction that a Chinese partner must hold a majority share in the construction and operation of a retail oil station chain which has more than 30 outlets and sells refined products of different types and brands supplied through multiple channels. On August 27, 2019, the State Council canceled government approval of qualifications for operation of refined oil wholesale warehousing and delegated the approval of refined oil retail qualifications to local municipal governments.

On December 3, 2019, the MOFCOM issued the *Notice on Proper Implementation of the Reform to "Streamline Administration, Delegate Power, Strengthen Regulation and Improve Services" in the Administration of Circulation of Refined Petroleum Products*. According to the Notice, any market player proposed to engage in the refined petroleum product wholesale and warehousing activities may commence and carry out such activities in accordance with applicable laws and regulations after they meet relevant criteria and obtain relevant qualifications or pass relevant acceptance tests and is not required to obtain operating licenses from MOFCOM. On December 31, 2020, the General Office of the MOFCOM issued the *Guidelines for the Administration of the Refined Petroleum Product Circulation Sector*. According to the Guidelines, any market player engaged in refined petroleum product wholesale and warehousing business activities shall comply with

laws and regulations and criteria related to enterprise registration, land and resources administration, planning and construction, oil product quality, safety production, environmental protection, firefighting, terrorism-fighting, tax, transportation, meteorology, metering, etc., obtain relevant qualifications or pass relevant acceptance tests, and shall carry out business operation in accordance with laws and regulations. This means that the operation of refined oil marketing and warehousing business will no longer be subject to MOFCOM approval.

Natural Gas

The NDRC determines each year the annual national natural gas production target based on the natural gas production targets submitted by domestic natural gas producers. Domestic natural gas producers determine their annual natural gas production targets on the basis of consumption estimates. The actual production volume of each producer is determined by the producer itself, which may deviate from the production target submitted by it. The NDRC also formulates the annual natural gas supply guideline, which requires natural gas producers to distribute a specified amount of natural gas to the designated key municipalities and key enterprises.

Foreign Investments

Cooperation in Exploration and Production with Foreign Companies

Currently, CNPC is one of the few Chinese companies that have the right to cooperate with foreign companies in onshore crude oil and natural gas exploration and production in China. CNOOC has the right to cooperate with foreign companies in offshore crude oil and natural gas exploration and production in China.

Sino-foreign cooperation projects and foreign parties in onshore oil and gas exploration and production in China are generally selected through open bids and bilateral negotiations. Those projects are generally conducted through production sharing contracts. The MOFCOM must approve those contracts.

As authorized by the Regulations of the PRC on Exploration of Onshore Petroleum Resources in Cooperation with Foreign Enterprises, CNPC has the right to enter into joint cooperation arrangements with foreign oil and gas companies for onshore crude oil and natural gas exploration and production. We do not have the capacity to enter into production sharing contracts directly with foreign oil and gas companies under existing PRC law. Accordingly, CNPC will enter into production sharing contracts. After signing a production sharing contract, CNPC will, subject to approval of the MOFCOM, assign to us most of its commercial and operational rights and obligations under the production sharing contract as required by the Non-competition Agreement between CNPC and us.

In 2019, the Chinese government lifted the restrictions on foreign investment in oil and gas exploration. As a result, foreign companies are allowed to enter the oil and gas exploration and production sector through wholly-owned enterprises.

Transportation and Refining

Since December 1, 2007, PRC regulations have encouraged foreign investment in the construction and operation of oil and gas pipelines and storage facilities. On March 10, 2015, PRC lifted the restrictions on foreign investment in refineries with a production capacity of below 10 million tons per annum. Furthermore, when appropriate, projects must receive necessary approvals from relevant PRC government agencies. See “Item 3 — Key Information — Risk Factors — Risks Related to Government Regulation.”

The State Further Liberalized Oil And Gas Market Access

On June 30, 2019, the NDRC and the MOFCOM jointly issued *Special Management Measures for Foreign Investment Access (Negative List) (2019 Edition)*, pursuant to which, the restrictions on oil and gas exploration and development that were previously limited to joint ventures and cooperation were lifted.

On December 4, 2019, the Chinese government issued the *Opinions on Creating a Better Development Environment to Support the Reform and Development of Private Enterprises*, which further liberalized market access for private enterprises. It states that in key industries and fields such as power, telecommunications, railways, oil and gas, the state liberalizes competitive businesses and further introduces market competition mechanisms. It encourages private enterprises to enter the industries of oil and gas exploration and development, refining and sales, and construction of infrastructures such as storage, transportation and pipeline transportation of crude oil, natural gas and refined oil. It encourages qualified enterprises to participate in crude oil imports and refined oil exports.

Import and Export

Since January 1, 2002, state-owned trading companies have been allowed to import crude oil under an automatic licensing system. Non-state-owned trading companies have been allowed to import crude oil and refined products subject to quotas. The export of crude oil and refined oil products by both state-owned trading companies and non-state-owned trading companies is subject to quota control. The MOFCOM has granted us the right to conduct crude oil and refined product import and export business.

Capital Investment and Financing

Capital investments in exploration and production of crude oil and natural gas made by Chinese oil and gas companies are subject to approval by or filing with relevant government authorities. The following projects are subject to approval by the NDRC or the competent local authorities:

- facilities for taking delivery of and storing liquefied petroleum gas (excluding accessory projects of oil or gas fields or refineries);
- new facilities for taking delivery of or storing imported liquefied natural gas (including expansion on a different site other than the original facilities);
- oil or gas transmission pipeline networks (excluding gathering and transmission pipeline networks of oil or gas fields);
- new refineries, expansion of existing primary processing refineries;
- new ethylene, paraxylene (PX), diphenylmethane diisocyanate (MDI) projects ; and
- new coal-to-olefins projects, new coal to paraxylene (PX) projects, and new coal-to-methanol projects with a capacity of 1 million tons per annum or more.

Taxes, Fees and Royalties

We are subject to a variety of taxes, fees and royalties. The table below sets forth the major taxes, fees and royalty fees payable in China by us or by Sino-foreign oil and gas exploration and development cooperative projects. Our subsidiaries which have legal person status should report and pay enterprise income tax to the relevant tax authorities based on the applicable laws and regulations.

Tax Item	Tax Base	Tax Rate
<i>Enterprise income tax</i>	Taxable income	Standard rate is 25%; from January 1, 2021 to December 31, 2030, the corporate income tax on enterprises incorporated in encouraged industries in the western region of China will be levied at a reduced rate of 15%.
<i>Value-added tax</i>	Revenue	9% for liquefied natural gas, natural gas, liquefied petroleum gas, agricultural film and fertilizers and 13% for oil products and other products. From January 1, 2021 to December 31, 2025, (1) for natural gas imported under the long-term trade gas contracts signed before the end of 2014 and confirmed by the NDRC, the import value-added tax will be refunded at a rate of 70%; and (2) for other types of natural gas, if the import price is higher than the reference benchmark value, the import value-added tax will be refunded at a rate equal to a fraction, of which the numerator is equal to the import price less the reference benchmark value, and the denominator is the import price.
<i>Consumption tax</i>	Aggregate volume sold or self-consumed	RMB1.52 per liter for gasoline, naphtha, solvent naphtha and lubricant and RMB1.2 per liter for diesel, aviation kerosene and fuel oil.
<i>Resource tax</i>	Sales	The standard rate is 6%; but exemption or reduction may apply if qualified. From April 1, 2018 to December 31, 2023, shale gas production enjoys a 30% reduction.
<i>Crude oil special gain levy</i>	Sales amount above specific threshold	Five-level progressive tax rates from 20% to 40%, taxable if the crude oil price reaches the threshold of US\$65 per barrel.
<i>Environmental protection tax</i>	Air pollution equivalent, water pollution equivalent, solid waste pollution equivalent and noise exceeding the standard decibel	Effective January 1, 2018, the PRC government started to impose environmental protection tax. Different emissions apply their corresponding tax rates. If a taxpayer's emission of taxable atmospheric pollutants or water pollutants is less than 30% of the national and local pollutant discharge standards, the environmental protection tax shall be levied at 75%. If the taxpayer's emission of taxable atmospheric pollutants or water pollutants is less than 50% of the national and local pollutant discharge standards, the environmental protection tax shall be levied at 50%.
<i>Mining right royalty</i>	Area	RMB100 to RMB500 per square kilometer per year for exploration; RMB1,000 per square kilometer per year for production.
<i>Royalty fee ⁽¹⁾</i>	Production volume	Progressive rate of 0-12.5% for crude oil and 0-3% for natural gas.

(1) It shall be paid in cash and is only applicable to Sino-foreign oil and gas exploration and development cooperative projects in China. However, effective December 1, 2010, the royalty fee payable by new

Sino-foreign oil and gas exploration and development cooperative projects in Western regions was replaced by the resource tax, while those cooperative projects under contracts signed before December 1, 2010 continue to be subject to the royalty fee until the contracts expire. Effective November 1, 2011, the royalty fee payable by new Sino-foreign oil and gas exploration and development cooperative projects in the whole country was replaced by the resource tax, while those cooperative projects under contracts signed before November 1, 2011 continue to be subject to the royalty fee until the contracts expire.

Environmental Regulations

We are subject to various PRC national environmental laws and regulations and also environmental regulations promulgated by the local governments in whose jurisdictions we have operations. The PRC government has adopted environmental laws and regulations that affect the operation of the oil and gas industry. There are national and local standards applicable to emissions control, discharges to surface and subsurface water and disposal, generation, handling, storage, transportation, treatment and disposal of solid waste, reduction of carbon emission and upgrade of the standards for refined products.

The environmental regulations require a company, such as us, to register or file an environmental impact report with the relevant environmental authority for approval before it undertakes any construction of a new production facility or any major expansion or renovation of an existing production facility. The new facility or the expanded or renovated facility will not be permitted to operate unless the relevant environmental authority has inspected the environmental equipment installed at the facility and decides it satisfies the environmental protection requirements. Companies that need to discharge pollutants, whether in the form of gas, water or solid wastes, must submit application for pollutant discharge permits. The application must state in detail the types of discharge, discharge outlet, types of pollutants, concentration and amount of discharge. After reviewing the application materials, the relevant environmental administrative department will determine to issue a discharge permit to the company. The permit will specify the types of permitted pollutants, the permitted concentration and amount. If a company's discharges deviated from what were permitted, the relevant administrative department may impose fines on the company or order the company to suspend or close down its operation for resolving the issues. In addition, companies discharging taxable pollutants should declare and pay corresponding environmental protection taxes in accordance with the PRC Environmental Protection Tax Law and its implementing regulations.

In order to reduce environmental pollution, the Chinese government has also raised the standards of oil products several times in recent years. After several years of upgrading and renovating our oil refining facilities, we have satisfied the relevant standards on time. In addition, we are also required to comply with relevant laws and regulations regarding management of hazardous chemicals.

On November 21, 2022, the MOF and the Ministry of Emergency Management jointly issued the amended *Administrative Measures for the Collection and Utilization of Enterprise Work Safety Funds (Cai Zi [2022] No.136)*, which provides, among others, that enterprises in various industries, including onshore and offshore oil and gas production, hazardous material operation and others, shall allocate safety production funds each month based on certain criteria, and the use of such funds by the enterprises are strictly limited to safety-related purposes. An oil and natural gas producer is required to allocate the fund at the rate of RMB20 per ton of crude oil and RMB7.5 per kilostere of gas it produced in that month. A hazardous material operator is required to allocate the funds by equal installments each month based on its revenue in the preceeding year at the regressive rates as follows: (i) 4.5% for the portion of revenue below RMB10 million; (ii) 2.25% for the portion above RMB10 million and below RMB100 million, (iii) 0.55% for the portion above RMB100 million and below RMB1 billion and (iv) 0.2% for the portion above RMB1 billion.

Policies, Regulations and Rules to Address Climate Change Concerns

On September 22, 2021, the Chinese government issued the *Opinions on Fully, Accurately and Comprehensively Implementing the New Development Philosophy and Procuring Satisfactory Performance of the Work Aiming at Achievement of the Carbon Peak and Carbon Neutrality Goals* (the “Opinions”), in which a series of milestones to be achieved and steps to be taken for finally achieving the carbon peak and carbon neutrality goals are set. The milestones for phased increase of the share of non-fossil fuels in primary energy consumption set in the Opinions are to increase the share to about 20% by 2025, about 25% by 2030, and more than 80% by 2060. According to the Opinions, China’s petroleum consumption will reach its peak plateau during the 15th Five-Year Plan period and the Chinese government will strictly control the investments in petrochemical and other high carbon projects by then.

On October 24, 2021, the State Council issued the *Action Plan for Hitting Carbon Peak by 2030* (the “Action Plan”), which sets forth in great detail the initiatives proposed to be pursued for achieving the goal to hit carbon peak by 2030. The initiatives related to petroleum, natural gas, petrochemicals and new energy mainly include the following:

- putting more effort into the development of wind energy, solar energy, and other non-fossil energy sources and increasing the total installed capacity of wind power and solar power facilities to more than 1,200,000 MW by 2030;
- reasonably adjusting and regulating oil and gas consumption; using great efforts to promote the replacement of conventional fuel oil with biological liquid fuels and sustainable aviation fuels so as to improve the energy efficiency of the end-use fuel oil products; and expediting the large-scale development of shale gas, coalbed methane, tight oil (gas) and other unconventional oil and gas resources;
- guiding natural gas consumption in an orderly manner by optimizing the structure of natural gas usage, prioritizing the supply of natural gas required for ensuring people’s livelihood and striving to promote the integrated development of natural gas together with multiple other energy sources; and supporting the use of LNG as fuel for vehicles and ships;
- for the petrochemical sector, boosting the phasing out of obsolete production capacity and strictly controlling the increase of new refining capacity with an aim to control the domestic crude oil primary processing capacity at no more than 1 billion tons by 2025; and
- extending the use of electric power, hydrogen energy, natural gas, advanced biological liquid fuels and other new energy and clean energy sources in the transportation sector with an aim to procure that by 2030, the share of incremental vehicles fueled by new and clean energy will reach around 40%, carbon emission intensity of commercial vehicles measured on the basis of converted turnover will be cut by about 9.5% compared with 2020, and comprehensive energy consumption of the national railways per unit of converted turnover will be cut by 10% compared with 2020; and striving to hit peak for petroleum consumption in the land transportation sector by 2030.

On December 28, 2021, the State Council issued the *14th Five-Year Plan for Energy Conservation and Emission Reduction* (the “Work Plan”), which primarily provided the following goals: by 2025, as compared with 2020, China’s energy consumption per unit of GDP will be reduced by 13.5%, with the total energy consumption being reasonably controlled, and China’s total emissions of chemical oxygen demand, ammonia nitrogen, nitrogen oxides and volatile organic compounds to decrease by 8%, 8%, over 10%, and over 10%, respectively. The Work Plan proposes to implement key projects for energy conservation and emission reduction, including focusing on petrochemical and chemical industries, promoting energy-saving transformation and in-depth treatment of pollutants, deepening the control of volatile organic compound pollution in petrochemical and other industries, and comprehensively improving the waste gas collection, the synchronous operation of treatment facilities, etc.

Anti-Monopoly

We are subject to the *Anti-Monopoly Law of the PRC* and other related PRC laws and regulations. Those laws and regulations prohibit dominant operators from abusing their position, or operators entering into monopoly agreements or conducting any concentration of business operators which has or may have the effect of excluding or limiting competition. Violators can be ordered to cease illegal activities, confiscated of illegal gains, and imposed a fine or other restrictive measures. The anti-monopoly law enforcement agency is the National Anti-Monopoly Bureau.

Item 4A — UNRESOLVED STAFF COMMENTS

None.

Item 5 — OPERATING AND FINANCIAL REVIEW AND PROSPECTS

General

You should read the following discussion together with our consolidated financial statements and their notes included elsewhere in this annual report. Our consolidated financial statements have been prepared in accordance with IFRS. This Item 5 does not include the comparison of 2021 to 2020, which can be found in our Form 20-F filed with the SEC on April 29, 2022.

Overview

Currently, we are engaged in a broad range of petroleum and natural gas related activities, including:

- exploration, development, production and sale of crude oil and natural gas, and new energy business;
- refining of crude oil and petroleum products, and production and marketing of primary petrochemical products, derivative chemical products, other chemical products and new materials;
- marketing of refined oil products and non-oil products and trading business; and
- sale of natural gas.

We are the largest producer of crude oil and natural gas in China. We are also one of the largest companies in China in terms of revenue. In 2022, we produced approximately 906.2 million barrels of crude oil and approximately 4,675.0 Bcf of natural gas for sale. Our refineries processed approximately 1,212.7 million barrels of crude oil in 2022. In 2022, our revenue was RMB3,239,167 million and net profit attributable to owners of the company was RMB149,380 million.

Factors Affecting Results of Operations

Our results of operations and the period-to-period comparability of our financial results are affected by a number of external factors, including changes in the prices, production and sales volume of our principal products, operating costs and the regulatory environment.

Prices of Principal Products

The fluctuations in the prices of crude oil, refined oil products, chemical products and natural gas have a significant impact on our revenue.

Production and Sales Volume for Principal Products

Our results of operations are also affected by production and sales volumes. Our crude oil and natural gas production volumes depend primarily on the level of the proved developed reserves in the fields in which we

have an interest, as well as other factors such as the general macroeconomic environment and market supply and demand conditions, while the sales of crude oil, natural gas, refined oil and chemical products are subject to our marketing capabilities and the competitive environment.

Operating costs

The general macroeconomic environment and market supply and demand conditions may also affect our operating costs. For example, labor costs and the price index (CPI) in general in the countries where we operate are affected by the global and local macroeconomic environment. Changes in commodity prices may also affect our operating costs, as it would affect our ability to pass on the change in such commodity prices through a change in the prices of our products.

Regulatory Environment

Our operating activities are subject to regulation by the PRC government, including but not limited to the issuance of exploration and production licenses, the imposition of industry-specific taxes or product-specific taxes and levies and the implementation of environmental policies and safety standards. Our results of operations will be affected by any future changes of such regulatory environment.

Critical Accounting Policies

The preparation of our consolidated financial statements requires our management to select and apply significant accounting policies, the application of which may require management to make judgments and estimates that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities as of the date of our financial statements, and the reported amounts of revenue and expenses during the reporting period. Notwithstanding the presentation of our principal accounting policies in Note 3 to our consolidated financial statements included elsewhere in this annual report, we have identified the accounting policies below as most critical to our business operations and the understanding of our financial condition and results of operations presented in accordance with IFRS. Although these estimates are based on our management's best knowledge of current events and actions, actual results ultimately may differ from those estimates.

Accounting for Oil and Gas Exploration and Production Activities

We use the successful efforts method of accounting, with specialized accounting rules that are unique to the oil and gas industry, for oil and gas exploration and production activities. Under this method, geological and geophysical costs incurred are expensed when incurred. However, all costs for developmental wells, support equipment and facilities, and proved mineral interests in oil and gas properties are capitalized. Costs of exploratory wells are capitalized as construction in progress pending determination of whether the wells find proved reserves. For exploratory wells located in regions that do not require substantial capital expenditures before the commencement of production, the evaluation of the economic benefits of the reserves in such wells will be completed within one year following the completion of the exploration drilling. Where such evaluation indicates that no economic benefits can be obtained, the relevant costs of exploratory wells will be converted to dry well exploration expenses. The relevant costs will be classified as oil and gas assets and go through impairment review if the evaluation indicates that economic benefits can be obtained. For wells with economically viable reserves in areas where a major capital expenditure would be required before production can begin, the related well costs remain capitalized only if additional drilling is under way or firmly planned. Otherwise, the well costs are expensed as dry wells. We have not capitalized any significant costs incurred when reserves are unknown in our oil and gas assets.

Oil and Gas Reserves

The estimation of the quantities of recoverable oil and gas reserves in oil and gas fields is integral to effective management of our exploration and production operations. Because of the subjective judgments

involved in developing and assessing such information, engineering estimates of the quantities of recoverable oil and gas reserves in oil and gas fields are inherently imprecise and represent only approximate amounts.

Before estimated oil and gas reserves are designated as “proved”, certain engineering criteria must be met in accordance with industry standards and the regulations of the SEC. Proved oil and gas reserves are the estimated quantities of crude oil and natural 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 the time at which 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. Therefore, these estimates do not include probable or possible reserves. Our proved reserves estimates are assessed or audited annually by independent, qualified and experienced oil and gas reserves engineering firms in the United States and Canada. Our oil and gas reserves engineering department has policies and procedures in place to ensure that these estimates are consistent with these authoritative guidelines. Among other factors required by authoritative guidelines, this estimation takes into account recent information about each field, including production and seismic information, estimated recoverable reserves of each well, and oil and gas prices and operating costs as of the date the estimate is made. The price shall be the average price during the 12-month period before the ending date of the period covered by this report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions. The costs shall be that prevailing at the end of the period.

Despite the inherent imprecision in these engineering estimates, estimated proved oil and gas reserves quantity has a direct impact on certain amounts reported in the financial statements. In addition to the capitalization of costs related to oil and gas properties on the balance sheet discussed earlier, estimated proved reserves also impact the calculation of depreciation, depletion and amortization expenses of oil and gas properties. The cost of oil and gas properties is amortized at the field level on the unit of production method. Unit of production rates are based on the total oil and gas reserves estimated to be recoverable from existing facilities based on the current terms of our production licenses. Our reserves estimates include only crude oil and natural gas which the management believes can be reasonably produced within the current terms of the production licenses that are granted by the MNR, ranging from 30 years to 55 years from the effective date of issuance in March 2000, renewable upon application 30 days prior to expiration. Consequently, the impact of changes in estimated proved reserves is reflected prospectively by amortizing the remaining book value of the oil and gas property assets over the expected future production. If proved reserves estimates are revised downward, earnings could be affected by higher depreciation expense or an immediate write-down of the property’s book value had the downward revisions been significant. Given our large number of producing properties in our portfolio, and the estimated proved reserves, it is unlikely that any changes in reserves estimates will have a significant effect on prospective charges for depreciation, depletion and amortization expenses.

In addition, due to the importance of these estimates in understanding the perceived value and future cash flows of a company’s oil and gas operations, we have also provided supplemental disclosures of “proved” oil and gas reserves estimates prepared in accordance with authoritative guidelines elsewhere in this annual report.

Property, Plant and Equipment

Where it is probable that property, plant and equipment, including oil and gas properties, will generate future economic benefits, their costs are initially recorded in the consolidated statement of financial position as assets. Cost represents the purchase price of the asset and other costs incurred to bring the asset into expected use. Subsequent to their initial recognition, property, plant and equipment are carried at cost less accumulated depreciation, depletion and amortization (including any impairment).

Depreciation, to write off the cost of each asset, other than oil and gas properties, to their residual values over their estimated useful lives is calculated using the straight-line method.

We use the following useful lives for depreciation purposes:

Buildings and plants	8-40 years
Equipment and machinery	4-30 years
Motor vehicles	4-14 years
Other	5-12 years

No depreciation is provided on construction in progress until the assets are completed and ready for use.

The assets' residual values and useful lives are reviewed, and adjusted as appropriate, at the end of each reporting period.

Property, plant and equipment, including oil and gas properties, are reviewed for possible impairments when events or changes in circumstances indicate that the carrying amount may not be recoverable. Determination as to whether and how much an asset is impaired involves management estimates and judgments such as future crude oil prices, prices of refined products and chemical products, the operation costs, the product mix, production volumes and the oil and gas reserves. Certain estimates and assumptions adopted by the management in the impairment reviews and calculations are formed by the internal professional team (including operations and finance teams) by reference to external institutions' analysis reports and taking into account current economic conditions. The other estimates and assumptions are consistent with the assumptions used in our business plans.

In forming the relevant estimates and assumptions for impairment tests by our management, our internal professional team (including operations and finance teams) forms a preliminary conclusion by reference to the external institutions' analysis reports and our historical financial data, and taking into account current economic conditions and our business plans. Then, the preliminary conclusion is reviewed and approved by the management. The approved estimates and assumptions are then utilized by our subsidiaries and branches to perform the impairment tests.

When determining whether there are indications of impairment for oil and gas properties, we consider internal factors, mainly including the decline of production and reserves volumes at the late development stage of certain oil blocks and a significant drop in economic benefits of certain oil blocks resulting from the lower price of crude oil, and external factors, mainly including a significant drop in international prices of crude oil, resulting from the imbalance of supply and demand of crude oil. When an indication of impairment of certain oil blocks is identified, we will perform the impairment tests on the oil blocks. An impairment loss is recognized for the amount by which the carrying amount of the cash-generating unit exceeds the higher of its fair value less costs to sell and its value in use. Value in use is determined by reference to the discounted expected future cash flows to be derived from the cash-generating unit.

The expected medium-to-long-term future international prices of crude oil utilized by us when estimating the expected future cash flows are determined mainly based upon the forecast of the international prices of crude oil made by principal international investment institutions combined with the judgment and analysis of the future trends of international prices of crude oil made by us. We calculated the expected future cash flows of each oil block according to the estimates of future production volume levels per year stated in the oil and gas reserves reports, the estimates of operation costs of oil and gas made by us, and taking into account our future capital expenditure plan. We refer to the weighted average cost of capital of the oil and gas industry when determining the discount rate and makes relevant adjustments according to specific risks in different countries or regions. In the years ended December 31, 2020, 2021 and 2022, the after-tax discount rates adopted by most of our oil and gas regions were in the range of 5.9%-12.0%, 7.6% -15.0% and 7.2%-16.0%, respectively.

Given the broad scope of our property, plant and equipment, the impairment test involves numerous assumptions, which are interrelated to each other to a certain extent. For example, the estimates and judgments

with respect to the product mix, production costs and oil and gas reserves may vary along with the changes in crude oil prices. The sensitivity analysis performed after taking into account the interrelationship among all of the estimates and judgments would be neither cost efficient nor time efficient. As a result, the management believes that a sensitivity analysis of relevant assumptions on impairment is not practicable. Favorable changes to some assumptions might have avoided the need to impair any assets or make it necessary to reverse an impairment loss recognized in prior periods, whereas unfavorable changes might have caused an additional unknown number of other assets to become impaired, or resulted in larger impacts on impaired assets.

Our operating results in the following fiscal year may deviate from management's estimates or judgments. This would require an adjustment to the provision for impairment of the property, plant and equipment disclosed in Note 15 to the consolidated financial statements.

Gains and losses on disposals of property, plant and equipment are determined by reference to their carrying amounts and are recorded in the consolidated profit or loss.

Interest and other costs on borrowings to finance the purchase and construction of property, plant and equipment are capitalized during the period of time that is required to complete and prepare the asset for its intended use. Costs for repairs and maintenance activities are expensed as incurred except for costs of components that result in improvements or betterments which are capitalized as part of property, plant and equipment and depreciated over their useful lives.

Asset Retirement Obligation

Provision is recognized for the future decommissioning and restoration of oil and gas properties. The amounts of the provision recognized are the present values of the estimated future expenditures. The estimation of the future expenditures is based on current local conditions and requirements, including legal requirements, technology, price level, etc. In addition to these factors, the present values of these estimated future expenditures are also impacted by the estimation of the economic lives of oil and gas properties. Changes in any of these estimates will impact our operating results and the financial position over the remaining economic lives of the oil and gas properties.

For a detailed discussion of our critical accounting policies, please see Note 3 to our consolidated financial statements included elsewhere in this annual report.

Operating Results

The following discussion is based on our historical results of operations. As a result of the factors discussed above, such results of operations may not be indicative of our future operating performance.

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The table below sets forth our statement of comprehensive income for the years ended December 31, 2020, 2021 and 2022.

	Year Ended December 31,		
	2020	2021	2022
	(RMB in millions)		
Revenue	1,933,836	2,614,349	3,239,167
Operating expenses	(1,857,899)	(2,453,196)	(3,022,507)
Profit from operations	75,937	161,153	216,660
Exchange gain /(loss), net	108	538	(1,818)
Interest expense, net	(23,505)	(16,755)	(16,816)
Share of profit of affiliates and joint ventures	3,533	13,267	15,251
Profit before income tax expense	56,073	158,203	213,277
Income tax expense	(22,588)	(43,507)	(49,295)
Profit for the year attributable to non-controlling interests	14,479	22,526	14,602
Profit for the year attributable to owners of the Company	19,006	92,170	149,380

The table below sets forth our revenue by business segment for the years ended December 31, 2020, 2021 and 2022 as well as the percentage changes for the periods shown.

	2020	2021	2021 vs. 2020	2022	2022 vs. 2021
	(RMB in millions, except percentages)				
Revenue					
Oil, gas and new energy	530,807	688,334	29.7%	929,279	35.0%
Refining, chemicals and new materials	774,775	974,972	25.8%	1,164,596	19.4%
Marketing	1,497,533	2,170,062	44.9%	2,771,894	27.7%
Natural gas sales	370,771	417,022	12.5%	519,211	24.5%
Headquarters and others	3,547	3,894	9.8%	5,473	40.5%
Total	3,177,433	4,254,284	33.9%	5,390,453	26.7%
Less: elimination	(1,243,597)	(1,639,935)	31.9%	(2,151,286)	31.2%
Consolidated net sales from operations	1,933,836	2,614,349	35.2%	3,239,167	23.9%

The table below sets forth our operating income by business segment for the years ended December 31, 2020, 2021 and 2022, as well as the percentage changes in operating income for the periods shown. Loss from operations for headquarters and others shown below consists of expenses for research and development, business services and infrastructure support to our operating business segments.

	2020	2021	2021 vs. 2020	2022	2022 vs. 2021
	(RMB in millions, except percentages)				
Profit/(loss) from operations					
Oil, gas and new energy	23,092	68,452	196.4%	165,748	142.1%
Refining, chemicals and new materials	(1,834)	49,740	—	40,570	(18.4)%
Marketing	(2,906)	13,277	—	14,374	8.3%
Natural gas sales	72,410	43,965	(39.3)%	12,957	(70.5)%
Headquarters and others	(14,825)	(14,281)	—	(16,989)	(19.0)%
Total	75,937	161,153	112.2%	216,660	34.4%

Year Ended December 31, 2022 Compared to Year Ended December 31, 2021

Consolidated Results of Operations

Overview

In 2022, we achieved a revenue of RMB3,239,167 million, representing an increase of 23.9% as compared with RMB2,614,349 million for last year. Net profit attributable to owners of the company was RMB149,380 million, representing an increase of 62.1% as compared with RMB92,170 million for last year. Basic earnings per share were RMB0.82, representing an increase of 64.0% as compared with RMB0.50 for last year.

Revenue Our revenue was RMB3,239,167 million for 2022, representing an increase of 23.9% as compared with RMB2,614,349 million for last year. This was primarily due to the increase in the prices of most of our oil and gas products. The table below sets out our external sales volume and average realized prices for the major products sold by us in 2021 and 2022 and their respective percentage of change:

	Sales Volume ('000 ton)			Average Realized Price (RMB/ton)		
	2022	2021	Percentage of Change (%)	2022	2021	Percentage of Change (%)
Crude oil (a)	125,625	158,342	(20.7)	4,645	3,198	45.2
Natural gas (hundred million cubic metres, RMB/'000 cubic metre) ^(b)	2,602.84	2,739.74	(5.0)	2,684	1,729	55.2
Gasoline	58,209	65,981	(11.8)	8,686	7,018	23.8
Diesel	78,762	81,728	(3.6)	7,861	5,395	45.7
Kerosene	13,678	15,598	(12.3)	6,771	3,661	84.9
Polyethylene	6,455	5,808	11.1	7,807	7,835	(0.4)
Polypropylene	4,007	4,272	(6.2)	7,488	7,830	(4.4)
Lubricant	1,132	1,565	(27.7)	9,149	6,858	33.4

(a) The volume of crude oil listed above represents all our external sales volume.

(b) The natural gas listed above represents all our external sales volume. The substantial increase in average realized prices was mainly due to a significant increase in overseas re-export trade prices. The average realized price of domestic natural gas increased by 27.6% as compared with last year.

Operating Expenses Operating expenses for 2022 were RMB3,022,507 million, representing an increase of 23.2% as compared with RMB2,453,196 million for last year, of which:

Purchases, Services and Other Expenses Purchases, services and other expenses for 2022 were RMB2,213,080 million, representing an increase of 25.0% as compared with RMB1,770,019 million for last year. This was primarily due to the increase in the expenses for purchasing oil and gas products and the increase in trading expenses.

Employee Compensation Costs Employee compensation costs (including salaries of employees and cost of market-oriented temporary and seasonal contractors, various types of insurance, housing provident funds, training fees and other additional costs) for 2022 were RMB163,073 million, representing an increase of 5.3% as compared with RMB154,835 million for last year. This was primarily due to an increase in employee compensation commensurate with improvements in our operating results.

Exploration Expenses Exploration expenses for 2022 were RMB27,074 million, representing an increase of 11.7% as compared with RMB24,248 million for last year. This was primarily due to that along with the increase in the prices of oil and gas, we strengthened our exploration and development efforts and vigorously promoted the increase in both our reserves and production of oil and gas.

Depreciation, Depletion and Amortisation Depreciation, depletion and amortisation for 2022 was RMB238,036 million, representing an increase of 2.9% as compared with RMB231,269 million for last year. This was primarily due to an increase in long-term assets and the structural change in oil and gas resources, partially offset by the impairment in assets.

Selling, General and Administrative Expenses Selling, general and administrative expenses for 2022 were RMB59,529 million, representing an increase of 3.0% as compared with RMB57,802 million for last year. This was primarily due to the increase of expected credit loss, and the increase in the expenses of safe production due to the increase of revenue and the higher provision standard.

Taxes other than Income Taxes Taxes other than income taxes for 2022 were RMB278,055 million, representing an increase of 22.0% as compared with RMB228,003 million for last year, among which the consumption tax for 2022 was RMB159,132 million, representing a decrease of 1.5% as compared with RMB161,623 million for last year; the resource tax for 2022 was RMB32,991 million, representing an increase of 39.1% as compared with RMB23,723 million for last year; and crude oil special gain levy for 2022 was RMB43,768 million, representing an increase of RMB39,113 million as compared with RMB4,655 million for last year.

Other (Expenses)/Income, net Other net expenses for 2022 was RMB43,660 million, as compared with a net income of RMB12,980 million for last year, primarily due to the one-time gain recorded in 2021 from the pipeline assets transaction of Kunlun Energy Company Limited ("Kunlun Energy"), a subsidiary of our company.

Profit from Operations The profit from operations for 2022 was RMB216,660 million, representing an increase of 34.4% as compared with RMB161,153 million for last year.

Net Exchange (Loss)/Gain Net exchange loss for 2022 was RMB1,818 million, as compared with a net exchange gain of RMB538 million for last year. This was primarily due to the impact of fluctuations in the exchange rate of US Dollar against RMB.

Net Interest Expense Net interest expense for 2022 was RMB16,816 million, in line with RMB16,755 million recorded last year.

Profit Before Income Tax Expense Profit before income tax expense for 2022 was RMB213,277 million, representing an increase of 34.8% as compared with RMB158,203 million for last year.

Income Tax Expense The income tax expense for 2022 was RMB49,295 million, representing an increase of 13.3% as compared with RMB43,507 million for last year, which was primarily due to the increase in our profit before income tax expense.

Profit for the Year Net profit for 2022 was RMB163,982 million, representing an increase of 43.0% as compared with RMB114,696 million for last year.

Profit Attributable to Non-controlling Interests Profit attributable to non-controlling interests for 2022 was RMB14,602 million, representing a decrease of 35.2% as compared with RMB22,526 million for last year, which was primarily due to the one-time gain from the pipeline assets transaction of Kunlun Energy, which was recorded in 2021.

Profit Attributable to Owners of the Company Profit attributable to owners of the company for 2022 was RMB149,380 million, representing an increase of 62.1% as compared with RMB92,170 million for last year.

Segment Results

Oil, Gas and New Energy

Revenue The realized revenue of our oil, gas and new energy segment for 2022 was RMB929,279 million, representing an increase of 35.0% as compared with RMB688,334 for last year, which was primarily due to the increase in the prices of our oil, gas and other products.

The average realized crude oil price of our company in 2022 was US\$92.12 per barrel, representing an increase of 40.5% as compared with US\$65.58 per barrel in last year.

Operating Expenses Operating expenses of the oil, gas and new energy segment for 2022 were RMB763,531 million, representing an increase of 23.2% as compared with RMB619,882 million for last year, which was primarily due to the increase in procurement expenses and taxes expenses.

In 2022, the unit oil and gas lifting cost of our company was US\$12.42 per barrel, which was in line with US\$12.30 per barrel in last year.

Profit from Operations In 2022, by seizing the favourable opportunity in the rise of international oil prices, our domestic business of the oil, gas and new energy segment enhanced profitable exploration, actively increased oil and gas reserves and output, further implemented quality and profitability enhancement, strengthened benchmarking analysis and strictly controlled the investment and cost in the domestic business. Our overseas business of the oil, gas and new energy segment focused on optimizing the asset structure, actively obtained new high-quality projects, effectively promoted the disposal of assets that generated low profitability or were unprofitable and concentrated resources onto the areas where we have competitive advantages to continuously improve the profitability of the overseas business. In 2022, the oil, gas and new energy segment realized an operating profit of RMB165,748 million, representing an increase of by RMB97,296 million as compared with RMB68,452 million for last year.

Refining, Chemicals and New Materials

Revenue The revenue of our refining, chemicals and new materials segment for 2022 was RMB1,164,596 million, representing an increase of 19.4% as compared with RMB974,972 million for last year, primarily due to the increase in the price of the refined and chemical products. The revenue from our refining business for 2022 was RMB906,782 million, representing an increase of 23.2% as compared with RMB736,004 million for last year and the revenue from our chemical business for 2022 was RMB257,814 million, representing an increase of 7.9% as compared with RMB238,968 million for last year.

Operating Expenses Operating expenses of the refining, chemicals and new materials segment for 2022 were RMB1,124,026 million, representing an increase of 21.5% as compared with RMB925,232 million for last year, primarily due to the increase in the procurement costs of crude oil and feedstock.

In 2022, the cash processing cost of our refineries was RMB215.37 per ton, representing an increase of 2.7% as compared with last year, primarily due to the increase in the price of fuel and power.

Profit from Operations In 2022, our refining, chemicals and new materials segment strengthened the stable operation of equipment and the coordination between production activities and sales activities. We adhered to market-oriented principles, continuously optimized the products structure in accordance with the principle of maximizing the profitability of the industry chain and achieved the potential of cost reduction and profitability improvement in the whole process and all elements of production. The refining, chemicals and new materials segment in 2022 realized operating profits of RMB40,570 million, representing a decrease of 18.4% as compared with RMB49,740 million for last year, among which, the refining business recorded an operating profit of RMB41,168 million, representing an increase of 9.1% as compared with RMB37,730 million for last year, primarily due to the increase in profit margin of the refining business; while the chemical business generated an operating loss of RMB598 million, decreased by RMB12,608 million from operating profit of

RMB12,010 million for last year, primarily due to the rise in cost of raw materials as a result of the increase in oil prices.

Marketing

Revenue The revenue of our marketing segment for 2022 was RMB2,771,894 million, representing an increase of 27.7% as compared with RMB2,170,062 million for last year, primarily due to the increase in the price of refined oil and the increase in revenue of our international trading operations.

Operating Expenses Operating expenses of the marketing segment for 2022 were RMB2,757,520 million, representing an increase of 27.9% as compared with RMB2,156,785 million for last year, primarily due to the increase in the expenditures incurred for the external purchase of refined oil and the increase in trading expenses.

Profit from Operations In 2022, the marketing segment, strived to optimize its marketing strategies, create innovative marketing modes, increase sales volumes, market shares and price realisation rates, allocate resources scientifically, arrange the sales flow rationally and endeavoured to control the marketing expenses in the domestic market. In the overseas business, the marketing segment strengthened its market trend analysis, seized market opportunities, vigorously carried out the operation of the global integrated market and actively promoted the widening of income sources and increase in its profitability. In 2022, the marketing segment recorded an operating profit of RMB14,374 million, representing an increase of 8.3% as compared with RMB13,277 million for last year.

Natural Gas Sales

Revenue The revenue of the natural gas sales segment amounted to RMB519,211 million for 2022, representing an increase of 24.5% as compared with RMB417,022 million for last year, primarily due to the increase in price of natural gas.

Operating Expenses Operating expenses of the natural gas sales segment amounted to RMB506,254 million for 2022, representing an increase of 35.7% as compared with RMB373,057 million for last year, primarily due to the increase in the natural gas purchase expenditure as a result of the increase in natural gas prices in the international market.

Profit from Operations In 2022, the natural gas sales segment actively optimized the structure of its resource pool, strived to control procurement costs and strived to satisfy the market demand for clean and low-carbon energy. We highlighted our professional marketing, strengthened our lean management, expanded diversified sales channels and actively developed high-efficiency markets and high-end customers. In 2022, the natural gas sales segment realized an operating profit of RMB12,957 million, representing a decrease of RMB12,688 million as compared with last year after excluding the impact of the Kunlun Energy pipeline assets transaction on the profit from operations for last year. The decrease was primarily due to the increase in the cost of imported natural gas.

In 2022, our international operations ^(a) realized a revenue of RMB1,350,261 million, accounting for 41.7% of our total revenue. Profit before income tax expenses amounted to RMB35,527 million, accounting for 16.7% of our profit before taxes. Our international operations maintained a stable development with continuous improvement in our abilities of international operation.

(a) International operations do not constitute a separate operating segment of the company. The financial data of international operations are included in the financial data of respective operating segments mentioned above.

Liquidity and Capital Resources

Our primary sources of funding include cash generated by operating activities and short-term and long-term borrowings, which are expected to be adequate to meet our requirements for cash in the next 12 months and thereafter under existing agreements and other known obligations. Our primary uses of funds were for operating activities, capital expenditures, repayment of short-term and long-term borrowings and distributions of dividends to shareholders. Our payments to CNPC are limited to dividends and payments for the goods and services provided, and land and real properties leased, to us by CNPC. See “Item 7 — Major Shareholders and Related Party Transactions — Related Party Transactions — Continuing Related Party Transactions” and Note 39 to our consolidated financial statements included elsewhere in this annual report.

For 2022, we have distributed interim dividends of RMB37,076 million to our shareholders. Based on an overall consideration of various factors, including our operating performance, financial status and cash flows, our board of directors recommended the final dividends for 2022 of RMB40,265 million, which would result in the aggregate dividends for 2022 to amount to RMB77,341 million. See “Item 8 — Financial Information — Dividend Policy” for a discussion of factors which may affect the determination by our board of directors of the appropriate level of dividends.

Our financing ability may be limited by our financial condition, our results of operations and the international and domestic capital markets. In general, we need to obtain PRC government approval or to complete the required filings for any project involving significant capital investment for all of our segments. For a more detailed discussion of factors which may affect our ability to satisfy our financing requirements, see “Item 3 — Key Information — Risk Factors — Risks Related to Liquidity”.

We fund the capital and related expenditures described in this annual report principally through cash from operating activities, short-term and long-term borrowings and cash and cash equivalents. Net cash flows from operating activities in the year ended December 31, 2022 was RMB393,768 million. As of December 31, 2022, we had cash and cash equivalents of RMB191,190 million. While each of the projects described in this annual report for which significant capital expenditures will be required is important to our future development, we do not believe that failure to implement any one of these projects would have a material adverse effect on our financial condition or results of operations. If the price of crude oil declines sharply in the future, it is likely that we would delay or reduce the scale of the capital expenditures for each segment.

We currently do not have any outstanding options, warrants or other rights for any person to require us to issue any common stock at a price below its market value. We do not currently intend to issue any such rights or to otherwise issue any common stock for a price below its market value. There are currently no restrictions on the ability of our subsidiaries to transfer funds to our company in the form of cash dividends, loans or advances, which restriction, if imposed, have had or would be expected to have the effect of limiting our ability to meet our cash obligations.

In addition, as of December 31, 2022, we did not have any transactions, arrangements or other relationships with unconsolidated entities or other persons that are reasonably likely to materially affect the liquidity or availability of or requirements for our capital resources.

The table below sets forth our net cash flows for each of the years ended December 31, 2020, 2021 and 2022 and the balance of our cash and cash equivalents at the end of each of the years.

	Year Ended December 31,		
	2020	2021	2022
	(RMB in millions)		
Net cash flows from operating activities	318,575	341,469	393,768
Net cash flows used for investing activities	(181,986)	(213,032)	(232,971)
Net cash flows used for financing activities	(99,400)	(107,971)	(113,713)
Currency translation difference	(4,967)	(2,308)	7,317
Cash and cash equivalents	118,631	136,789	191,190

Our cash and cash equivalents increased by 39.8% from RMB136,789 million as of December 31, 2021 to RMB191,190 million as of December 31, 2022. The cash and cash equivalents were mainly denominated in RMB and US Dollar (approximately 55.1% were denominated in RMB, approximately 43.3% were denominated in US Dollar, approximately 1.0% were denominated in HK Dollar and approximately 0.6% were denominated in other currencies).

Net Cash Flows from Operating Activities

Our net cash flows from operating activities amounted to RMB393,768 million in 2022, representing an increase of 15.3% from RMB341,469 million in 2021. This was mainly due to a combination of an increase in profit for the year and changes in working capital.

Net Cash Flows Used for Investing Activities

Our net cash flows used for investing activities in 2022 amounted to RMB232,971 million, representing an increase of 9.4% from RMB213,032 million in 2021. The increase was primarily due to the effects of proceeds received from the Kunlun Energy pipeline assets transaction in 2021, which also lowered the net cash flows used for investing activities in 2021.

Net Cash Flows Used for Financing Activities

Our net cash used for financing activities in 2022 was RMB113,713 million, representing an increase of 5.3% from RMB107,971 million in 2021. This was primarily due to the optimization of our debt structure, an overall decrease of long-term and short-term borrowings.

Our net borrowings as of December 31, 2020, 2021 and 2022 were as follows:

	As of December 31,		
	2020	2021	2022
	(RMB in millions)		
Short-term borrowings (including current portion of long-term borrowings)	117,542	53,275	100,639
Long-term borrowings	251,379	287,175	222,478
Total borrowings	368,921	340,450	323,117
Less: cash and cash equivalents	118,631	136,789	191,190
Net borrowings	250,290	203,661	131,927

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The following table sets out the remaining contractual maturity of borrowings as of December 31, 2021 and 2022 according to the earliest contractual maturity dates. The amounts set out below are contractual undiscounted cash flows, including principal and interest:

	As of December 31,	
	2021	2022
	(RMB in million)	
Within 1 year	58,923	107,461
Between 1 and 2 years	53,250	129,885
Between 2 and 5 years	226,124	102,490
After 5 years	28,053	16,500
Total	366,350	356,336

Our total borrowings as of December 31, 2022 consisted of approximately 34.9% of fixed-rate loans and approximately 65.1% of floating-rate loans. Of our borrowings as of December 31, 2022, approximately 67.7% were denominated in RMB, approximately 30.2% were denominated in US Dollars and approximately 2.1% were denominated in other currencies.

Our debt to capital ratio (calculated by dividing interest-bearing debts by the aggregate of interest-bearing debts and shareholder's equity; interest-bearing debts including various long and short term borrowings) as of December 31, 2020, 2021 and 2022 was 21.3%, 19.5% and 17.4%.

As of December 31, 2022, the outstanding amount of our debts secured by CNPC and its subsidiaries and other third parties was RMB11,186 million.

Capital Expenditures and Investments

In 2022, our capital expenditures amounted to RMB274,307 million, representing an increase of 9.2% from RMB251,178 million in 2021.

The table below sets forth our capital expenditures and investments by business segment for each of the years ended December 31, 2020, 2021 and 2022, and the estimated amounts for 2023.

	2020		2021		2022		2023 (estimated)	
	(RMB in millions)	%	(RMB in millions)	%	(RMB in millions)	%	(RMB in millions)	%
Oil, gas and new energy	186,620	75.71	178,259	70.97	221,592	80.78	195,500	80.29
Refining, chemicals and new materials	21,810	8.85	54,487	21.69	41,771	15.23	34,000	13.96
Marketing	16,294	6.61	10,982	4.37	5,069	1.85	7,000	2.88
Natural gas sales	21,143	8.58	6,750	2.69	4,936	1.80	6,000	2.46
Headquarters and others	626	0.25	700	0.28	939	0.34	1,000	0.41
Total	246,493	100.00	251,178	100.00	274,307	100.00	243,500	100.00

As of December 31, 2022, the capital commitments contracted but not paid by us were approximately RMB882 million, mainly related to property, plant and equipment.

Oil, Gas and New Energy

A majority of our capital expenditures and investments relate to our oil, gas and new energy segment. For the years ended December 31, 2020, 2021 and 2022, the capital expenditures in relation to the oil, gas and new

energy segment amounted to RMB186,620 million, RMB178,259 million and RMB221,592 million, respectively. In 2022, our capital expenditures were primarily used for exploration and development, achieving economies of scale and profitability in key domestic basins such as Tarim, Sichuan, Ordos, Junggar, Songliao and Bohai Bay, devoting greater efforts in the exploration of unconventional resources such as shale gas and shale oil, promoting new energy projects including clean electricity and CCUS; and actively responded to changes in the overseas environment, focused on key areas to deepen effective exploration, strengthened production capacity construction of key projects such as the Middle East, Central Asia and the Americas and continuously optimized business strategy and asset structure.

We estimate that our capital expenditures for the oil, gas and new energy segment for 2023 will be RMB195,500 million, which is expected to be primarily used for our continuous exploration and development achieving economies of scale and profitability in key domestic basins such as Songliao, Ordos, Junggar, Tarim, Sichuan and Bohai Bay. The Company expects to devote greater efforts in the exploration of unconventional resources such as shale gas and shale oil, promote new energy projects including clean electricity and CCUS, adhere to the principle of centralized and profitable development in overseas operations, strengthen the procurement of high-quality projects, continuously optimize asset structure, business structure and regional strategy while continuing operating existing projects in cooperation areas such as the Middle East, Central Asia, the Americas and the Asia Pacific region.

Refining, Chemicals and New Materials

Our capital expenditures for our refining, chemicals and new materials segment for the years ended December 31, 2020, 2021 and 2022 were RMB21,810 million, RMB54,487 million and RMB41,771 million, respectively. In 2022, our capital expenditures were primarily used for the Guangdong Petrochemical integrated refining and chemical project, transformation and upgrading projects such as Jilin Petrochemical ABS project and research projects for new materials and new technologies.

It is estimated that the capital expenditures for the refining, chemicals and new materials segment for 2023 will be RMB34,000 million, which is expected to be used primarily for the construction of large-scale refining and chemical projects such as Jilin Petrochemical and Guangxi Petrochemical Ethylene projects, completion of the Guangdong Petrochemical integration project for refining and chemicals as well as transformation and upgrading projects related to reduction of refining capacity and increasing of chemicals production capacity and new materials and new technologies.

Marketing

Our capital expenditures for our marketing segment for the years ended December 31, 2020, 2021 and 2022 were RMB16,294 million, RMB10,982 million and RMB5,069 million, respectively. In 2022, our capital expenditures were primarily used for the construction of our domestic terminal network for the sales of oil and gas, the expansion of new energy projects such as hydrogen refueling stations and the construction of overseas oil and gas storage, transportation and sales facilities.

It is estimated that the capital expenditures for the marketing segment for 2023 will be RMB7,000 million, which is expected to be used primarily for the construction of domestic comprehensive energy stations for “oil, gas, hydrogen, power and non-oil” and the optimization of our terminal network layout and the construction of overseas oil and gas storage, transportation and sales facilities.

Natural Gas Sales

Our capital expenditures for the natural gas sales segment for the years ended December 31, 2020, 2021 and 2022 were RMB21,143 million, RMB6,750 million and RMB4,936 million, respectively. Our capital expenditures for the natural gas sales segment in 2022 were mainly used for construction of natural gas branch lines and market development of urban gas end-use markets.

We estimate that our capital expenditures for the natural gas and pipeline segment for 2023 will be RMB6,000 million, which is expected to be used primarily for the construction of Fujian LNG receiving stations, natural gas branch lines and market development projects for urban gas end-market.

Headquarters and Others

Our non-segment capital expenditures for each of the years ended December 31, 2020, 2021 and 2022 were RMB626 million, RMB700 million and RMB939 million, respectively, which were primarily used for the improvement of scientific research facilities and construction of our IT system.

We estimate that our capital expenditures for the head office and other segments for 2023 will be RMB1,000 million, which is expected to be used primarily for the enhancement of research facilities and construction of our IT systems.

Off-Balance Sheet Arrangements

As of December 31, 2022, we had no off-balance sheet arrangements with unconsolidated entities or persons that had or were reasonably likely to have a material current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, working capital, cash requirements or sources of funds.

Long-Term Contractual Obligations and Other Commercial Commitments and Payment Obligations

All information that is not historical in nature disclosed under “Item 5 — Operating and Financial Review and Prospects — Long-Term Contractual Obligations and Other Commercial Commitments and Payment Obligations” is deemed to be a forward-looking statement. See “Forward-Looking Statements” for additional information.

The tables below set forth our long-term contractual obligations as of December 31, 2022.

Contractual Obligations	Payment Due by Period				
	Total	Less Than 1 Year	1-3 Years	3-5 Years	After 5 Years
	(RMB in millions)				
Long-term debt	284,742	62,264	187,660	19,332	15,486
Lease obligations	204,514	13,244	22,156	20,140	148,974
Capital commitments	882	831	51	—	—
Debt-related interest	18,604	8,616	7,554	1,420	1,014
Total	508,742	84,955	217,421	40,892	165,474

In the next five years, we estimate that we are obligated to pay to the MNR RMB500 million each year with respect to our exploration and production licenses.

Assets Retirement Obligation

Most of the provinces and regions in which our oil and gas exploration and production activities are located have promulgated environmental protection regulations, which set forth specific abandonment and disposal processes for oil and gas exploration and production activities. We have established standard abandonment procedures, including plugging all retired wells, dismantling all retired metering stations and other related facilities and performing site restoration, in response to the issuance of these provincial and regional regulations. As of December 31, 2022, the balance of assets retirement obligation was RMB142,081 million.

Research and Development

We have three research institutions under the supervision of our research and development management department at our headquarters. Except for those branch companies which are engaged in marketing activities, each of our other branch companies has its own research and development management department. Most of our branch companies have their own research institutions. Our research and development management departments are mainly responsible for managing and coordinating the research and development activities conducted by each of the research institutions. As of December 31, 2022, we had 30,729 employees in our research and development departments and institutions.

In each of the years ended December 31, 2020, 2021 and 2022, our total expenditures for research and development (including capitalized expenditures) were approximately RMB22,921 million, RMB23,731 million and RMB28,718 million, respectively. In 2022, our total expenditures for research and development accounted for 0.9% of our operating revenue, and 30.3% of our expenditures for research and development for 2022 was capitalized.

Exploration and Production

Most of China's major oil and gas fields are characterized by a broad range of geological conditions, and a majority of China's oil and gas fields are in continental sedimentary basins with complex structures. Our research and development efforts with respect to our exploration and production business focus on:

- theories and technologies of crude oil and natural gas exploration;
- oil and gas development theories and technologies;
- engineering technologies and equipment; and
- technologies for security, energy conservation and environmental protection.

Refining and Chemicals

Currently, our research and development efforts in the refining and chemicals segment are focusing on the following areas:

- new catalyst and catalytic materials;
- technologies for clean refined oil products;
- technologies for unqualified heavy oil processing;
- refining-chemical integration technologies;
- technologies for production of olefin aromatics;
- technologies for new products of synthetic resin and synthetic rubber; and
- technologies for safety, energy saving and environmental protection.

New Energy and New Materials

We expect to increase our efforts into the research and development of new energy and new materials technologies. In 2021, we established the Shenzhen New Energy Research Institute and the Shanghai New Materials Research Institute. In 2022, we established a research institution in Japan. We will continue to increase investment into the technology research and development to provide technical support for the development of new energy, new materials and new business.

Trend Information

In 2023, the world economy is expected to continue to maintain slow growth, and there will still be many unstable and uncertain factors. The volatility of international crude oil prices may increase. As the effect of stable growth of the macro-economy continues to emerge, China's economic growth is expected to rebound on the whole, the demand for refined oil in the domestic market is expected to recover and the competition will continue to be fierce. Facing various opportunities and challenges, we will adhere to our new development concept, actively integrate into the new development pattern, implement the high-quality development requirements, vigorously implement the five development strategies of innovation, resources, market, internationalization, green and low-carbon, focus on developing our main business, strengthen enterprise management, reform and innovation, improve quality and profitability, green transformation, digital transformation and risk prevention, and strive to create value for shareholders.

With respect to our oil, gas and new energy business, our domestic oil and gas business will continue to promote efficient exploration, strengthen risk exploration and pre-exploration in six major areas, including marine carbonate rocks, lithologic strata, volcanic rocks, thrust structural zones, new areas and new fields for shale oil and gas. We will organize the centralized exploration in oil and natural gas areas with scale reserves and strive to increase oil and natural gas reserves. We expect to precisely develop oil and gas, control the gradual decline of old oil field production and improve the collection rate of old oil fields. We will focus on the construction of new areas and strive to improve oil and gas production. Our international oil and gas business will maintain efficient exploration, expand the discovery scale of new fields, attach great importance to the fine exploration of mature exploration areas and maintain a good momentum of reserves discovery. We will strengthen fine development and accelerate the construction of key production capacity and engineering projects. We will increase the procurement of high-quality projects, promote the disposal of low profitability and unprofitable assets, continue to optimize the structure of overseas oil and gas assets, business structure and regional strategy. Our new energy business will fully implement the carbon emission peak action plan, continue to optimize the development plans of offshore wind power, CCS/CCUS, gas power, etc., and accelerate the construction of new energy bases, fully participate in the construction of the "desert, Gobi, wasteland" large base and the far-reaching offshore wind power large base projects and strengthen the deployment and implementation of clean power, geothermal, hydrogen energy and other projects. In 2023, we plan to reach a crude oil output of 912.9 million barrels and a marketable natural gas output of 4,888.9 Bcf, thus achieving a total oil and natural gas output of 1,727.7 million BOE.

With respect to our refining, chemicals and new materials business, we will promote the optimal allocation of regional resources, leverage the advantages of characteristic crude oil resources and refinery facilities, optimize production routes and product plans and increase the production of low-sulphur marine fuel oil, paraffin, lubricating oil, asphalt and other characteristic products. We will optimize the supply of ethylene raw materials, maintain the high load operation of ethylene and aromatics units and strive to increase the production of high value-added chemical products. We will adhere to the development idea of "base + high-end" and promote the construction of ethylene projects of Jilin Petrochemical and Guangxi Petrochemical. We will vigorously develop new materials business and accelerate the research and development of new products at Liaoyang Petrochemical and Daqing Petrochemical. We will actively expand the sales channels of chemical products, leverage the functions of the "PetroChina e-Chemical" platform, further promote the "product manager + customer manager" professional marketing model and further improve the sales and profitability of chemical products. In 2023, we plan to process crude oil of 1,293.1 million barrels.

With respect to our marketing business, we plan to actively ensure smooth sales channels for our upstream production; we will fully increase marketing, continue to strengthen market research, build an integrated wholesale and retail marketing system, enhance the development of group customers, small and medium-sized enterprises, and other end customers, develop differentiated marketing strategies for different regions, different industries, different periods of time and different oil products, accurately control the sales trends and steadily increase market share and sales profitability. We expect to further optimize the whole marketing process,

improve the on-site service of gas stations, continuously improve customer experience, enhance brand reputation and influence, and increase the sales of gasoline. We will adjust and optimize the investment direction and optimize the construction of terminal networks such as gas stations, comprehensive energy service stations, charging and swapping stations and photovoltaic stations. We will continue to vigorously develop the non-oil sales business, improve store marketing ability, accelerate the construction of our e-commerce platform and strive to increase revenue and create efficiency. We will improve the international trade system, strive to expand the scale of trade, build the trading resource pool, enhance the flexibility and stability of operation and promote the cost reduction and increase the profitability of the oil and gas industry chain.

With respect to our natural gas sales business, we will make full use of both domestic and foreign resources, strengthen demand-side dynamic analysis and management, scientifically and reasonably sign purchase and sales contracts, strictly implement sales plans and profitably ensure market supply. We will adhere to the principle of prioritizing incremental resources for high-profitability markets and high-end users, strengthen strategic cooperation with relevant enterprises, accelerate the development of urban gas market and strive to increase the sales proportion of terminal markets. We expect to refine and differentiate the marketing strategy, strictly implement the national price policy, continuously expand the online trading volume, promote the spot purchasing mode and continuously improve the marketing quality and profitability. We will promote the construction of natural gas sales branch lines and LNG terminals in an orderly manner and constantly enhance the market supply and service capacity.

Other than as disclosed above and elsewhere in this annual report, we are not aware of any trends, uncertainties, demands, commitments or events for the periods covered in this annual report that are reasonably likely to have a material effect on our net sales revenue or income, continuous operating revenue, profitability, liquidity or capital resources, or that would cause the disclosed financial information to be misleading.

Other Information

Inflation

In 2022, RMB in which our financial statements are presented did not experience hyperinflation. Inflation did not have a significant impact on our results of operations for the year ended December 31, 2022.

Related Party Transactions

For a discussion of related party transactions, see “Item 7 — Major Shareholders and Related Party Transactions — Related Party Transactions” and Note 39 to our consolidated financial statements included elsewhere in this annual report.

Recent Developments in IFRS

For a detailed discussion of recent developments in IFRS, see Note 2 to our consolidated financial statements.

Item 6 — *DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES*

Directors, Senior Management and Supervisors

As of the date of this report, our board of directors consists of 11 directors, four of whom are independent non-executive directors, or INEDs. Directors are appointed at our general meetings for a three-year term. The directors may

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be re-appointed upon the expiration of his/her term of office. The functions and duties conferred on the board of directors include:

- convening shareholders' meetings and reporting its work to the shareholders' meeting;
- implementing the resolutions of the shareholders' meeting;
- determining our business plans and investment programs;
- formulating our annual budget and final accounts;
- formulating our profit distribution and loss recovery proposals;
- formulating proposals for the increase or reduction of our registered capital and the issuance of our debentures or other securities and listings;
- proposing to redeem shares, merge, spin-off, dissolve or otherwise change the form of the Company;
- deciding on our internal management structure;
- appointing or dismissing the president of the Company, and upon the nomination of the president, appointing or dismissing vice president, senior vice president, chief financial officer, or CFO, and other senior management, and determining matters relating to their remuneration;
- formulating our basic management system;
- preparing amendments to our Articles of Association;
- managing the information disclosures of our company; and
- exercising any other powers and duties conferred by the shareholders at general meetings.

Seven of our directors are affiliated with CNPC or its subsidiaries other than us.

The PRC Company Law requires a joint stock company with limited liability to establish a supervisory committee. This requirement is reflected in our Articles of Association. The supervisory committee is responsible for monitoring our financial matters and overseeing the corporate actions of our board of directors and our senior management personnel. As of the date of this report, the supervisory committee consists of eight supervisors, four of whom were elected, and may be removed, by the shareholders at a general meeting, and four of whom are employees representatives supervisors who were elected by our staff, and may be removed, by our staff. The term of office of our supervisors is three years. The supervisors may be re-elected and re-appointed. A supervisor cannot concurrently hold the position of a director, president, senior vice president, vice president or CFO in our company.

The supervisory committee shall be responsible to the shareholders' meeting and shall exercise the following functions and powers in accordance with law:

- to review the periodic reports prepared by the board of directors and issue written opinions in connection with such review;
- to review our financial condition;
- to oversee the performance of duties by the directors, the president, senior vice presidents, vice presidents, the CFO and other senior officers of the Company and to propose the removal of any of the foregoing persons who acts in contravention of any law, regulation, the Company's Articles of Association or any resolutions of the shareholders' meeting;
- to demand any director, the president, senior vice president, vice president, the CFO or any other senior officer who acts in a manner which is harmful to the Company's interest to rectify such behavior;
- to check the financial information such as the financial report, business report and plans for distribution of profits to be submitted by the board of directors at the shareholders' meetings and to authorize, in

the Company's name, publicly certified and practicing auditors to assist in the re-examination of such information should any doubt arise in respect thereof;

- to propose the convening of an extraordinary shareholders' meeting, and convene and preside over a shareholders' meeting when the board fails to perform its duties to do so as set forth in the PRC Company Law;
- to submit proposals at the shareholders' meetings;
- to confer with any director, or initiate legal proceedings on behalf of the Company against any director, the president, senior vice president, vice president, the CFO or any other senior officer in accordance with Article 152 of the PRC Company Law;
- to initiate investigations upon being aware of any extraordinary development in the operational conditions of the Company;
- together with the audit committee of the board of directors, to review the performance of the external auditors on a yearly basis, and to propose the engagement, renewal of engagement and termination of engagement of the external auditors, as well as the service fees with respect to the audit services;
- to oversee the compliance of related party transactions; and
- other functions and powers as set forth in the Articles of Association of the Company.

Supervisors shall attend meetings of the board of directors as observers.

In the event that any action of our directors adversely affects our interests, supervisors shall confer with or initiate legal proceedings against such directors on our behalf. A resolution proposed at any meeting of the supervisory committee shall be adopted only if it is approved by two-thirds or more of our supervisors.

Our senior management is appointed by and serves at the supervision of our board of directors. The board of directors will review, evaluate and supervise the performance of the management and reward or punish the members of the management in accordance with relevant rules and regulations.

Directors

Information on our current directors is as set out below:

Name	Gender	Age	Position	Term	Remuneration before tax received from the Company in 2022 (RMB'000)	Whether received remuneration from offices held in CNPC	Number of Shares held in the Company	
							As at December 31, 2021	As at December 31, 2022
Dai Houliang	M	59	Chairman	2020.03-2023.06	—	Yes	0	0
Hou Qijun	M	56	Vice Chairman	2021.10-2023.06	—	Yes	0	0
Duan Liangwei	M	55	Non-executive Director	2017.06-2023.06	—	Yes	0	0
Jiao Fangzheng	M	60	Executive Director, Chief Geologist	2019.06-2023.06	761	No	0	0
Huang Yongzhang	M	56	Executive Director, President	2020.09-2023.06	1,114	No	0	0
Ren Lixin	M	55	Executive Director, Senior Vice President	2021.10-2023.06	1,226	No	0	0
Xie Jun	M	55	Non-executive Director	2022.06-2023.06	—	Yes	0	0
Elsie Leung Oi-sie	F	84	INED	2017.06-2023.06	529	No	0	0
Tokuchi Tatsuhito	M	70	INED	2017.06-2023.06	539	No	0	0
Cai Jinyong	M	63	INED	2020.06-2023.06	593	No	0	0
Jiang, Simon X.	M	69	INED	2020.06-2023.06	603	No	0	0

Note:

- Starting from May 2022, Mr. Jiao Fangzheng has received remuneration from our company.
- The above remunerations are pre-tax amounts counted on a calendar year basis, including salaries, basic retirement pension, basic medical insurance, housing provident fund and other benefits.
- The above remunerations for 2022 do not include the bonus of RMB1.1 million paid to certain directors by our company in accordance with the relevant requirements of the Chinese government for their service during the term from 2019 to 2021.
- Other than our INEDs, our directors do not receive directors' remuneration in their capacity as our director from our company. The level of our INEDs' remuneration is determined with reference to the overall market conditions.

Biography of Current Directors

Dai Houliang, age 59, is the chairman of our company, and concurrently the chairman of CNPC and the secretary of the CPC Leadership Team of CNPC. Mr. Dai is a professor-level senior engineer and holds a doctorate degree. He is a member of the 14th CPPCC National Committee, and a member of the Committee on Population, Resources and Environment under the 14th CPPCC National Committee. He is an academician of the Chinese Academy of Engineering. From December 1997, Mr. Dai served successively as deputy general manager of Yangzi Petrochemical Corporation, director, deputy general manager, vice chairman, general manager, chairman, and member of the standing committee of the CPC Committee, of Yangzi Petrochemical Co., Ltd., and deputy CFO, director, vice president, senior vice president, CFO, vice chairman, president and chairman of Sinopec. From June 2008, he served as member of the CPC Leadership Team of Sinopec Group. From May 2016, he served as general manager, director, and deputy secretary of the CPC Leadership Team, of Sinopec Group. From July 2018, he served as chairman, and secretary of the CPC Leadership Team of Sinopec Group. In January 2020, Mr. Dai was appointed as the chairman, and the secretary of the CPC Leadership Team, of CNPC. In March 2020, Mr. Dai was appointed as a director and the chairman of our company.

Hou Qijun, age 56, is the vice chairman of our company, and concurrently a director, the general manager of CNPC, and the deputy secretary of the CPC Leadership Team of CNPC. Mr. Hou is a professor-level senior engineer and holds a doctorate degree. From October 2002, Mr. Hou served successively as director and deputy general manager of Daqing Oilfield, general manager and deputy secretary of the CPC Committee of Jilin Oilfield Company, secretary of the CPC Committee and deputy general manager of PetroChina Natural Gas and Pipeline Company, director general, and deputy secretary of the CPC Committee, of Beijing Oil & Gas Control Center, and general manager of the Planning Department of our company and of CNPC. From March 2017, Mr. Hou served as deputy general manager of CNPC, and from April 2017, concurrently as deputy secretary of the CPC Committee and general manager of PetroChina Exploration and Production Company. Mr. Hou was appointed as a director and vice president of our company in June 2017. He served as president of our company from March 2019. Mr. Hou served as director, general manager, and deputy secretary of the CPC Leadership Team, of PetroChina from October 2021. He was appointed as a director, the general manager, and deputy secretary of the Leadership Team, of CNPC in July 2021. In October 2021, he was appointed as a director and the vice chairman of our company.

Duan Liangwei, age 55, is a director of our company, and a director of CNPC, the deputy secretary of the CPC Leadership Team of CNPC and the secretary of the CNPC CPC Affairs Committee. Mr. Duan is a professor-level senior engineer and holds a doctorate degree. From February 2006, Mr. Duan served successively as deputy general manager, chief safety officer, and member of the CPC Committee, of Jilin Petrochemical Company ("Jilin Petrochemical"), general manager, deputy secretary of the CPC Committee, of Dagang Petrochemical Company, and general manager, and deputy secretary of the CPC Committee, of PetroChina Dalian Petrochemical Company. He served as deputy general manager of CNPC from March 2017 and then as the chief safety officer of CNPC from April 2017. Mr. Duan was appointed as a director of our company in June 2017, and a member of the CPC Leadership Team of CNPC in September 2019. Mr. Duan served as the president of our company from March 2020. In September 2020, Mr. Duan was appointed as a director, and the deputy secretary of the CPC Leadership Team, of CNPC. In October 2020, Mr. Duan was appointed as the secretary of the CNPC CPC Affairs Committee.

Jiao Fangzheng, age 60, is a director and the chief geologist of our company. Mr. Jiao is a professor-level senior engineer and holds a doctorate degree. From January 1999, Mr. Jiao served successively as chief geologist of Zhongyuan Petroleum Exploration Administration of Sinopec Group, deputy manager and chief geologist of Sinopec Zhongyuan Oilfield Company, a branch of Sinopec, deputy director general, and member of the CPC Committee, of Sinopec Petroleum Exploration & Development Research Institute, deputy director general of Sinopec Exploration & Production Department, director general, and deputy secretary of the CPC Committee, of Northwest Petroleum Administration of Sinopec Group, director general of Sinopec Petroleum Exploration &

Production Department, and vice president, director and senior vice president of Sinopec. From July 2014, Mr. Jiao served as deputy general manager, and member of the CPC Leadership Team, of Sinopec Group. Mr. Jiao was appointed as a member of the CPC Leadership Team and a deputy general manager of CNPC in June 2018. In June 2019, Mr. Jiao was appointed as a director of our company, and in April 2022, the chief geologist of our company.

Huang Yongzhang, age 56, is a director and the president of our company, and concurrently a member of the CPC Leadership Team, and deputy general manager and chief safety officer, of CNPC. Mr. Huang is a professor-level senior engineer and holds a doctorate degree. From June 2008, Mr. Huang served successively as a deputy general manager of CNPC International (Nile) Ltd., deputy general manager and chief safety officer of China National Oil Exploration and Development Corporation, executive deputy general manager and general manager of CNPC Middle East Corporation, and senior deputy general manager and member of the CPC Committee, of CNODC. Mr. Huang was appointed as a member of the CPC Leadership Team and deputy general manager of CNPC in April 2020, and a director of our company in September 2020. Mr. Huang has served concurrently as the chief safety officer of CNPC from February 2021. He was appointed as the president of our company in March 2021.

Ren Lixin, age 55, is a director and the senior vice president of our company, and concurrently a member of the CPC Leadership Team, and the deputy general manager, of CNPC. Mr. Ren is a professor-level senior engineer and holds a bachelor's degree. From September 2005, Mr. Ren served successively as member of the CPC Committee, deputy general manager, general manager, deputy secretary of CPC Committee, and chief safety director of PetroChina Dushanzi Petrochemical Company, and general manager, and deputy secretary of the CPC Committee, of PetroChina Refining and Chemical Company. He was appointed as a member of the CPC Committee and a deputy general manager of CNPC in June 2021. In August 2021, Mr. Ren was appointed as the senior vice president of our company, and in October 2021, as a director of our company.

Xie Jun, age 55, is a director of our company, and concurrently a member of the CPC Committee, a deputy general manager of CNPC and the director general of CNPC Consulting Center. Mr. Xie is a professor level senior engineer and holds a bachelor's degree. From August 2013, Mr. Xie served successively as member of the CPC Committee, deputy general manager, executive deputy general manager, secretary of the CPC Committee, and general manager of PetroChina Southwest Oil and Gasfield Company, general manager of the Development and Planning Department of CNPC and the Development and Planning Department our company. He has served as member of the CPC Committee and deputy general manager of CNPC since January 2022, and as director general of CNPC Consulting Center since March 2022. Mr. Xie was appointed as a director of our company in June 2022.

Elsie Leung Oi-sie, age 84, is an INED of our company. She is a consultant of Lu, Lai & Li Solicitors & Notaries, and an INED of China Resources Power Holdings Co., Ltd. Ms. Leung obtained her LLM degree from the University of Hong Kong and is an academician of College of International Marriage Law. She holds the practicing qualifications for attorney of Hong Kong and Britain. Ms. Leung was the first Secretary for Justice of the Hong Kong SAR, and a member of the Executive Council of Hong Kong SAR. Ms. Leung was appointed as the Justice of the Peace, the Notary Public, and the China-Appointed Attesting Officer, and was awarded a Grand Bauhinia Medal. Ms. Leung was appointed as an INED of our company in June 2017.

Tokuchi Tatsuhito, age 70, is an INED of our company, and concurrently an INED of Daiwa Securities (China) Co., Ltd. He is also the executive director & research fellow of the Center for Industrial Development and Environment Governance, Tsinghua University, and the senior fellow of Rebuild Japan Initiative Foundation. Mr. Tokuchi graduated from the Department of Chinese Language and Literature, Peking University, and received his master's degree in East Asian Economy from the Center for East Asian Studies of Stanford University. He was a former member & expert advisor to the Foreign Advisory Committee of State Administration of Foreign Experts Affairs of the PRC, and previously held various positions in multiple companies such as the general manager of Investment

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Banking Division of Daiwa Securities SMBC Co., Ltd., the president of Daiwa Securities Singapore Limited, the Executive Vice President of Daiwa Securities (Hong Kong) Inc., a vice president of Daiwa Securities (America) Inc., the vice chairman of Singapore Investment Banking Association, a deputy general manager, the managing director, and Investment Banking Committee chairman, of CITIC Securities Co., Ltd., and the chairman of CITIC Securities International Co., Ltd. In 2009, Mr. Tokuchi was awarded the China Friendship Award, China's award for foreigners. Mr. Tokuchi was appointed as an INED of our company in June 2017.

Cai Jinyong, age 63, is an INED of our company. Mr. Cai is a partner of Global Infrastructure Partners and a board member of Aon Corporation. Mr. Cai received bachelor's degree in science from Peking University and doctorate degree in economics from Boston University. Mr. Cai has over 30 years' work experience in finance service industry, including at TPG Group, World Bank Group, Goldman Sachs Group, Inc. ("Goldman") and Morgan Stanley. Mr. Cai worked at Central Europe Bureau of the Head Office of the World Bank in charge of energy sectors from 1990 to 1994. From 1994 to 2000, he served in Morgan Stanley and was also a member of the team which established China International Capital Corporation Limited (the first domestic joint venture investment bank in the PRC). From 2000 to 2012, he worked in Goldman, where he was in charge of the PRC Investment Banking Business. From 2012 to 2016, he served as CEO of International Finance Corporation of the World Bank Group. From 2016 to 2018, he led the infrastructure business in emerging economies at TPG. In June 2020, Mr. Cai was appointed as an INED of our company.

Jiang, Simon X., age 69, is an INED of our company. Mr. Jiang has been an INED of COSCO Shipping International (Hong Kong) Co., Ltd. since April 2007. He is the chairman of Cyber City International Limited. Mr. Jiang is also a director of China Foundation for Disabled Persons, a senior associate at the Judge Business School of Cambridge University of England, and a member of the United Nations Investments Committee. Mr. Jiang received his bachelor's degree from Beijing Foreign Studies University, master's degree from Australian National University and Ph.D. degree in Economics from Cambridge University of England. Mr. Jiang has investment management experience. Mr. Jiang previously worked at the United Nations Joint Staff Pension Fund, first as a deputy chief of the Office of Investment Management, and then as a member of the Investment Committee. He was a member of the 11th and 12th National Committee of the CPPCC, an independent director of China Oilfield Services Limited, Greenland Hong Kong Holdings Limited, Sinopec Corp., and Nokia Corporation. In June 2020, Mr. Jiang was appointed as an INED of our company.

Information on our resigned directors is as set out below:

Name	Gender	Age	Position	Term	Remuneration before tax received from the Company in 2022 (RMB'000)	Whether received remuneration from offices held in CNPC	Number of Shares held in the Company	
							As at December 31, 2021	As at December 31, 2022
Liu Yuezhen	M	61	Non-executive Director	2014.05-2022.04	—	Yes	0	0
Simon Henry	M	61	INED	2017.06-2022.06	510	No	0	0

Supervisors

Information on our current supervisors is as set out below:

Name	Gender	Age	Position	Term	Remuneration before tax received from the Company in 2022 (RMB'000)	Whether received remuneration from offices held in CNPC	Number of Shares held in the Company	
							As at December 31, 2021	As at December 31, 2022
Cai Anhui	M	53	Chairman of the Supervisory Committee	2022.06-2023.06	—	Yes	0	0
Xie Haibing	M	52	Supervisor	2022.06-2023.06	—	Yes	0	0
Zhao Ying	F	55	Supervisor	2022.06-2023.06	—	Yes	0	0
Cai Yong	M	48	Supervisor	2022.06-2023.06	—	Yes	0	0
Lan Jianbin	M	56	Employee Representative Supervisor	2022.05-2023.06	731	No	0	0
He Jiangchuan	M	57	Employee Representative Supervisor	2022.05-2023.06	930	No	0	0
Jin Yanjiang	M	56	Employee Representative Supervisor	2022.05-2023.06	747	No	0	0
Fu Bin	M	58	Employee Representative Supervisor	2022.09-2023.06	506	No	0	0

Note:

1. Mr. Lan Jianbin, Mr. He Jiangchuan and Mr. Jin Yanjiang were each elected as an employee representative supervisor of the company on May 19, 2022, and Mr. Fu Bin was elected as an employee representative supervisor of the company on September 29, 2022. The remuneration received in 2022 in the above table is the remuneration received from the company as an employee of the company after being elected as employee representative supervisor of the company.
2. The above remunerations are pre-tax amounts paid on a calendar year basis, including salaries, allowance, basic retirement pension, basic medical insurance, housing provident fund and other benefits.

Biography of Current Supervisors

Cai Anhui, age 53, is the chairman of the supervisory committee of our company, and concurrently a member of the CPC committee and the chief accountant of CNPC. Mr. Cai is a professor-level senior accountant and a professor-level senior engineer, and holds a doctorate degree. From April 2004, he served successively as CFO of China Aluminum International Engineering Co., Ltd., deputy general manager of China Aluminum International Technology Development Co., Ltd., secretary of the CPC committee and deputy general manager of Guiyang Aluminum & Magnesium Design Institute Co., Ltd., executive director and general manager of Chinalco Finance Company Limited, secretary of the CPC Committee, chairman and general manager of Chinalco Capital Holdings Co., Ltd., and assistant to general manager of Aluminum Corporation of China. Mr. Cai was appointed as a member of the CPC committee and the chief accountant of China Energy Investment Corporation in December 2019. He has served as member of the CPC committee and chief accountant of CNPC since March 2022. Mr. Cai was appointed as the chairman of the supervisory committee of our company in June 2022.

Xie Haibing, age 52, is a supervisor of our company, and concurrently the assistant to general manager of CNPC, the chairman of CNPC Capital Company Limited ("CNPC Capital") and the chairman of CNPC Kunlun Capital Company Limited ("Kunlun Capital"). Mr. Xie is a professor-level senior economist and holds a doctorate degree. He is a member of the 14th CPPCC Beijing Municipal Committee. From April 2009, Mr. Xie served successively as chief information officer of Karamay City Commercial Bank, chief information officer and vice president of Kunlun Bank, deputy general manager of the Finance Department of CNPC and deputy general manager of the Finance Department of our company, deputy head of the preparatory team of the Shared Service Center of CNPC, general manager of CNPC Shared Operation Co. Ltd., and general manager of the Finance Department of CNPC and the Finance Department of our company. He has served as assistant to general manager of CNPC, and chairman of CNPC Capital and chairman of Kunlun Capital since April 2021. He was appointed as a supervisor of our company in June 2022.

Zhao Ying, age 55, is a supervisor of our company, and concurrently the general counsel and chief compliance officer of CNPC. Ms. Zhao is a professor-level senior economist and holds a bachelor's degree. From April 2009, she successively served as general counsel of China Oil Exploration and Development Corporation, general counsel of PetroChina Overseas Exploration and Development Branch and PetroChina Natural Gas Exploration and Development Corporation, deputy general manager of PetroChina Kazakhstan Company, deputy general manager of PetroChina Middle Asia Company, deputy general manager and deputy secretary of the CPC Committee of China National Oil and Gas Exploration and Development Corporation ("CNODC"), general manager of the Legal Affairs Department and the Legal and Enterprise Reform Department of CNPC and general manager of the Legal Affairs Department and the Legal and Enterprise Reform Department of our company. Ms. Zhao was appointed as the general counsel of CNPC in March 2022. Ms. Zhao was appointed as a supervisor of our company in June 2022, and then as the chief compliance officer of CNPC in December 2022.

Cai Yong, age 48, is a supervisor of our company, and concurrently the general manager of the Finance Department of CNPC. Mr. Cai is a senior economist and holds a master's degree. From March 2016, he served successively as chief accountant of PetroChina Middle East Company, and general manager of the Finance, Tax and Price Department and general manager of the Funding Department of CNPC and our company. He has served as the general manager of the Finance Department of CNPC since April 2021. Mr. Cai was appointed as a supervisor of our company in June 2022.

Lan Jianbin, age 56, is an employee representative supervisor of our company, and concurrently the executive director of the CNPC Safety and Environmental Protection Technology Research Institute Co., Ltd. ("Environment Institute") and the deputy director general of the CNPC Safety and Environment Supervision Center ("Safety Supervision Center"). Mr. Lan is a professor-level senior engineer and holds a bachelor's degree. From December 2010, he served successively as deputy general manager and general manager of PetroChina Yunnan Marketing Company, general manager of PetroChina Gansu Marketing Company, and executive director of PetroChina Marketing Co., Ltd. He was appointed as a supervisor of our company in May 2022, and as the executive director of the Environment Institute and the deputy director general of the Safety Supervision Center in December 2022.

He Jiangchuan, age 57, is an employee representative supervisor of our company, and concurrently the general manager of the Oil, Gas and New Energy Branch Company and the general manager of the Crude Oil Sales Branch Company. Mr. He is a professor-level engineer and holds a doctorate degree. From December 2007, he served successively as deputy general manager of PetroChina Exploration and Production Company, executive deputy general manager of PetroChina Tarim Oilfield Company, and general manager and executive director of PetroChina Changqing Oilfield Company ("Changqing Oilfield"). He was appointed the general manager of the Oil, Gas and New Energy Branch Company and the general manager of the Crude Oil Sales Branch Company in March 2023. Mr. He was appointed as a supervisor of our company in May 2022.

Jin Yanjiang, age 56, is an employee representative supervisor of our company, and concurrently the executive director of Jilin Petrochemical. Mr. Jin is a professor-level engineer and holds a doctorate degree. From August 2011, he served successively as deputy general manager, chief safety officer of

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Jilin Petrochemical, deputy general manager of PetroChina North China Petrochemical Company, executive director and general manager of PetroChina Yunnan Petrochemical Company Limited, and general manager of Jilin Petrochemical. He has served as executive director of Jilin Petrochemical since October 2020. Mr. Jin was appointed as a supervisor of our company in May 2022.

Fu Bin, age 58, is an employee representative supervisor of our company, concurrently the executive director of the Natural Gas Marketing Branch Company, the chairman of Kunlun Energy. Mr. Fu is a professor-level economist and holds a master's degree. From November 2003, Mr. Fu served successively as executive deputy general manager and general manager of China Marine Bunker (PetroChina) Co., Ltd., deputy general manager of PetroChina Marketing Company, general manager of PetroChina Sichuan Marketing Company, general manager of PetroChina Marketing Company, and general manager of PetroChina Natural Gas and Pipeline Company. He has served as executive director of the Natural Gas Marketing Branch Company and chairman of Kunlun Energy since October 2020. Mr. Fu was appointed as a supervisor of our company in September 2022.

Information on our resigned supervisors is as set out below:

Name	Gender	Age	Position	Term	Remuneration before tax received from the Company in 2022 (RMB'000)	Whether received remuneration from offices held in CNPC	Number of Shares held in the Company	
							As at December 31, 2021	As at December 31, 2022
Lv Bo	M	60	Chairman of the Supervisory Committee	2020.11-2022.06	—	Yes	0	0
Zhang Fengshan	M	61	Supervisor	2014.05-2022.06	—	Yes	0	0
Jiang Lifu	M	59	Supervisor	2014.10-2022.06	—	Yes	0	0
Lu Yaozhong	M	58	Supervisor	2017.06-2022.06	—	Yes	0	0
Wang Liang	M	60	Supervisor	2017.10-2022.09	—	Yes	0	0
Fu Suotang	M	61	Employee Representative Supervisor	2017.06-2022.05	143	No	0	0
Li Jiamin	M	59	Employee Representative Supervisor	2014.05-2022.05	251	No	0	0
Liu Xianhua	M	60	Employee Representative Supervisor	2016.05-2022.05	230	No	0	0

Senior Management Team Members other than Executive Directors

Information on current members of our senior management team other than executive directors is as set out below:

Name	Gender	Age	Position	Term	Remuneration before tax received from the Company in 2022 (RMB'000)	Whether received remuneration from offices held in CNPC	Number of Shares held in the Company	
							As at December 31, 2021	As at December 31, 2022
Yang Jigang	M	60	Vice President and Chief Engineer	2017.12-	1,541	No	0	0
Zhang Minglu	M	59	Chief Safety Officer	2021.07-	1,505	No	0	0
Zhu Guowen	M	56	Vice President	2021.07-	1,621	No	0	0
Zhang Daowei	M	50	Vice President	2022.06-	748	No	0	0
Wan Jun	M	57	Vice President	2022.06-	757	No	0	0
Wang Hua	M	49	CFO and Board Secretary	2022.06-	720	No	0	0

Note:

1. Mr. Zhang Daowei and Mr. Wan Jun were each appointed as a vice president of our company on June 17, 2022. Mr. Wang Hua was appointed as the CFO and board secretary of the company on June 17, 2022. The remuneration received in 2022 as set forth in the above table was the remuneration received from the company after each relevant person was appointed as a senior management member of the company.
2. The above remunerations are pre-tax amounts paid on a calendar year basis, including salaries, allowance, basic retirement pension, basic medical insurance, housing provident fund and other benefits.

Biography of Current Senior Management Members other than Executive Directors

Yang Jigang, age 60, is a vice president and the chief engineer of our company. Mr. Yang is a professor-level senior engineer and holds a master's degree. From August 1997, Mr. Yang served successively as deputy manager of Lanzhou Chemical Industry Corporation, chief engineer of the Oil Refinery and Chemical Engineering Department of CNPC, chief engineer of PetroChina Refinery and Marketing Company, deputy general manager and chief engineer of PetroChina Chemical Engineering and Marketing Company, general manager of PetroChina Daqing Petrochemical Company, and deputy general manager, general manager and executive director of PetroChina Refinery and Chemical Engineering Company. In December 2017, Mr. Yang was appointed as a vice president of our company and then in April 2021 as the chief engineer of our company.

Zhang Minglu, age 59, is the chief safety officer of our company and the general manager of the Quality, Health, Safety and Environment Department ("QHSE Department") of our company, and concurrently the deputy chief safety officer of CNPC and the general manager of the QHSE Department of CNPC. Mr. Zhang is a professor-level senior engineer and holds a doctorate degree. From June 2008, he served successively as chief geologist, deputy general manager and chief safety officer of Changqing Oilfield, and general manager of PetroChina Qinghai Oilfield Company ("Qinghai Oilfield"). From March 2021, Mr. Zhang has served as general manager of the QHSE Department of our company and CNPC. In June 2021, Mr. Zhang was appointed as the deputy safety director of CNPC and in July 2021 as the chief safety officer of our company.

Zhu Guowen, age 56, is a vice president of our company, and concurrently the executive director of Daqing Oilfield Co., Ltd. ("Daqing Oilfield"), and executive director of Daqing Petroleum Administration Bureau Co., Ltd. ("Daqing Petroleum Bureau") Mr. Zhu is a professor-level senior engineer and holds a doctorate degree.

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From March 2010, Mr. Zhu served successively as plant manager of the First Production Plant of Daqing Oilfield, deputy general manager of Daqing Oilfield, general manager of PetroChina Zhejiang Oilfield Company, and general manager of Daqing Oilfield. From June 2021, he has served as executive director of Daqing Oilfield and executive director of Daqing Petroleum Bureau. Mr. Zhu was appointed as a vice president of our company in July 2021.

Zhang Daowei, age 50, is a vice president of our company, and concurrently serves as the executive director of the Oil, Gas and New Energy Branch Company. Mr. Zhang is a professor-level senior engineer and holds doctorate degree. From December 2015, he served successively as deputy general manager, executive deputy general manager of Qinghai Oilfield, general manager and executive director of PetroChina Southwest Oilfield Company, and general manager of PetroChina Exploration and Production Company. He was appointed as a vice president of our company in June 2022, and then as the executive director of the Oil, Gas and New Energy Branch Company in August 2022.

Wan Jun, age 57, is a vice president of our company, and concurrently the general manager of the Development and Planning Department of CNPC and our company. Mr. Wan is a professor-level senior engineer and holds a doctorate degree. From February 2006, he served successively as plant manager of the First Production Plant of Daqing Oilfield, deputy general manager, chief safety officer and executive deputy general manager of Daqing Oilfield, general manager of PetroChina Liaohe Oilfield Company, and general manager of PetroChina Exploration and Production Company. He has served as the general manager of the Development and Planning Department of CNPC and our company since January 2022. Mr. Wan was appointed as a vice president of our company in June 2022. Mr. Wan was appointed to concurrently serve as the executive director of PetroChina Planning & Engineering Institute in March 2023.

Wang Hua, age 49, is the CFO and board secretary of our company. Mr. Wang is a senior accountant and holds a master's degree. From October 2016, he served successively as CFO of CNPC Capital Co., Ltd., deputy general manager of the Finance Department of CNPC and deputy general manager and the general manager of the Finance Department of our company. Mr. Wang was appointed as the CFO and board secretary of our company in June 2022, and then as the board secretary of our company in August 2022.

Information on resigned members of our senior management team is as set out below:

Name	Gender	Age	Position	Term	Remuneration before tax received from the Company in 2022 (RMB'000)	Whether received remuneration from offices held in CNPC	Number of Shares held in the Company	
							As at December 31, 2021	As at December 31, 2022
Sun Longde	M	61	Vice President and Chief Geologist	2007.06-2022.04	287	No	0	0
Li Luguang	M	61	Vice President	2018.06-2022.04	167	No	0	0
Tian Jinghui	M	60	Vice President	2015.11-2023.01	1,447	No	0	0
Chai Shouping	M	61	CFO and Board Secretary	2017.01-2022.06	361	No	0	0

Changes in Directors, Supervisors and Senior Management Team

(1) On April 29, 2022,

- Mr. Liu Yuezhen resigned from his position as a non-executive director of our company due to age and simultaneously ceased to serve as a member of the audit committee and the evaluation and remuneration committee of our company;
- Mr. Sun Longde resigned from his position as a vice president and the chief geologist of our company due to age;

- Mr. Li Luguang resigned from his position as a vice president of our company due to age;
 - The board of directors of our company resolved to appoint Mr. Duan Liangwei as a member of the evaluation and remuneration committee of our company, Mr. Jiao Fangzheng as the chief geologist of our company, and appointed Mr. Jiao Fangzheng, a former non-executive director of our company, as an executive director.
- (2) On May 19, 2022,
- Mr. Fu Suotang resigned from his position as an employee representative supervisor of our company due to age;
 - Mr. Li Jiamin and Mr. Liu Xianhua resigned from their positions as employee representative supervisor of our company due to work arrangement; and
 - Mr. Lan Jianbin, Mr. He Jiangchuan and Mr. Jin Yanjiang were each elected as an employee representative supervisor of our company through the democratic election of the employee representatives of our company.
- (3) On June 9, 2022,
- Mr. Lv Bo resigned from his position as the chairman of the supervisory committee and supervisor of our company due to work arrangement;
 - Mr. Zhang Fengshan resigned from his position as a supervisor of our company due to age;
 - Mr. Jiang Lifu and Mr. Lu Yaozhong resigned from their positions as supervisor of our company due to work arrangement;
 - Mr. Cai Anhui, Mr. Xie Haibing, Ms. Zhao Ying, and Mr. Cai Yong were each elected as a supervisor of our company at the 2021 annual general meeting of our company;
 - Mr. Xie Jun was appointed as a non-executive director of our company; and
 - Mr. Cai Anhui was elected as the chairman of the supervisory committee by the supervisory committee of our company.
- (4) On June 15, 2022, Mr. Simon Peter Henry resigned from his position as an INED of our company due to personal business commitments and simultaneously ceased to serve as a member of the investment and development committee of our company.
- (5) On June 17, 2022,
- Mr. Chai Shouping resigned from his position as the CFO and the board secretary of our company due to age; and
 - The board of directors of our company resolved to appoint Mr. Huang Yongzhang as a member of the investment and development committee, Mr. Xie Jun as a member of the audit committee, Mr. Zhang Daowei and Mr. Wan Jun as a vice presidents of our company, and Mr. Wang Hua as the CFO and board secretary of our company.
- (6) On August 12, 2022, Mr. Chai Shouping resigned from his position as the company secretary of our company; and the board of directors of our company resolved to appoint Mr. Wang Hua as the company secretary of our company.
- (7) On September 29, 2022, Mr. Wang Liang resigned from his position as a supervisor of our company due to age; and Mr. Fu Bin was elected as an employee representative supervisor of our company through the democratic election of employee representatives.
- (8) On January 6, 2023, Mr. Tian Jinghui resigned from his position as a vice president of our company due to age.

Compensation

The senior management members' compensation consists of fixed salaries and variable compensation. The variable compensation, which accounts for approximately 75% of the total compensation package, is linked to the attainment of specific performance targets, such as our net income for the year, return on capital and the individual performance evaluation results. All of our senior management members have entered into performance contracts with us.

Our directors and supervisors, who hold senior management positions or are otherwise employed by us and other senior management of our company receive compensation in the form of salaries, insurance and other benefits in kind, including our contribution to the pension plans for them.

The aggregate amount of salaries and other compensation, insurance and other benefits in kind paid by us to our directors, who hold senior management positions or are otherwise employed by us, during the year ended December 31, 2022 was RMB2,613 thousand which does not include the fees totaling RMB2,774 thousand paid to our independent directors. The aggregate amount of salaries or other compensation, insurance and other benefits in kind paid by us to our supervisors, who hold senior management position or are otherwise employed by us during the year ended December 31, 2022 was RMB3,118 thousand. The aggregate amount of salaries or other compensation, insurance and other benefits in kind paid by us to other senior management during the year ended December 31, 2022 was RMB8,009 thousand.

In 2022, we paid RMB2,052 thousand as our contribution to the pension plans for our directors and supervisors, who hold senior management positions or are otherwise employed by us and other senior management of our company.

Save as disclosed, no other payments have been paid or are payable, with respect to the year ended December 31, 2022, by us or any of our subsidiaries to our directors. In addition, we have no service contracts with our directors that provide for benefits to our directors upon the termination of their employment with us.

For discussions about the compensations of our individual directors and supervisors, please see Note 11 to our consolidated financial statements included elsewhere in this annual report.

Board Practices

Our board of directors has five committees, namely, the nominating committee, the audit committee, the investment and development committee, the evaluation and remuneration committee and the sustainable development committee.

Nominating Committee

Our nominating committee is composed of Mr. Dai Houliang, as chairman of the committee, and Mr. Cai Jinyong and Mr. Jiang, Simon X., as members. The nominating committee's major responsibilities include:

- reviewing and discussing the structure, size and composition of the board of directors regularly, and making recommendations on changes to the board to follow the Company's corporate strategy;
- considering the criteria and procedures for selection of directors, president and other senior management, and making recommendations to the board of directors;
- considering the board diversity policy and the training systems for directors and management;
- selecting qualified candidates for directorship and members of senior management, reviewing the qualifications of candidates for directorship and president, and making recommendations;
- reviewing the proposals on candidates nominated by the nominators who have the nominating rights under the Articles of Association;

- reviewing the independence of INEDs; and
- attending the shareholders' meeting and answer the investor's consultation on the work of the nomination committee, as well as the relevant laws, regulations, listing rules and other matters authorized by the board of directors.

Audit Committee

Our audit committee is composed of two INEDs, Mr. Cai Jinyong and Mr. Jiang, Simon X., and one non-executive director, Mr. Xie Jun. Mr. Cai Jinyong serves as the chairman of the committee. Under our audit committee charter, the chairman of the committee must be an independent director and all resolutions of the committee must be approved by independent directors. The audit committee's major responsibilities include:

- reviewing and supervising the engagement of external auditors and their performance;
- reviewing and ensuring the completeness of annual reports, interim reports and quarterly reports, if any, and related financial statements and accounts, and reviewing any material opinion contained in the aforesaid statements and reports with respect to financial reporting;
- reporting to the board of directors in writing on the financial reports of the Company and related information, having considered the issues raised by external auditors;
- reviewing and scrutinizing the work conducted by the internal audit department in according with the applicable PRC and international rules;
- monitoring the financial reporting system and internal control procedures of the Company, as well as checking and assessing matters relating to, among others, the financial operations, internal control and risk management of the Company;
- receiving, keeping and dealing with complaints or anonymous reports regarding accounting, internal accounting control or audit matters and ensuring the confidentiality of such complaints or reports;
- reporting regularly to the board of directors with respect to any significant matters which may affect the financial position of the Company and its operations and with respect to the self-evaluation of the committee and its members on the performance of their duties; and
- performing other responsibilities as may be required under relevant laws, regulations and the listing rules of the stock exchanges where our shares are listed (as amended from time to time).

Investment and Development Committee

Our investment and development committee is composed of Mr. Hou Qijun, as chairman of the committee, and Mr. Duan Liangwei and Mr. Huang Yongzhang, as members. The investment and development committee's major responsibilities include:

- studying the long-term development strategies of the Company proposed by our president and making recommendations to the board of directors;
- studying the annual investment budget and the adjustment proposal regarding the investment plan as proposed by our president and making recommendations to the board of directors;
- reviewing feasibility studies and preliminary feasibility studies for investment or financing proposals, capital operation projects and asset operation projects of great significance to our company subject to the approval of the board of directors and making recommendations to the board of directors;
- deliberating on other significant matters that may have an effect on the development of our company and making recommendations to the board of directors; and
- addressing issues related to relevant laws, regulations and listing rules and requirements of the stock exchanges on which our shares are listed and handling other matters as delegated by the board of directors.

Evaluation and Remuneration Committee

Our evaluation and remuneration committee is composed of Ms. Elsie Leung Oi-sie, as chairman of the committee, and Mr. Duan Liangwei and Mr. Tokuchi Tatsuhito, as members. The evaluation and remuneration committee's major responsibilities include:

- studying the evaluation criteria for directors and senior officers, conducting the evaluations and proposing suggestions;
- studying and evaluating the remuneration policies and plans for directors and senior officers (including the compensation in connection with the removal or retirement of the director and senior officers);
- organizing the evaluation of the performance of our president and reporting the evaluation result to the board of directors, supervising the evaluation of the performance of our senior vice presidents, vice presidents, CFO and other senior management members conducted under the leadership of the president;
- studying our incentive plan and compensation plan, supervising and evaluating the implementation of these plans and making recommendations for improvements to and perfection of such plans; and
- studying the relevant laws, regulations and the listing rules of the stock exchanges where the shares of the Company are listed (as amended from time to time) and other matters authorized by the board of directors.

Sustainable Development Committee

Our sustainable development committee is composed of Mr. Huang Yongzhang, as chairman of the committee, and Mr. Jiao Fangzheng and Mr. Ren Lixin, as members. The sustainable development committee's major responsibilities include:

- studying the sustainable development (including but not limited to environment, society and governance) matters of the Company, identifying and assessing major risks and impacts on the sustainable development of the Company, strengthening risk management in respect of environment, social responsibility and corporate governance and making proposals to the board of directors;
- supervising the Company's commitments and performance on key issues such as response to climate change, safeguarding of health and safety and fulfilment of social responsibilities, and making proposals to the board of directors;
- reviewing the relevant guidelines, strategies, objectives, measures and relevant important issues related to the sustainable development of the Company, and supervising and checking the implementation of the sustainable development objectives of the Company against the corresponding sustainable development objectives that have been set;
- reviewing the Company's annual reports on environment, social responsibility and governance and the reports on quality, safety and environmental protection and making proposals to the board of directors;
- paying attention to the important information of sustainable development matters related to the Company's business, determining the potential material effect that the environmental, society and governance matters may have on the stakeholders, supervising and studying the material safety and environmental risks facing the Company and recommending response measures, and making corresponding proposals to the board of directors;
- other matters delegated by the board of directors.

Employees

As of December 31, 2020, 2021 and 2022, we had 432,003, 417,173 and 398,440 employees (not including the temporary employees), respectively. During 2022, we employed 242,867 temporary employees on an average. As of December 31, 2022, we had 236,527 temporary employees. The table below sets forth the number of our employees by business segment as of December 31, 2022.

	Employees	% of Total
Oil, gas and new energy	230,008	57.73
Refining, chemicals and new materials	125,002	31.37
Marketing	34,181	8.58
Natural gas sales	3,803	0.95
Headquarters and others ⁽¹⁾	5,446	1.37
Total	398,440	100.00

(1) Including the numbers of employees of the management of our headquarters, specialized companies, PetroChina Exploration & Development Research Institute, PetroChina Planning & Engineering Institute, Petrochemical Research Institute and other units.

Our employees participate in various basic social insurance plans organized by municipal and provincial governments whereby we are required to make monthly contributions to these plans at certain rates of the employees' salary as stipulated by relevant local regulations. Expenses incurred by us in connection with the retirement benefit plans were approximately RMB16,833 million, RMB19,939 million and RMB20,728 million, respectively, for the years ended December 31, 2020, 2021 and 2022, respectively.

In 2022, we did not experience any strikes, work stoppages, labor disputes or actions that affected the operation of any of our businesses.

Share Ownership

As of December 31, 2022 our directors, senior officers and supervisors did not have share ownership in us or any of our affiliates.

Item 7 — MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

Major Shareholders

We were established on November 5, 1999 with CNPC as the sole promoter. As of March 31, 2023, CNPC beneficially owned 151,215,083,570 shares, which include 291,518,000 H Shares indirectly held by CNPC through Fairy King Investments Limited, an overseas wholly owned subsidiary of CNPC, representing approximately 82.62% of our share capital, and, accordingly, CNPC is our controlling shareholder. The following table sets forth the major shareholders of our A Shares and H Shares as of March 31, 2023:

Name of Shareholders	Class of Shares	Number of Shares Held	Capacity	Percentage of Such Shares in That Class of the Issued Shares Capital (%)	Percentage in the Total Share Capital (%)
CNPC	A Shares	150,923,565,570 (long position) ⁽¹⁾	Beneficial Owner	93.21	82.46
	H Shares	291,518,000 (long position) ⁽²⁾	Interest of Corporation Controlled by the Substantial Shareholder	1.38	0.16
BlackRock, Inc ⁽³⁾	H Shares	1,669,220,483 (long position)	Interest of Corporation Controlled by the Substantial Shareholder	7.91	0.91
Brown Brothers Harriman & Co.	H Shares	1,061,620,645 (long position)	Approved Lending Agent		
		1,061,620,645 (shares available for lending)		5.03	0.58
				5.03	0.58

Notes:

- (1) CNPC completed the public issuance of exchangeable corporate bonds in 2018, whereby a part of the A shares of our company were used as the underlying shares. The exchangeable corporate bonds were issued for RMB20 billion for a term of five years and 3,820,000,000 underlying shares of our company held by CNPC were transferred into the 18 CNPC EB Special Account. As at the date of this announcement, CNPC has completed the delisting of the 2018 exchangeable corporate bonds and the procedures for the release of the registration of pledge and trust of the above exchangeable corporate bonds. Upon the completion of the release of the registration of pledge and trust of the above shares, CNPC held 150,923,565,570 A Shares of our company, and the 18 CNPC EB Special Account ceased to hold any shares of our company.
- (2) 291,518,000 H shares (long position) were held by Fairy King Investments Limited, an overseas wholly-owned subsidiary of CNPC. CNPC is deemed to be interested in the H shares held by Fairy King Investments Limited.
- (3) BlackRock, Inc., through various subsidiaries, had an interest in the H shares of our company. 1,669,220,483 H shares (long position) were held in its capacity as interest of corporation controlled by the substantial shareholder.

Related Party Transactions

CNPC is a controlling shareholder of our company. We have extensive business dealings with CNPC and other members of the CNPC group, all of which constitute related party transactions for us. We also continued to carry out existing continuing transactions with other related parties in 2022.

Continuing Related Party Transactions

Since 2000, our company has engaged a variety of continuing related party transactions with CNPC. CNPC provides various services to us and our company also provides specific products and services to CNPC. These transactions are governed by several agreements between CNPC and us, including the comprehensive products and services agreement, land lease, building lease, intellectual property licensing contracts and contract for the transfer of rights under Sino-foreign cooperative production sharing contracts, as amended.

1. The comprehensive products and services agreement between CNPC and us

The comprehensive products and services agreement (the “Comprehensive Agreement”) entered into between CNPC and us is updated every three years. The latest Comprehensive Agreement (the “New Comprehensive Agreement”) was signed in 2020, which covers the period from January 1, 2021 to December 31, 2023. The New Comprehensive Agreement revised the previous Comprehensive Agreement mainly as follows: (1) updated the pricing basis for refining products, natural gas, power supply, and gas supply services provided by us to CNPC and jointly-held entities; (2) updated the pricing basis for project design, project supervision, power supply, and gas supply services provided by CNPC to us; and (3) added the sharing services to the services provided by CNPC to us. Other terms and conditions remain unchanged. The New Comprehensive Agreement was approved at the extraordinary general meeting held on November 5, 2020.

Under the New Comprehensive Agreement, we and CNPC will provide the following products and services to each other:

(A) Products and services to be provided by us to CNPC mainly include: refined oil products, chemical products, crude oil, natural gas, water supply, electricity supply, gas supply and heating supply, metering and measuring, and commissioned operations, supply of materials, financial services, and other products and services that CNPC and jointly held companies may request us to provide from time to time for itself to consume, use or sell. In addition, we will provide financial services to jointly held companies, including provision of entrusted loans, guarantees and other financial services.

(B) Products and services to be provided by CNPC/jointly held companies to us mainly include:

- construction and technical services, including but not limited to exploration technology service, downhole operation service, oilfield construction service, refinery construction service and engineering and design service;
- production services, which will be mainly the products and services provided in light of the requirements for our daily operations, including but not limited to crude oil, natural gas, refined oil products, chemical products, water supply, electricity supply, gas supply and communications;
- supply of materials services not included in the foregoing construction and technical services or production services due to difference in nature, which will be mainly materials procurement agency services, including but not limited to procurement of materials, quality inspection, storage of materials and delivery of materials;
- social and ancillary services, including but not limited to security systems, staff canteens and training centers; and
- financial services, including loans and other financial aids, deposit services, entrusted loans, settlement services, finance lease services and other financial services.

The general principle of the New Comprehensive Agreement is that all products and services provided by each party shall be of good quality and fair and reasonable price. If a third party provides similar products or services or participates in similar transactions, it shall not be inferior to the conditions provided by the third party for such products or services. The pricing of the products and services to be provided under the New Comprehensive Agreement shall be either following government-prescribed price, market price, cost price, or contractual price, depending on the circumstances. The deposit and loan interest rates of financial services shall be subject to the interest rates and relevant charging standards for the same period as published by the People's Bank of China ("PBOC") or relevant financial regulatory agencies, and shall not be inferior to the interest rates, charging standards and other conditions for the party to obtain funds and services from an independent third party. The New Comprehensive Agreement is not exclusive, and the parties may provide to and purchase products and services from third parties. Each party may terminate the performance of on or more products or services by giving at least six months' written notice. However, if we are unable to easily obtain services that CNPC provides from a third party, CNPC shall not terminate the provision of such services unless it get our written consent.

2. Specific product and service implementation agreements

According to the current arrangements contemplated under the New Comprehensive Agreement, from time to time and when necessary, the parties may enter into implementation agreements for specific products and services. The specific product and service implementation agreements shall not violate the principles, terms and conditions of the New Comprehensive Agreement in any material respect.

Since a specific product and service implementation agreements is only a further elaboration of the products and services as contemplated by the New Comprehensive Agreement, they do not constitute new categories of related party transactions.

3. Land Use Rights Lease Agreement

We entered into a Land Use Rights Lease Agreement with CNPC in March 2000 for a term of 50 years. The rent may, as at the expiration of 10-year term of the Land Use Rights Lease Agreement, be adjusted to reflect market conditions prevalent at such time of adjustment, including the then prevailing market prices, inflation or deflation (as applicable) and other factors.

We entered into a supplementary agreement to the Land Use Rights Lease Agreement with CNPC on August 25, 2011. Thereafter, the parties adjusted the area and rent every three years. The latest adjustment happened on August 27, 2020, whereby the parties adjusted the area to 1,142 million square meters and the annual rent to approximately RMB5,673 million (exclusive of taxes) for the three years since January 1, 2021.

All of the amendments and adjustment were approved by the relevant general meetings. The latest adjustment was approved by the extraordinary general meeting of our company on November 5, 2020.

4. Buildings Lease Agreement

On August 24, 2017, we entered into an agreement with CNPC. The agreement took effect on January 1, 2018, with a term of 20 years. The parties may adjust the area of building leased and the rent fees every three years as appropriate by reference to the status of the production and operations and the prevailing market price, but the adjusted rent fees shall not exceed the comparable fair market price. On August 27, 2020, the parties confirmed that effective from January 1, 2021, the area of the leased buildings should be 1.29 million square meters and the annual rent be adjusted to approximately RMB713 million. All of the amendments and adjustments were approved by the relevant general meetings. The latest adjustment was approved by the extraordinary general meeting of our company on November 5, 2020.

5. Intellectual Property Licensing Contracts

We and CNPC continue to implement the three intellectual property licensing contracts entered on March 10, 2000, namely the Trademark Licensing Contract, the Patent and Know-how Licensing Contract and the Computer Software Licensing Contract. CNPC has agreed to extend the term of the Computer Software Licensing Contract to the expiry date of the statutory protection period of the relevant software or when such software enters the public domain. Pursuant to these licensing contracts, CNPC has granted us the exclusive right to use certain trademarks, patents, know-how and computer software of CNPC at no cost.

6. Contract for the Transfer of Rights under Sino-Foreign Cooperative Production Sharing Contracts

We and CNPC continue to implement the Contract for the Transfer of Rights under Sino-Foreign Cooperative Production Sharing Contracts dated December 23, 1999. As part of the restructuring to organize our company, CNPC transferred to us relevant rights and obligations under 28 production sharing contracts executed with international oil and natural gas companies, except the rights and obligations relating to CNPC's supervisory functions.

As of December 31, 2022, a total of 29 projects were being executed by CNPC under the production sharing contracts. CNPC has assigned to us at nil consideration all of its rights and obligations under the production sharing contracts and all the related interests vested in CNPC pursuant to applicable PRC laws and regulations, except the rights and obligations relating to CNPC's supervisory functions.

7. Ongoing connected transactions with CNPC Finance

CNPC Finance Co., Ltd. ("CPF") is an internal finance company of CNPC. CNPC, CNPC Capital Co., Ltd. and the Company each hold 40%, 28% and 32% equity interest in CPF, respectively. In 2022, the beginning balance of our deposits with CPF was RMB30,128 million, with cash inflow of RMB4,050,243 million and cash outflow of RMB4,039,179 million during the reporting period, and the end-of-period balance was RMB41,192 million; the deposit interest rate range of RMB was from 0.25% to 4.26%. The beginning balance of the loans provided by CPF to us was RMB70,567 million, with new loans of RMB59,255 million and repaid loans of RMB65,206 million during the reporting period, and the end-of-period balance was RMB64,616 million. The loan interest rate range of RMB was from 2.60% to 5.00%. In 2022, the amount of acceptance bills issued and discounting of bills undertaken by CPF for us was RMB15,175 million and RMB2,964 million, respectively. The amount of the relevant continuing related party transactions with CPF has been included in the upper limit of related party transactions between CNPC and us.

On March 31, 2022, we signed a framework agreement on monetary derivatives services with CPF for monetary derivatives transaction for 2022, pursuant to which, we and CPF conducted monetary financial derivatives business transactions in 2022, in order to lock the exchange rates in advance, avoid market risks and achieve hedging purposes. The agreement expired on December 31, 2022. In 2022, the monetary derivatives transactions conducted by CPF and us amounted to US\$3,984 million.

8. Upper Limits for the Continuing Related Party Transactions

We and CNPC determine the upper limits for continuing related party transactions every three years, by taking into consideration the transactions and transaction amounts for provision of products and services by us, CNPC and our jointly held companies to each other during the prior periods, and by taking into account the need for business development and the potential magnitude of fluctuation of the prices of crude oil, petrochemical products, natural gas, and other petroleum products and services in both the international and Chinese markets. The upper limits, after being approved at the general meeting of our company, should be adopted as the upper limits of continuing related party transactions for the next three years. The transaction amounts of all the historical continuing related party transactions as described above were all within the upper limits for the corresponding periods.

The upper limits of continuing related party transactions for 2021, 2022 and 2023 are as follows:

Products and Services	2021	2022	2023
	RMB (in millions)		
(i) Products and services provided by us to the CNPC and jointly-held companies	150,000	147,200	144,600
(ii) Products and services provided by CNPC and jointly-held companies to us			
(a) Construction and technical services	198,200	197,500	197,000
(b) Production services	207,700	205,500	204,500
(c) Supply of materials services	35,300	35,300	35,300
(d) Social and ancillary services	5,800	5,800	5,800
(e) Financial Services			
- Aggregate of the daily highest amount of deposits of our company in CNPC and the total amount of interest received in respect of these deposits	55,000	55,000	55,000
- Insurance fees, handling charges for entrusted loans, and fees and charges for settlement services and other intermediary business	2,400	2,400	2,400
- Rents and other payments made under financial leasing	5,000	5,000	5,000
- Monetary derivatives provide by CPF to us			7,500
(iii) Financial services provided by us to the jointly-held companies	22,000	22,000	22,000
(iv) Land leases provided to us by CNPC	16,578	11,019	5,685
(v) Building leases provided to us by CNPC	2,083	1,384	714

* The annual upper limits of the rent for the land and property leased by us from CNPC shall be determined by reference to the annual value of the right-of-use assets.

9. INEDs' Confirmation

In relation to the continuing connected transactions undertaken by the Company in 2022, the INEDs of the Company confirmed that:

- the connected transactions disclosed above have been made in the ordinary course of business of the Company;
- the connected transactions disclosed above have been made on normal commercial terms or better terms;
- the connected transactions disclosed above have been conducted in accordance with the agreements governing such transactions and their terms are fair and reasonable and consistent with the interests of shareholders as a whole.

10. Auditor's Confirmation

The auditor of the Company has audited the connected transactions disclosed above and has provided our board of directors with a letter indicating that:

- all the connected transactions have been approved by our board of directors;
- all the connected transactions have been conducted in compliance with the pricing policies of the Company in all material respects if the transactions involve the provision of goods or services by the Company;
- all the connected transactions have been carried out in accordance with the terms of agreements; and
- all the transactions have been entered into within the annual caps disclosed above, if applicable.

Loans and Guarantees

In 2022, we did not provide any guarantee to or for the benefit of CNPC and its subsidiaries. As of December 31, 2022, the total outstanding guarantee we provided to or for the benefit of our subsidiaries, associates and affiliates other than CNPC and its subsidiaries was RMB144,128 million.

For a detailed discussion of continuing related party transactions, please see Note 39 to our consolidated financial statements included in this annual report.

One-off Related Party Transactions

In line with our overall development strategies, on June 20, 2022, we and Liaohe Petroleum Exploration Bureau Co., Ltd. (“Liaohe Bureau Company”) entered into an equity transfer agreement, pursuant to which we agreed to transfer 100% equity interests in Liaohe Oilfield (Panjin) Gas Storage Co., Ltd. held by us to Liaohe Bureau Company for a consideration of RMB1,287,756,500. As Liaohe Bureau Company is a wholly-owned subsidiary of our controlling shareholder, CNPC, according to the SSE Listing Rules and the Hong Kong Listing Rules, the transaction constitutes a connected transaction. The consideration of the deal was based on the asset evaluation performed by an independent third party and the agreement was entered into on normal commercial terms. The transaction closed on July 8, 2022.

Interests of Experts and Counsel

Not applicable.

Item 8 — FINANCIAL INFORMATION

Financial Statements

See the F-pages following Item 19.

Legal Proceedings

We are involved in several legal proceedings concerning matters arising in the ordinary course of our business and due to other reasons. We believe, based on currently available information, that these proceedings, individually or in the aggregate, will not have a material adverse effect on our profitability or financial condition.

Dividend Policy

Our Articles of Association provided that if our net profit attributable to owners of the company and the accumulated undistributed profit for a year are positive, and our cash flow can satisfy our normal operation and sustainable development, the amount of cash dividend to be distributed shall not be less than 30% of the net profit attributable to owners of the company realized in that year. We distribute dividends twice a year. Distribution of final dividends needs to be passed at the general meeting by ordinary resolution. The general meeting can, by ordinary resolution, authorize the board of directors to determine the distribution of interim dividends. Since the listing of our ADSs and our shares, we have distributed dividends to the shareholders by strictly complying with the Articles of Association and other relevant regulatory requirements, and adhering to the principle of bringing returns to shareholders, and after an overall consideration of various factors, including our operating performance, financial status, and cash flows. The total dividend for 2022 accounted for 51.8% of our net profit attributable to owners of the Company of 2022.

Our board of directors will declare dividends, if any, in RMB on a per share basis. Dividends payable to the holders of A Shares shall be paid in RMB. Save for the H Shares traded through the Southbound Trading Link, dividends payable to the holders of H Shares shall be paid in HK dollar. Our ADR program was terminated on October 17, 2022. According to the depositary agreement entered into among Bank of New York Mellon ("BNYM"), the owners and beneficial owners of ADS and us as of March 29, 2000, within one year after the termination of the depositary program, BNYM is obliged to continue to accept dividend distributions pertaining to the ADSs and deliver the dividends to the ADSs owners after deducting related expenses when the ADSs owners come to cancel the ADSs. One year after the termination of the depositary program, BNYM has the right to sell all the remaining uncanceled ADSs for cash, and the owners of ADSs will then become general creditors with respect to such net proceeds. Holders of A Shares and H Shares will share all dividends and other distribution items announced by our board of directors on a per share basis. We will take into account factors including the following for declaration of dividends:

- general business conditions;
- our financial results;
- capital requirements;
- contractual restrictions on the payment of dividends by us to our shareholders or by our subsidiaries to us;
- our shareholders' interests;
- the effect on our debt ratings; and
- other factors our board of directors may deem relevant.

We may only distribute dividends after we have made allowances for:

- recovery of losses, if any;
- allocations to the statutory common reserve fund; and
- allocations to a discretionary common reserve fund if approved by our shareholders.

The allocation to the statutory common reserve funds is 10% of profit for the year attributable to owners of the company determined in accordance with PRC accounting rules. Under PRC law, our distributable earnings will be equal to our profit for the year attributable to owners of the company determined in accordance with PRC accounting rules or IFRS, whichever is lower, less allocations to the statutory and discretionary funds.

We believe that our dividend policy strikes a balance between two important goals:

- providing our shareholders with a competitive return on investment; and
- assuring sufficient reinvestment of profits to enable us to achieve our strategic objectives.

Arrangement for Distribution of the Final Dividends for 2022

After an overall consideration of our operating performance, financial status and cash flows, etc. and in return for the shareholders, the board of directors recommended final dividends of RMB40,265 million in aggregate, representing RMB0.22 per share (inclusive of applicable taxes) for the second half of 2022. The proposed final dividends is subject to the shareholders' approval at the forthcoming annual general meeting for 2022. The final dividends shall be paid to our shareholders listed on our shareholder register as of the close of business on June 27, 2023. The register of members of H Shares will be closed from June 22, 2023 to June 27, 2023 (both days inclusive) during which period no transfer of H Shares will be registered. In order to be eligible for the final dividends, the holders of our H Share must lodge all share transfer documents together with the relevant share certificates at Hong Kong Securities and Registrar Limited, Shop 1712-1716, Hopewell Centre,

183 Queen's Road East, Wan Chai, Hong Kong, at or before 4:30 p.m. on June 21, 2023. Holders of A shares whose names appear on the register of members of the Company maintained at China Securities Depository and Clearing Corporation Limited ("CSDC") at the close of trading on the SSE in the afternoon of June 27, 2023 are eligible for the final dividends. The final dividends for A Shares and H Shares (including ADSs) for 2022 will be paid on or about June 28, 2023 and July 28, 2023, respectively.

In accordance with the relevant provisions of the Articles of Association of the Company and relevant laws and regulations, dividends payable to the Company's shareholders shall be declared in RMB. Dividends payable to the holders of A Shares shall be paid in RMB, and for the A Shares of the Company listed on the SSE and invested by the investors through the HKSE, dividends shall be paid in RMB to the accounts of the nominal shareholders through CSDC. Save for the H Shares of the Company listed on the HKSE and invested by the investors through the SSE and the Shenzhen Stock Exchange (the "H Shares under the Southbound Trading Link"), dividends payable to the holders of H Shares shall be paid in Hong Kong Dollar. The applicable exchange rate shall be the average of the medium exchange rates for RMB to Hong Kong Dollar as announced by the PBOC in the week prior to the declaration of the dividends at the 2022 general meeting of the Company. Dividends payable to the holders of H Shares under the Southbound Trading Link shall be paid in RMB. In accordance with the Agreement on Payment of Cash Dividends on the H Shares under the Southbound Trading Link between the Company and CSDC, CSDC will receive the dividends payable by the Company to holders of the H Shares under the Southbound Trading Link as a nominal holder of the H Shares under the Southbound Trading Link on behalf of investors and assist the payment of dividends on the H Shares under the Southbound Trading Link to investors thereof.

In relation to individual shareholders and securities investment funds holding A Shares of the Company, according to the rules of the *Implementation of Differential Individual Income Tax Policies on Dividends and Bonuses of Listed Companies (Cai Shui [2012] No.85)* and the *Notice of the MOF, the SAT and the CSRC on Issues concerning Differentiated Individual Income Tax Policies on Dividends and Bonuses of Listed Companies (Cai Shui [2015] No.101)*, when the Company distributes dividends, investors holding the shares of the Company for more than one year shall be temporarily exempted from individual income tax; investors holding the shares of the Company for less than one year (including one year) shall be temporarily exempted from paying individual income tax. When individual shareholders and securities investment funds holding A shares of the Company transfer their shares after the equity registration date, the Shanghai Branch of CSDC will calculate the actual tax payable based on the period of their shareholding, and securities companies and other share custodians will withhold the amount of tax payable from their respective accounts and transfer to the Shanghai Branch of CSDC. The actual tax payable is calculated as follows: if the shareholding period (meaning the duration from the date of public offering or acquiring the Company's shares from the market to the day before the date of transfer and delivery of the stock) is within one month (including one month), the dividends and bonuses will be fully considered as taxable income, and the actual tax payable will be 20% of the dividends and bonuses; if the shareholding period is more than one month to one year (including one year), 50% of the dividends and bonuses will be considered as taxable income, and the actual tax payable will be 10% of the dividends and bonuses; if the shareholding period exceeds one year, the dividends and bonuses are temporarily exempted from individual income tax.

In relation to Qualified Foreign Institutional Investors ("QFII") holding A shares of the Company, according to the *Notice of the SAT on Issues Concerning the Withholding of Enterprise Income Tax on Dividends, Bonuses and Interests Paid to QFII by Chinese Resident Enterprises (Letter No. 47 [2009] of the SAT)*, the Company will withhold corporate income tax at the rate of 10%; if the relevant shareholders consider that they are entitled to tax treatment under certain tax treaty (arrangement) in relation to the dividends, such shareholders may file an application for the tax treatment under the tax treaty (arrangement) with the competent tax authority after receiving dividends according to *Letter No. 47 [2009] of the SAT*.

According to the *Law on Corporate Income Tax of the PRC* and its implementing rules which came into effect on January 1, 2008, as amended on February 24, 2017 and December 29, 2018, the Company is required to withhold corporate income tax at the rate of 10% before distributing dividends to non-resident enterprise

shareholders whose names appear on the register of members of H Shares of the Company. Any H Shares registered in the name of non-individual shareholders, including HKSCC Nominees Limited, other nominees, trustees or other groups and organisations will be treated as being held by non-resident enterprise shareholders and therefore will be subject to the withholding of the corporate income tax. Should any holder of H Shares wish to change their shareholder status, please consult their agent or trust institution over the relevant procedures. The Company will withhold and pay the corporate income tax strictly in accordance with the relevant laws or requirements of the relevant governmental departments and strictly based on the information registered on the Company's H Share register of members on June 27, 2023.

According to the applicable requirements of the SAT, the Company is required to withhold and pay the individual income tax for its individual H shareholders and an individual H shareholder is entitled to certain tax preferential treatments according to the tax agreements between the country where the individual H shareholder is resident and China and the provisions in the tax arrangements between China's mainland and Hong Kong (Macau). The Company would withhold and pay the individual income tax at the tax rate of 10% on behalf of the individual H shareholders who are Hong Kong residents, Macau residents or residents of those countries having agreements with China for individual income tax on dividend at a rate equal to 10%. For individual H shareholders who are residents of those countries having agreements with China for individual income tax on dividend at a rate lower than 10%, the Company would make applications on their behalf to seek entitlement of the relevant agreed preferential treatments pursuant to the applicable provisions of the SAT. For individual H shareholders who are residents of those countries having agreements with China for individual income tax on dividend at a rate higher than 10% but lower than 20%, the Company would withhold the individual income tax at the agreed-upon effective tax rate. For individual H shareholders who are residents of those countries without any tax agreements with China or having agreements with China for individual income tax on dividend at a rate of 20% or in other situations, the Company would withhold the individual income tax at a tax rate of 20%.

The Company will determine the country of domicile of the individual H shareholders based on the registered address as recorded in the register of members of the Company (the "Registered Address") on June 27, 2023, and will accordingly withhold and pay the individual income tax. If the country of domicile of an individual H shareholder is not the same as the Registered Address, the individual H shareholder shall notify the share registrar of the Company's H Shares and provide relevant supporting documents on or before 4:30 p.m. June 21, 2023 (address: Hong Kong Registrars Limited, Shops 1712-1716, Hopewell Centre, 183 Queen's Road East, Wanchai, Hong Kong). If the individual H shareholder does not provide the relevant supporting documents to the share registrar of the Company's H Shares within the period stated above, the Company will determine the country of domicile of the individual H shareholder based on the recorded Registered Address on June 27, 2023.

The Company will not entertain any claims arising from and assume no liability whatsoever in respect of any delay in or inaccurate determination of the country of domicile of any shareholder of the Company or any disputes over the withholding and payment of tax.

In accordance with the Notice of the MOF, the SAT and the CSRC on *Taxation Policies concerning the Pilot Program of an Interconnection Mechanism for Transactions in the Shanghai and Hong Kong Stock Markets (Cai Shui [2014] No.81)* which became effective on November 17, 2014 and the Notice of the MOF, the SAT and the CSRC on *Taxation Policies concerning the Pilot Program of an Interconnection Mechanism for Transactions in the Shenzhen and Hong Kong Stock Markets (Cai Shui [2016] No. 127)* which became effective on December 5, 2016, with regard to the dividends obtained by individual mainland investors from investment in the H shares of the Company listed on the HKSE through the Shanghai-Hong Kong and Shenzhen-Hong Kong Stock Connect, the Company will withhold their individual income tax at the rate of 20% in accordance with the register of individual mainland investors provided by CSDC. As to the withholding tax having been paid abroad, an individual investor may file an application for tax credit with the competent tax authority of CSDC with an effective credit document. With respect to the dividends obtained by mainland securities investment funds from investment in the H shares of the Company listed on the HKSE through the Shanghai-Hong Kong and Shenzhen-Hong Kong Stock Connect, the Company will withhold tax with reference to the provisions

concerning the collection of tax on individual investors. The Company will not withhold income tax on dividends obtained by mainland enterprise investors, and mainland enterprise investors shall file their income tax returns and pay tax themselves instead.

With regard to the dividends earned by the investors (including enterprises and individuals) from investment in the A Shares of the Company listed on SSE through the HKSE, the Company will withhold income tax at the rate of 10%, and file tax withholding returns with the competent tax authority. Where any Hong Kong investor is a tax resident of a foreign country and the rate of income tax on dividends is less than 10%, as provided for in the tax treaty between the country and the PRC, the enterprise or individual may personally, or designate a withholding agent to, file an application for the tax treatment under the tax treaty with the competent tax authority of the Company. Upon review, the competent tax authority will refund tax based on the difference between the amount of tax having been collected and the amount of tax payable calculated at the tax rate as set out in the tax treaty.

Significant Changes

None.

Item 9 — THE OFFER AND LISTING

Trading Market Information

Our ADSs, each representing 100 H Shares, par value RMB1.00 per H Share, had been listed and traded on the NYSE since April 6, 2000 under the symbol “PTR”. Our H Shares have been listed and traded on the HKSE since April 7, 2000 under the symbol “857”. In September 2005, our company issued an additional 3,196,801,818 H Shares. CNPC also sold 319,680,182 state-owned shares it held concurrently with our issuance of new H Shares in September 2005. In October 2007, we issued 4 billion A Shares and these shares were listed on the SSE on November 5, 2007 under the symbol “601857”. Following the issuance of A Shares, all the domestic shares of our company existing prior to the issuance of A Shares, i.e. the shares held by CNPC (our controlling shareholder) in our company, have been registered with CSDC as tradable A Shares. The HKSE and SSE are the principal trading markets for our H Shares and A Shares, respectively. NYSE was the principal trading market for our ADSs. On September 8, 2022, our ADSs were delisted from the NYSE. On October 17, 2022, our ADR program was terminated.

As of December 31, 2022, there were 21,098,900,000 H Shares and 161,922,077,818 A Shares issued and outstanding. As of December 31, 2022, there were 116 registered holders of ADSs evidencing 2,455,897 ADSs representing 245,589,700 H Shares. The depository of the ADSs is BNYM which provides the ADSs holders with services primarily in connection with cancellation of the ADSs during a term of one year after termination of the ADR program.

Item 10— ADDITIONAL INFORMATION

Memorandum and Articles of Association

Our Articles of Association Currently in Effect

The following is a summary based on the significant provisions of our Articles of Association. For details, you should read our amended and restated Articles of Association furnished to SEC on June 9, 2022.

Objectives and Purposes

We are a joint stock limited company established in accordance with the PRC Company Law and certain other laws and regulations of the PRC. We are registered with the PRC State Administration for Industry and Commerce with a business license number being 1000001003252. Article 10 of our Articles of Association provides that our objectives are to comply with the rules of the market, to continuously explore business models which are suitable for the development of the Company, to fully utilize every resource of the Company, to place emphasis on personnel training and technological development, to provide the society with competitive products, and to use its best endeavors to maximize its profits. For details of our scope of business, please refer to Article 11 of our Articles of Association.

Directors

Our directors shall be elected at our shareholders' general meeting. 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.

Where a director is in any way, directly or indirectly, materially interested in a proposal, arrangement or contract (other than his contract of service with the Company), he shall declare the nature and extent of his interests to the board of directors at the earliest opportunity, whether or not the proposal, arrangement or contract therefor is subject to the approval of the board of directors. Unless the interested director discloses his interests to the board of directors and the proposal, arrangement or contract is approved by the board of directors at a meeting in which the interested director, is not counted as part of the quorum and abstain from voting, the proposal, arrangement or contract in which that director is materially interested is voidable at the discretion of the Company except as against a bona fide party thereto who does not have knowledge of the breach of duty by the interested director. For this purpose, a director is deemed to be interested in a proposal, arrangement or contract in which his associate is interested. Where a director gives to the board of directors a notice in writing stating that, by reason of the facts specified in the notice, he is interested in a proposal, arrangement or contract which may subsequently be entered into by the Company, that notice shall be deemed to be a sufficient declaration of his interests so far as the content stated in such notice is concerned, provided that such notice shall have been given before the date on which the entering into the relevant contract or arrangement is first taken into consideration by the Company.

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

We shall not directly or indirectly make a loan to or provide any security for a director, unless the provision by the Company of a loan or a security or any other funds to a director to meet expenditure incurred or to be incurred by him for the sake of the Company or for the purpose of enabling him to perform his duties properly, in accordance with the terms of a service contract approved by the shareholders in a general meeting. If the ordinary business scope of the Company includes the provision of loans and security, the Company may make a loan to or provide a security to a director on normal commercial terms.

Dividends

Dividends shall be paid twice a year. The final dividends of the Company shall be decided by the shareholders by way of an ordinary resolution. The shareholders may by way of an ordinary resolution authorize the board of directors to decide on the interim dividends. The Company may pay any dividends in cash, shares or otherwise in such other way as permitted by laws and regulations. The Company shall pay any such dividends in cash in preference over other methods of payment. The Company shall pay cash dividends for the year in which both the net profit attributable to the owners of the company and the cumulative undistributed profit are positive

and so long as the cash flows of the Company may support its normal course of operation and sustainable development. Any such cash dividends shall not be less than 30% of the net profit attributable to the owners of the company for that year. If the shareholders' general meeting passes motions in connection with the distribution of cash dividends, allotment of bonus shares, or conversion of capital common reserve fund into share capital, the Company shall implement detailed plans thereof within two months after the conclusion of such shareholders' general meeting. If a shareholder has not claimed his dividends six years after such dividends has been declared in accordance with the Articles of Association, such shareholder is deemed to forfeit his right to claim such dividends.

When the Company distributes its after-tax profits for a given year, it shall allocate 10% of profits to its statutory common reserve fund. The Company shall no longer be required to make allocations to its statutory common reserve fund once the aggregate amount of such reserve reaches 50% or more of its registered capital. If the Company's statutory common reserve fund is insufficient to make up its losses of the previous years, such losses shall be made up from the profit for the current year before the Company makes allocations to the statutory common reserve fund. The Company may, if so resolved by the shareholders' meeting, make allocations to the discretionary common reserve fund from after-tax profits after making allocations to the statutory common reserve fund from the after-tax profits. The Company's after-tax profits remaining after it has made up its losses and made allocations to its common reserve fund shall be distributed in proportion to the shareholdings of its shareholders. If the shareholders' meeting distributes profits before the Company has made up its losses and made allocations to the statutory common reserve fund, the profits distributed must be returned to the Company.

Shareholders' Rights

A shareholder of the Company is a person who lawfully holds shares of the Company and whose name (title) is entered in the register of shareholders. Shareholders who hold shares of the same class shall enjoy the same rights. Article 49 set forth the rights of shareholders of ordinary shares such as the right to (i) receive dividends and other distributions in proportion to the number of shares held; (ii) propose, convene, preside over, attend or appoint a proxy to attend shareholders' general meetings and to vote thereat in accordance with laws; (iii) supervise management over business operations and present proposals or to raise queries; (iv) transfer, donate or pledge shares; (v) obtain financial information and other company information; (vi) participate in the distribution of residual assets of the Company in proportion to the number of shares held, in the event of the termination or liquidation of the Company, etc.

If the content of a resolution of a shareholders' general meeting or the board of directors violates any laws or administrative regulations, a shareholder has the right to file a petition with the court to invalidate the resolution. If the procedure for convening or the method of voting at a shareholders' general meeting or a meeting of the board of directors violates any laws, administrative regulations or the Company's Articles of Association, or if the contents of a resolution breaches the Company's Articles of Association, a shareholder may file a petition with the court to revoke the resolution within 60 days from the date on which the resolution was passed. If a director or any other senior officers violated any laws, administrative regulations or the Company's Articles of Association in the course of performing his or her duties to the Company, and thereby caused the Company to incur a loss, a shareholder or shareholders who individually or jointly hold one per cent (1%) or more of the Company's shares for more than one hundred and eighty (180) consecutive days may request in writing the supervisory committee to initiate proceedings in the court. If the supervisory committee has violated the laws, administrative regulations or the Articles of Association in the course of performing its duties to the Company, and thereby caused the Company to incur a loss, shareholder(s) may request in writing the board of directors to initiate proceedings in the court in respect thereof. If the supervisory committee or the board of directors refuses to initiate proceedings after receipt of a written request from the shareholder(s) as mentioned in the preceding paragraph, or fails to initiate proceedings within 30 days of the date of receipt of the request, or under urgent circumstances where failure to promptly initiate proceedings would cause irreparable harm to the Company's interests, the shareholders mentioned in the preceding paragraph are entitled to directly initiate proceedings in the court in their own name in the interests of the Company.

Shareholders' General Meetings

Shareholders' general meetings shall be convened by the board of directors. Annual general meetings are held once every year and within 6 months from the end of the preceding financial year. The board of directors shall convene an extraordinary general meeting within 2 months of the occurrence of any one of the events set forth in Article 63.

A 45-days prior written notice should be given to all of the shareholders whose names appear in the share register. A shareholder who intends to attend the meeting shall deliver to the Company his written reply concerning his attendance at such meeting 20 days before the date of the meeting. Shareholder(s) holding 3% or more of the total voting shares of the Company shall have the right to propose motions in writing to the convener 10 days prior to the date of such meeting. Any shareholder who is entitled to attend and vote at a general meeting shall be entitled to appoint one or more persons as his proxies to attend and vote on his behalf.

A shareholder (including a proxy), when voting at a general meeting, may exercise such voting rights as are attached to the voting shares which he represents, except where the cumulative voting system is adopted for voting on the election of directors and supervisors, each share shall have one vote. The voting on the election of directors and supervisors at the general meeting shall apply the cumulative voting system, which means that each share held by a shareholder shall have the same number of voting rights as the number of directors and supervisors to be elected and the voting rights held by a shareholder can be collectively exercised. At any shareholders' general meeting, a resolution shall be decided on a show of hands unless voting by way of a poll is required under the listing rules or demanded by the following persons before or after any vote by a show of hands: (i) the chairman of the meeting; (ii) at least two shareholders present in person or by proxy entitled to vote thereat; (iii) one or more shareholders present in person or by proxy who represent(s), individually or in aggregate, 10% or more of all shares carrying the right to vote at the meeting.

An ordinary resolution must be passed by votes representing one-half or more of the voting rights represented by the shareholders (including proxies) present at the general meeting. The following matters shall be resolved by an ordinary resolution: (i) work reports of the board of directors and the supervisory committee; (ii) annual profit distribution plans and loss recovery plans formulated by the board of directors; (iii) appointment or removal of members of the board of directors and members of the supervisory committee, their remuneration and manner of payment; (iv) annual budgets and final accounts, balance sheets and profit and loss accounts and other financial statements of the Company; (v) matters other than those which are required by the laws, administrative regulations or the Company's Articles of Association to be adopted by a special resolution.

A special resolution must be passed by votes representing two-thirds or more of the voting rights represented by the shareholders (including proxies) present at the general meeting. The following matters shall be resolved by a special resolution: (i) increase or reduction in the share capital of the Company and the issue of shares of any class, warrants and other similar securities by the Company; (ii) issue of debentures of the Company; (iii) division, merger, dissolution and liquidation of the Company; (iv) amendment of the Company's Articles of Association; (v) acquisition or disposal of major assets in one year or provision of securities for third parties which exceeds 30% of the latest audited total assets of the Company; (vi) stock incentive plans; (vii) any other matters considered by the shareholders at general meeting, and resolved by way of an ordinary resolution, to be of a nature which may have a material impact on the Company and should be adopted by a special resolution in accordance with the laws, administrative regulations and the Company's Articles of Association.

Where any shareholders request for the convention of an extraordinary general meeting or a class meeting the following procedures shall be followed: (i) shareholders who individually or in aggregate hold not less than 10% of the Company's shares with voting right shall have the right to request in writing the board of directors to convene an extraordinary general meeting or a class meeting. The board of directors shall, according to the laws, administrative regulations and the Company's Articles of Association, give written feedback of consenting to or refusing the convening of such extraordinary shareholders' general meeting within 10 days after it has received

the request. If the board of directors consents to convene an extraordinary general meeting or a class meeting, it shall give notice for such shareholders' general meeting within five days after it has so resolved. The consent of the concerned shareholders shall be obtained if any change is to be made to the request in the notice. If the board of directors refuses to convene an extraordinary general meeting or a class meeting, or it fails to give any feedback within 10 days after it has received the request, the shareholders who individually or in aggregate hold not less 10% of the Company's shares shall have the right to request in writing the supervisory committee to convene the extraordinary general meeting or class meeting; and (ii) If the supervisory committee consents to convene the extraordinary general meeting or the class meeting, it shall give the notice for such shareholders' general meeting within five days after it has received the request. The consent of the concerned shareholders shall be obtained if any change is to be made to the request in the notice. If the supervisory committee fails to give notice of convening the shareholders' general meeting within the provided time limit, the supervisory committee shall be deemed to have failed to convene and preside the shareholders' general meeting, and the shareholders who individually or in aggregate hold not less than 10% of the Company's shares for more than 90 consecutive days may at their own discretion convene and preside such a meeting.

The general meeting may authorize the board of directors to carry out matters on their behalf, with clear and specific authorization. For authorization of a matter that requiring an ordinary resolution, an ordinary resolution of the shareholders' general meeting shall be passed by affirmative votes representing at least 50% of the voting rights represented by the shareholders (including shareholders' proxies) present at the meeting. For authorization of a matter that requiring a special resolution, a special resolution of the shareholders' general meeting shall be passed by affirmative votes representing at least two-thirds of the voting rights represented by the shareholders (including shareholders' proxies) present at the meeting.

Special Procedures for Voting by a Class of Shareholders and Modification of Rights

In addition to holders of other classes of shares, the holders of the domestic-invested shares and holders of overseas-listed foreign-invested shares shall be deemed to be holders of different classes of shares. Rights conferred on any class of shareholders ("class rights") may not be varied or abrogated save with the approval of a special resolution of shareholders at a general meeting and by the class shareholders affected at a separate meeting. Article 96 set forth the circumstances which shall be deemed to be variation or abrogation of the rights attaching to a particular class of shares, including but not limited to increasing or decreasing the number of shares of that class, reducing or removing preferential rights attached to shares of that class to receive dividends or the distribution of assets in the event that the Company is liquidated, etc. Shareholders of the affected class, whether or not otherwise having the right to vote at shareholders' general meetings, have the right to vote at class meetings in respect of certain matters listed in Article 96, but interested shareholder(s) shall not be entitled to vote at such class meetings. Resolutions of a class meeting shall be passed by votes representing two-thirds or more of the voting rights of shareholders of that class present at the relevant meeting who are entitled to vote. Written notice of a class meeting shall be given to all shareholders who are registered as holders of that class in the register of shareholders 45 days before the date of the class meeting. A shareholder who intends to attend the class meeting shall deliver his written reply in respect thereof to the Company 20 days before the date of the class meeting. The special procedures for approval by separate class shareholders shall not apply to the circumstances where the Company issues, upon the approval by a special resolution of its shareholders at a general meeting, either separately or concurrently once every 12 months, not more than 20% of each of its existing issued Domestic-Invested Shares and Overseas-Listed Foreign-Invested Shares.

Share Capital

The Company must have ordinary shares at all times. Subject to the applicable government approvals, the Company may create different classes of shares. Each share of the same class shall carry the same rights and the same benefits. The Company may, based on its operating and development needs, authorize the increase in its capital pursuant to the Articles of Association. The Company may increase its capital by public or non-public offering of shares; by allotting bonus shares to its existing shareholders; by converting common reserve fund into

share capital; by any other means which is stipulated by law and administrative regulation and approved the relevant government authorities. Unless otherwise stipulated in the relevant laws or administrative regulations, shares of the Company shall be freely transferable and are not subject to any lien. Domestic-invested shares and overseas-listed foreign-invested shares shall be purchased, sold, donated, inherited and charged on in accordance with the PRC laws and the Company's Articles of Association. The Company may not accept its own shares as the subject matter of a pledge. Subject to certain conditions, the Company has the power to sell the shares of a shareholder who is untraceable and retain the payment. According to the procedures provided in the Company's Articles of Association, the Company may reduce its registered capital. The Company may, in accordance with the procedures set out in the Company's Articles of Association and with the approval of the relevant governing authorities, repurchase its issued shares under certain circumstances. The repurchase may be made by a general offer, stock exchange, off-market agreement, etc. The Company must obtain prior approval of the shareholders in a general meeting (in the manner stipulated in the Company's Articles of Association) before it can repurchase shares outside of the stock exchange by means of an off-market agreement.

Material Contracts

In the two years proceeding the date of this report, 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 annual report.

Foreign Exchange Regulation

Currently, RMB is not a freely convertible currency. Exchange and remittance of foreign currencies in China are subject to the supervision of the PRC government's foreign exchange administrative agencies, such as through filings and/or approval requirements. We maintain a portion of cash and cash equivalents in foreign currencies in the course of our international business, while we receive most of our revenues in RMB. We convert foreign currencies from time to time to meet our foreign currency obligations, including repayment of foreign currency denominated debt, payment of overseas capital expenditures and equity investment, import of oil, gas, equipment and materials, and payment of dividends declared with respect to the H Shares. The requirements of the PRC government such as filings and approvals with respect to foreign exchange transactions may impose restrictions on our international business.

The PRC government has implemented a floating exchange rate system to allow the value of RMB to fluctuate within a regulated band based on market supply and demand and by reference to a basket of foreign currencies. Because a substantial part of our imports and our outbound investments are settled in foreign currencies, the exchange rates between RMB and U.S. dollars and any other relevant foreign currencies may have an effect on our purchase costs and our investment costs.

We are not aware of any other PRC laws, decrees or regulations that restrict the export or import of capital or that affect the remittance of dividends, interest or other payments to non-resident holders.

Taxation

The following discussion addresses the main PRC and United States federal income tax consequences of the ownership of H Shares or ADSs purchased held by the investor as capital assets.

PRC Taxation

Dividends and Individual Investors

Pursuant to the IIT Law, all foreign individuals are subject to a 20% withholding tax on dividends paid by a PRC company on its shares listed overseas, or Overseas Shares, unless specifically exempt by the financial authority of the State Council of the PRC. However, pursuant to the *Notice on the Collection of Individual Income Tax after the Abolishment of Guoshuifa [1993] No. 045*, or Circular 348, issued by the SAT on June 28, 2011, foreign individual shareholders holding H Shares, or individual H shareholders, in a PRC company listed in Hong Kong may be subject to different levels of withholding taxes on dividends based on the tax treaties of their home countries with China. Individual H shareholders, who are residents of Hong Kong or Macau or who enjoy a 10% tax rate on dividends based on the tax treaties of their home countries with China, are subject to a withholding tax rate of 10% with respect to the H Share dividends they receive. For those individual H shareholders whose home countries have tax treaties with China prescribing a tax rate on dividends lower than 10%, the PRC company, whose shares are held by such individual H shareholders, needs to make tax filings on behalf of the individual H shareholders in order for them to enjoy such tax treatment. For individual H shareholders whose home countries have tax treaties with China prescribing a tax rate on dividends between 10% and 20%, the PRC company, whose shares are held by such individual H shareholders, shall withhold the individual income tax at the agreed-upon tax rate. For individual H shareholders whose home countries have no tax treaties with China or whose home countries have tax treaties with China prescribing a tax rate on dividends higher than 20%, the PRC company shall withhold the tax at a rate of 20%.

Dividends and Foreign Enterprises

Pursuant to the *EIT Law* and the implementing rules thereunder, the *Circular on Issues Concerning the Withholding of Corporate Income Tax by PRC Resident Enterprises from Dividends Payable to H Share Non-resident Corporate Shareholders*, and the *Measures for the Administration of the Enjoyment by Non-residents of the Treatments under the Treaties*, when paying any of its H Share non-resident corporate shareholders any dividends, we withhold the corporate income tax from such dividends at a rate of 10%. For an H Share non-resident corporate shareholder whose home country has a tax treaty with China prescribing a tax rate on dividends lower than 10%, such H Share non-resident corporate shareholder may, by itself or through an agent or us, make filings with the competent taxation authority for the treatment under the applicable tax treaty and present the documents evidencing that such shareholder is qualified to be a beneficial owner as defined under the applicable tax treaty.

Tax Treaties

If you are a tax resident or citizen of a country that has entered into a double-taxation treaty with the PRC, you may be entitled to a reduction in the amount of tax withheld, if any, imposed on the payment of dividends. The PRC currently has such treaties with a number of countries, including, but not limited to, the United States, Australia, Canada, France, Germany, Japan, Malaysia, Singapore, the United Kingdom and the Netherlands.

Under certain treaties, the rate of withholding tax imposed by China's taxation authorities may be reduced. Pursuant to the *Measures for the Administration of the Enjoyment by Non-residents of the Treatments under Applicable Treaties* promulgated by the SAT on October 14, 2019, a non-PRC resident may apply the applicable benefit under tax treaties to him/herself when he/she makes tax filings or upon withholding by third parties and no prior approvals of the taxation authorities are required, if such non-PRC resident decides based on his/her own judgement that he/she is entitled to such benefits.

Capital Gains

The IIT Law provides for a capital gains tax of 20% on individuals. The *Provisions for Implementing the IIT Law*, provides that the measures to levy individual income tax on the gains realized on the sale of shares will be

made in the future by the MOF and subject to the approval of the State Council. However, the MOF has not so far promulgated a specific taxation method to levy tax on the capital gains realized by individual holders of H Shares or ADSs from sale of shares. If in the future such specific taxation method is promulgated, an individual holder of H Shares or ADSs may be subject to a 20% tax on capital gains under the IIT Law as amended from time to time, unless exempted or reduced by an applicable double taxation treaty or relevant PRC law or regulation.

Under the EIT Law, capital gains realized by foreign enterprises which are non-resident enterprises in the PRC upon the sale of Overseas Shares by PRC companies 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.

Shanghai-Hong Kong Stock Connect

In April 2014, China launched the Shanghai-Hong Kong Stock Connect Program, which is a cross-border investment channel that connects the SSE and the HKSE. Under the program, investors in each market are able to trade shares on the other market using their local brokers and clearing agencies. In accordance with the current PRC tax policies, foreign investors are temporarily exempt from income tax on capital gains derived from the trading of A Shares under the program and will be subject to a 10% withholding tax on the dividends received under the program. For a shareholder whose home country has tax treaty with China prescribing a tax rate on dividends lower than 10%, such shareholder may by itself or through an agent or the withholding agent, apply to the competent taxation authority for the treatment under the applicable tax treaty and present the documents evidencing that such shareholder is qualified to be a beneficial owner as defined under the applicable tax treaty.

Additional PRC Tax Considerations

Under the Provisional Regulations of the PRC Concerning the Stamp Duty, a stamp duty is not imposed by the PRC on the transfer of shares, such as the H Shares or ADSs, of PRC publicly traded companies that take place outside of China.

United States Federal Income Taxation

The following is a general discussion of the material United States federal income tax consequences of purchasing, owning and disposing of the H Shares or ADSs if you are a U.S. holder, as defined below, and hold the H Shares or ADSs as capital assets within the meaning of Section 1221 of the Internal Revenue Code of 1986, as amended, or the Code. This discussion does not address all of the tax consequences relating to the purchase, ownership and disposition of the H Shares or ADSs, and does not take into account U.S. holders who may be subject to special rules including:

- tax-exempt entities;
- banks, financial institutions, or certain insurance companies;
- broker-dealers;
- traders in securities that elect to mark to market;
- U.S. expatriates;
- U.S. holders liable for alternative minimum tax;
- U.S. holders that own (directly, indirectly, or constructively) 10% or more of the voting power or value of our equity;
- U.S. holders that hold as part of a straddle or a hedging or conversion transaction; or
- U.S. holders whose functional currency is not the U.S. dollar.

This discussion is based on the Code, its legislative history, final, temporary and proposed United States Treasury regulations promulgated thereunder, published rulings and court decisions as in effect on the date hereof, all of which are subject to change, or changes in interpretation, possibly with retroactive effect. In addition, this discussion is based in part upon representations of the depositary and the assumption that each obligation in the deposit agreement and any related agreements will be performed according to its terms.

You are a “U.S. holder” if you are:

- a citizen or resident of the United States for United States federal income tax purposes;
- a corporation, or other entity treated as a corporation for United States federal income tax purposes, created 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 subject to United States federal income tax without regard to its source; or
- a trust:
 - subject to the primary supervision of a United States court and the control of one or more United States persons; or
 - that has elected to be treated as a United States person under applicable United States Treasury regulations.

If a partnership (or other entity or arrangement treated as a partnership for United States federal income tax purposes) holds the H Shares or ADSs, the tax treatment of a partner generally will depend on the status of the partner and the activities of the partnership. If you are a partner of a partnership that holds the H Shares or ADSs, we urge you to consult your tax advisors regarding the consequences of the purchase, ownership and disposition of the H Shares or ADSs.

This discussion does not address any aspects of United States taxation other than federal income taxation.

We urge you to consult your tax advisors regarding the United States federal, state, local and non-United States tax consequences of the purchase, ownership and disposition of the H Shares or ADSs.

In general, for United States federal income tax purposes, U.S. holders who own ADSs (or American depositary receipts evidencing ADSs) will be treated as the beneficial owners of the H Shares represented by those ADSs. Accordingly, the surrender of ADSs in exchange for H Shares (or vice versa) will not result in the realization of gain or loss for United States federal income tax purposes. The following discussion assumes that we are not a passive foreign investment company, or PFIC, as discussed under “PFIC Rules” below.

Distributions on the H Shares or ADSs

The gross amount of any distribution (without reduction for any PRC tax withheld) we make on the H Shares or ADSs out of our current or accumulated earnings and profits (as determined for United States federal income tax purposes) will be includible in your gross income as dividend income when the distribution is actually or constructively received by you, in the case of the H Shares, or by the depositary in the case of ADSs. Distributions that exceed our current and accumulated earnings and profits will be treated as a return of capital to you to the extent of your tax basis in the H Shares or ADSs and thereafter as capital gains. 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 treated as a “dividend” for United States federal income tax purposes. Subject to certain limitations, dividends paid to non-corporate U.S. holders, including individuals, currently are eligible

for a reduced rate of taxation if we are deemed to be a “qualified foreign corporation” for United States federal income tax purposes. A qualified foreign corporation includes:

- a foreign corporation that is eligible for the benefits of a comprehensive income tax treaty with the United States that includes an exchange of information program; or
- a foreign corporation if its stock with respect to which a dividend is paid (or ADSs backed by such stock) is readily tradable on an established securities market within the United States (as determined for United States federal income tax purposes),

but does not include an otherwise qualified foreign corporation that is a PFIC in the taxable year that the dividend is paid or in the prior taxable year. We believe that we will be a qualified foreign corporation so long as we are not a PFIC and we are considered eligible for the benefits of the Agreement between the Government of the USA and the Government of the PRC for the Avoidance of Double Taxation and the Prevention of Tax Evasion with Respect to Taxes on Income, or the Treaty. Our status as a qualified foreign corporation, however, may change.

Any dividend will not be eligible for the dividends-received deduction generally allowed to United States corporations with respect to dividends received from United States corporations. The amount of any distribution of property other than cash will be the fair market value of such property on the date of such distribution.

If we make a distribution paid in HK dollars, you will be considered to have received the U.S. dollar value of the distribution determined at the spot HK dollar/ U.S. dollar rate on the date such distribution is received by you or by the depository, regardless of whether you or the depository convert the distribution into U.S. dollars. Any gain or loss resulting from currency exchange fluctuations during the period from the date the dividend payment is includible in your income to the date you or the depository convert the distribution into U.S. dollars will be treated as United States source ordinary income or loss for foreign tax credit limitation purposes.

Subject to various limitations, any PRC tax withheld from distributions in accordance with PRC law, as limited by the Treaty, as discussed under “—PRC Taxation,” will be deductible or creditable against your United States federal income tax liability. For foreign tax credit limitation purposes, dividends paid on the H Shares or ADSs will be foreign source income, and will be treated as “passive category income” or, in the case of some U.S. holders, “general category income.” You may not be able to claim a foreign tax credit (and instead may claim a deduction) for non-United States taxes imposed on dividends paid on the H Shares or ADSs if you (i) have held the H Shares or ADSs for less than a specified minimum period during which you are not protected from risk of loss with respect to such Shares, or (ii) are obligated to make payments related to the dividends (for example, pursuant to a short sale).

Sale, Exchange or Other Disposition

Upon a sale, exchange or other disposition of the H Shares or ADSs, you will recognize a capital gain or loss for United States federal income tax purposes in an amount equal to the difference between the U.S. dollar value of the amount realized and your tax basis, determined in U.S. dollars, in such H Shares or ADSs. Any gain or loss will generally be United States source gain or loss for foreign tax credit limitation purposes. Capital gain of certain non-corporate U.S. holders, including individuals, is generally taxed at a reduced rate where the property has been held more than one year. Your ability to deduct capital losses is subject to limitations. If any PRC tax is withheld from your gain on a sale, exchange or other disposition of H Shares or ADSs, as discussed under “—PRC Taxation,” such tax would only be creditable against your United States federal income tax liability to the extent that you have foreign source income. However, in the event that such PRC tax is withheld, a U.S. holder that is eligible for the benefits of the Treaty may be able to treat the gain as foreign source income for foreign tax credit satisfaction purposes. Pursuant to the United States Treasury regulations that apply to foreign income taxes paid or accrued in taxable years beginning on or after December 28, 2021, any such foreign income tax would generally not be eligible for a foreign tax credit unless there is a sufficient nexus between the foreign

country imposing the tax and the U.S. holder's activities. The United States Treasury regulations provide for an exception if the U.S. holder elected benefits under an applicable income tax treaty between the United States and the foreign country imposing the tax. Alternatively, the U.S. holder may take a deduction for foreign income taxes paid or accrued if the U.S. holder elects to deduct (rather than credit) all such taxes paid or accrued during the taxable year. You are urged to consult your tax advisors regarding the United States federal income tax consequences if PRC tax is withheld from your gain on the sale, exchange or other disposition of H Shares or ADSs, including the availability of a foreign tax credit under your particular circumstances.

If you are paid in a currency other than U.S. dollars, any gain or loss resulting from currency exchange fluctuations during the period from the date of the payment resulting from the sale, exchange or other disposition to the date you convert the payment into U.S. dollars will be treated as United States source ordinary income or loss for foreign tax credit limitation purposes.

PFIC Rules

In general, a foreign corporation is a PFIC for United States federal income tax purposes for any taxable year in which, after applying relevant look-through rules with respect to the income and assets of subsidiaries:

- 75% or more of its gross income consists of passive income, such as dividends, interest, rents and royalties; or
- 50% or more of the average quarterly value of its assets consists of assets that produce, or are held for the production of, passive income.

For this purpose, passive income generally includes dividends, interest, certain types of rents and royalties, annuities, net gains from the sale or exchange of property producing such income, net gains from commodity transactions, net foreign currency gains and net income from notional principal contracts. In addition, cash, cash equivalents, securities held for investment purposes, and certain other similar assets are generally categorized as passive assets.

We did not meet the PFIC tests in the taxable year ended December 31, 2022. We believe that we will not meet the PFIC tests in subsequent taxable years either and therefore we will not be treated as a PFIC for such periods. We must make a separate determination after the close of each taxable year as to whether we were a PFIC for that year. Accordingly, there can be no assurance that we will not be a PFIC in the current or subsequent taxable years.

If we were a PFIC in any taxable year that you held the H Shares or ADSs, you generally would be subject to special rules with respect to "excess distributions" made by us on the H Shares or ADSs and with respect to gain from your disposition of the H Shares or ADSs. An "excess distribution" generally is defined as the excess of the distributions you receive with respect to the H Shares or ADSs in any taxable year over 125% of the average annual distributions you have received from us during the shorter of the three preceding years or your holding period for the H Shares or ADSs. Generally, you would be required to allocate any excess distribution or gain from the disposition of the H Shares or ADSs ratably over your holding period for the H Shares or ADSs. The portion of the excess distribution or gain allocated to a prior taxable year, other than a year prior to the first year in which we became a PFIC, would be taxed at the highest United States federal income tax rate on ordinary income in effect for such taxable year, and you would be subject to an interest charge on the resulting tax liability, determined as if the tax liability had been due with respect to such particular taxable years. The portion of the excess distribution or gain that is not allocated to prior taxable years, together with the portion allocated to the years prior to the first year in which we became a PFIC, would be included in your gross income for the taxable year of the excess distribution or disposition and taxed as ordinary income.

The foregoing rules with respect to excess distributions and dispositions may be avoided or reduced if you are eligible for and timely make a valid "mark-to-market" election. If your H Shares or ADSs were treated as

shares regularly traded on a “qualified exchange” for United States federal income tax purposes and a valid and timely mark-to-market election was made, in calculating your taxable income for each taxable year, you generally would be required to take into account as ordinary income or loss the difference, if any, between the fair market value and the adjusted tax basis of your H Shares or ADSs at the end of your taxable year. However, the amount of loss you would be allowed is limited to the extent of the net amount of previously included income as a result of the mark-to-market election. The NYSE on which the ADSs were traded is a qualified exchange for United States federal income tax purposes.

Alternatively, a timely election to treat us as a qualified electing fund under Section 1295 of the Code could be made to avoid the foregoing rules with respect to excess distributions and dispositions. You should be aware, however, that if we become a PFIC, we do not intend to satisfy record keeping requirements that would permit you to make a qualified electing fund election.

If you own the H Shares or ADSs during any year that we are a PFIC, you must annually file Internal Revenue Service, or IRS, Form 8621 (or any other form subsequently specified by the United States Treasury Department), subject to certain exceptions based on the value of PFIC stock held. We encourage you to consult your own tax advisor concerning the United States federal income tax consequences of holding the H Shares or ADSs that would arise if we were considered a PFIC.

Backup Withholding and Information Reporting

In general, information reporting requirements will apply to dividends with respect to the H Shares or ADSs or the proceeds of the sale, exchange or other disposition of the H Shares or ADSs paid within the United States, and in some cases, outside of the United States, other than to various exempt recipients, including corporations. In addition, you may, under some circumstances, be subject to “backup withholding” with respect to dividends paid on the H Shares or ADSs or the proceeds of any sale, exchange or other disposition of the H Shares or ADSs, unless you:

- are a corporation or fall within various other exempt categories, and, when required, demonstrate this fact; or
- provide a correct taxpayer identification number on a properly completed IRS Form W-9 or a substitute form, certify that you are exempt from backup withholding and otherwise comply with applicable requirements of the backup withholding rules.

Backup withholding is not an additional tax. Any amount withheld under the backup withholding rules generally will be creditable against your United States federal income tax liability provided that you furnish the required information to the IRS in a timely manner and you may obtain a refund of any excess amounts withheld under the backup withholding rules by filing the appropriate claim for refund with the IRS in a timely manner and furnishing any required information. If you do not provide a correct taxpayer identification number you may be subject to penalties imposed by the IRS.

In addition, certain U.S. holders who are individuals that hold certain foreign financial assets (which may include the H Shares or ADSs) may be required to report information relating to such assets, subject to certain exceptions. You should consult your own tax advisors regarding the effect, if any, of this requirement on your ownership and disposition of the H Shares or ADSs.

Documents on Display

You may find our annual reports on Form 20-F, the exhibits and other documents filed with the SEC on its website www.sec.gov and our website www.petrochina.com.cn. Upon request, we will provide hardcopies of our annual report on Form 20-F to you free of charge.

The SEC allows us to “incorporate by reference” the information we file with the Commission. This means that we can disclose important information to you by referring you to another document filed separately with the Commission. The information incorporated by reference is considered to be part of this annual report on Form 20-F. 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.

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.

Annual Report to Security Holders

Our 2022 Annual Report as published on April 21, 2023 and submitted to the HKSE has been furnished to SEC in electronic format under a Form 6-K on the same day in accordance with the EDGAR filer Manual.

Item 11 — *QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK*

In the normal course of business, we hold or issue various financial instruments which expose us to interest rate and foreign exchange rate risks. We hedge part of the exchange rate risk through hedging instruments. Additionally, our operations are affected by certain commodity price movements. We use derivative instruments such as commodity futures, commodity swaps and commodity options for hedging some price risks efficiently. We regard an effective market risk management system as an important element of our treasury function and are currently enhancing our systems. A primary objective of our market risk management is to implement certain methodologies to better measure and monitor risk exposures.

The following discussions and tables, which constitute “forward-looking statements” that involve risks and uncertainties, summarize our market-sensitive financial instruments including fair value, maturity and contract terms. Such discussions address market risk only and do not present other risks which we face in the normal course of business.

Interest Rate Risk

Our interest risk exposure arises from changing interest rates. The tables below provide information about our financial instruments including various debt obligations that are sensitive to changes in interest rates. The tables present principal cash flows and related weighted-average interest rates at expected maturity dates. Weighted-average variable rates are based on effective rates as of December 31, 2020, 2021 and 2022. The information is presented in RMB equivalents, our reporting currency.

Foreign Exchange Rate Risk

We conduct our business primarily in RMB. However, a portion of our RMB revenues are converted into other currencies to be used in foreign investment and trading, to meet foreign currency financial instrument obligations and to pay for imported oil, gas, equipment and other materials. Foreign currency payments for imported oil and gas represented 21.6%, 22.1% and 25.1% of our total purchases, services and other expenses in 2020, 2021 and 2022, respectively. These are the main foreign exchange payments of our company.

RMB is not a freely convertible currency. Limitation in foreign exchange transactions imposed by the PRC government could cause future exchange rates to vary significantly from current or historical exchange rates.

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The tables below provide information about our financial instruments including foreign currency denominated debt instruments that are sensitive to foreign currency exchange rates. The tables below summarize such information by presenting principal cash flows and related weighted-average interest rates at expected maturity dates in RMB equivalents, using the exchange rates in effect on December 31, 2022.

December 31, 2022

	Expected Maturity Date						Percentage to Total Long-Term Borrowings	Fair Value	
	2023	2024	2025	2026	2027	Thereafter			Total
(RMB equivalent in millions, except percentages)									
Long term debt									
Loans in RMB									
Fixed Rate Loan	1,954	4,224	14,086	115	3,807	1,744	25,930	9.11%	25,000
Average Interest Rate	3.89%	2.58%	4.20%	3.85%	2.35%	3.57%	—	—	—
Variable Rate Loan	28,679	61,162	8,099	2,661	535	10,058	111,194	39.05%	106,953
Average Interest Rate	2.51%	3.00%	3.30%	2.82%	3.86%	3.70%	—	—	—
Loans in Euro									
Fixed Rate Loan	—	—	—	—	—	118	118	0.04%	86
Average Interest Rate	2.00%	—	—	—	—	0.10%	—	—	—
Variable Rate Loan	—	—	3,526	—	—	—	3,526	1.24%	3,398
Average Interest Rate	—	—	1.18%	—	—	—	—	—	—
Loans in US\$									
Fixed Rate Loan	9	9	9	9	9	3,556	3,601	1.26%	2,818
Average Interest Rate	—	—	—	—	—	2.13%	—	—	—
Variable Rate Loan	6,619	7,870	46,823	1,194	—	10	62,516	21.96%	59,629
Average Interest Rate	1.76%	1.41%	4.33%	3.61%	—	5.41%	—	—	—
Loans in Japanese Yen									
Fixed Rate Loan	3	2	2	2	—	—	9	0.00%	7
Average Interest Rate	2.10%	2.10%	2.10%	2.10%	—	—	—	—	—
Variable Rate Loan	—	—	—	—	—	—	—	—	—
Average Interest Rate	—	—	—	—	—	—	—	—	—
Debentures in US\$									
Fixed Rate Debentures	—	—	3,468	—	—	—	3,468	1.22%	3,402
Average Interest Rate	—	—	3.75%	—	—	—	—	—	—
Debentures in RMB									
Fixed Rate Debentures	4,000	—	—	9,000	2,000	—	15,000	5.27%	14,508
Average Interest Rate	4.88%	—	—	3.57%	5.04%	—	—	—	—
Medium Term Notes in RMB									
Fixed Rate Notes	21,000	35,880	2,500	—	—	—	59,380	20.85%	70,969
Average Interest Rate	2.42%	3.59%	2.20%	—	—	—	—	—	—
Total	62,264	109,147	78,513	12,981	6,351	15,486	284,742	100%	286,770

See “Item 3 — Key Information — Risk Factors — Risks Related to Pricing and Exchange Rate”.

Commodity Price Risk

We are engaged in a wide range of petroleum-related activities and purchase certain quantity of oil from the international market to meet our demands. The prices of crude oil and refined products in the international market are affected by various factors such as changes in global and regional politics and economy, the demand and supply of crude oil and refined products, as well as unexpected events and disputes with international repercussions. The domestic crude oil price is determined with reference to the international price of crude oil.

whereby the domestic refined oil prices adjust with changes in crude oil prices in the international market. We use derivative instruments such as commodity futures, commodity swaps and commodity forwards to hedge some commodity price risks. We have strict internal control requirements with respect to the purpose, types, holding volumes of any derivative instruments as against the inventories, and the transaction process of the derivatives. For a sensitive analysis, please refer to Note 4 to the financial Statements.

See Note 4 to our financial statements and “Item 3 — Key Information — Risk Factors — Risks Related to Pricing and Exchange Rate”.

Item 12 — DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

Fees paid by our ADS holders

BNYM, the depositary of our ADR program, collects its fees for delivery and surrender of ADSs directly from investors depositing shares or surrendering ADSs for the purpose of withdrawal or from intermediaries acting for them. The depositary collects fees for making distributions to investors by deducting those fees from the amounts distributed or by selling a portion of distributable property to pay the fees. The depositary may refuse to deliver ADSs or the deposited shares or provide any distributions until its fees for those services are paid.

Persons Depositing or Withdrawing Shares Must Pay:

\$5.00 (or less) per 100 ADSs (or portion thereof)

\$0.05 (or less) per ADS (or portion thereof)

\$0.05 (or less) per ADS per calendar year

A fee equivalent to the fee that would be payable if securities distributed to you had been shares and the shares had been deposited for issuance of ADSs

Registration or transfer fees

Expenses of the depositary

For:

Issuance of ADSs, including issuances resulting from a distribution of shares or rights or other property

Cancellation of ADSs for the purpose of withdrawal, including if the deposit agreement terminates

Any cash distribution to ADS holders

Depositary services

Distribution of securities distributed to holders of deposited securities which are distributed by the depositary to ADS holders

Transfer and registration of shares on our share register to or from the name of the depositary or its agent when you deposit or withdraw shares

Cable, telex and facsimile transmissions (when expressly provided in the deposit agreement)

Converting foreign currency to U.S. dollars

Persons Depositing or Withdrawing Shares Must Pay:**For:**

Taxes and other governmental charges the depositary or the custodian have to pay on any ADS or share underlying an ADS, for example, stock transfer taxes, stamp duty or withholding taxes	As necessary
--	--------------

Any charges incurred by the depositary or its agents for servicing the deposited securities	As necessary
---	--------------

Fees and Payments from the Depositary to Us

In the year ended December 31, 2022, we did not receive any payment from the depositary.

PART II

Item 13 — *DEFAULTS, DIVIDENDS ARREARAGES AND DELINQUENCIES*

None.

Item 14— *MATERIAL MODIFICATIONS TO THE RIGHTS TO SECURITY HOLDERS AND USE OF PROCEEDS*

None.

Item 15 — *CONTROLS AND PROCEDURES*

Evaluation of the Management on Disclosure Controls and Procedures

Our chairman, president and CFO, after evaluating the effectiveness of our disclosure controls and procedures (as defined in the United States Exchange Act Rules 13a-15(e) and 15d(e)) as of the end of the period covered by this annual report, have concluded that, as of such date, our disclosure controls and procedures were effective to ensure that material information required to be disclosed in the reports that we file and furnish under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and regulations and that such information is accumulated and communicated to our management, including our chairman, president and CFO, as appropriate, to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Exchange Act Rules 13a-15(f). Under the supervision and with the participation of our management, including our chairman, president and CFO, our company evaluated the effectiveness of its internal control over financial reporting based on criteria established in the framework in *Internal Control — Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, our management has concluded that our internal control over financial reporting was effective as of December 31, 2022.

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 and procedures may deteriorate.

The effectiveness of our internal control over financial reporting as of December 31, 2022 has been audited by PricewaterhouseCoopers Zhong Tian LLP ("PwC"), our independent registered public accountant. Please refer to PwC's Opinions on the Financial Statements and Internal Control over Financial Reporting.

Changes in Internal Control over Financial Reporting

During the year ended December 31, 2022, there were 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 16A — *AUDIT COMMITTEE FINANCIAL EXPERT*

Our audit committee is composed of two INEDs, Mr. Cai Jinyong and Mr. Jiang, Simon X., and one non-executive director, Mr. Xie Jun. See "Item 6 — Directors, Senior Management and Employees — Board Practices — Audit Committee". Mr. Cai Jinyong, our INED, has been confirmed as a "financial expert" as defined in Item 16A of Form 20-F.

Item 16B — CODE OF ETHICS

We adopted our code of business conduct and ethics for senior management on March 23, 2004 and our code of business conduct and ethics for employees on March 2, 2005 and have disclosed the content of both codes on our website.

These two Codes of Ethics may be accessed as follows:

1. From our main web page, first click on “Investor Relations”.
2. Next, click on “Corporate Governance Structure”.
3. Finally, click on “Code of Ethics for Senior Management” or “Code of Ethics for Employees of PetroChina Company Limited”.

This 20-F also includes both of the codes as exhibit 11.1 and 11.2.

Item 16C — PRINCIPAL ACCOUNTANT FEES AND SERVICES

PwC served as our independent accountant for the fiscal year of 2021 and 2022. The office of PwC is located at 11/F, PricewaterhouseCoopers Center, 2 Corporate Avenue, 202 Hu Bin Road, Huangpu District, Shanghai 200021, China.

The following table presents the aggregate fees paid by us (not including our subsidiaries) for professional audit services, tax and other services rendered by PwC to us for the years ended December 31, 2021 and 2022, respectively.

	2021	2022
	RMB in millions	
Audit fees	47	47
Audit-related fees	—	—
Tax fees	—	—
All other fees	—	—
Total	47	47

The remuneration above did not include fees paid by our subsidiaries to PwC and its network firms. For 2022, our subsidiaries paid a total of RMB39 million to PwC and its network firms which primarily included audit fees of RMB35 million, tax fees of RMB1 million, and other service fees of RMB3 million.

For 2021, our subsidiaries paid a total of RMB41 million to PwC and its network firms which primarily included audit fees of RMB34 million, audit-related fees of RMB2 million, tax fees of RMB2 million, and other service fees of RMB3 million.

See Note 7 to our financial statements prepared in accordance with IFRS included elsewhere in this annual report for detailed information about auditor’s remuneration.

Audit Committee Pre-approved Policies and Procedures

Currently, all services to be provided by our independent registered public accountant must be pre-approved by our audit committee.

During the year ended December 31, 2022, services relating to all non-audit related fees provided to us by PwC were approved by our audit committee in accordance with the de minimis exception to the pre-approval requirement provided by paragraph (c)(7)(i)(C) of Rule 2-01 of Regulation S-X.

Item 16D — EXEMPTIONS FROM LISTING STANDARDS FOR AUDIT COMMITTEES

Not applicable.

Item 16E — PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

None.

Item 16F — CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT

None.

Item 16G — CORPORATE GOVERNANCE

Not applicable.

Item 16H — MINE SAFETY DISCLOSURE

Not applicable.

Item 16I — DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS.

On May 26, 2022, following our filing with the SEC on April 29, 2022 of our annual report on 20-F for the year ended December 31, 2021, the SEC identified us as a "Commission-Identified Issuer" pursuant to the HFCAA and the rules of the SEC implementing the HFCAA. We were so identified because the PCAOB had reported to the SEC on December 16, 2021 that it had been unable to completely inspect or investigate audit firms in the mainland of China and Hong Kong, including PwC, our independent auditor, because of the positions taken by authorities in the mainland of China and Hong Kong. On December 15, 2022, the PCAOB reported to the SEC that it had been able to secure complete access to inspect and investigate the audit firms in the mainland of China and Hong Kong and therefore it vacated its previous determinations to the contrary.

As of March 31, 2023, CNPC held 82.62% of our shares and it holds a controlling financial interest in us. CNPC is directly owned by the SASAC. Please see "Item 4 — Information on the Company — Our Corporate Organization Structure".

For those directors who are CPC members, please see the biographies under "Item 6 — Directors, Senior Management and Employees — Directors, Senior Management and Supervisors".

Article 8 and Article 105 in our Articles of Association are in connection with the charter of the CPC. Please refer to our Articles of Association filed as Exhibit 1.1 to this annual report on Form 20-F.

PART III

Item 17— **FINANCIAL STATEMENTS**

We have elected to provide the financial statements and related information specified in Item 18 in lieu of Item 17.

Item 18 — **FINANCIAL STATEMENTS**

See page F-pages following Item 19.

Item 19 — **EXHIBITS**

(a) See Item 18 for a list of the financial statements as part of this annual report.

(b) Exhibits to this annual report.

Exhibit Number	Description of Exhibits
1.1	Articles of Association (as amended on June 9, 2022) (English translation) ⁽³⁾
2.1*	A description of rights of each class of securities registered under Section 12 of the Securities Exchange Act of 1934
4.1	Non-competition Agreement between CNPC and PetroChina (English translation) ⁽¹⁾
4.2	Trademark Licensing Contract between CNPC and PetroChina (English translation) ⁽¹⁾
4.3	Patent and Proprietary Technology Licensing Contract between CNPC and PetroChina (English translation) ⁽¹⁾
4.4	Computer Software Licensing Contract between CNPC and PetroChina (English translation) ⁽¹⁾
4.5	Contract for Transfer of Rights under Production Sharing Contracts between CNPC and PetroChina (English translation) ⁽¹⁾
4.6	Contract for the Supervision of Certain Sales Enterprises between CNPC and PetroChina (English translation) ⁽¹⁾
4.7	Comprehensive Products and Services Agreement, dated August 27, 2020, between CNPC and PetroChina (English translation) ⁽⁴⁾
4.8	Letter of Confirmation regarding the Land Use Rights Lease Agreement and Building Lease Agreement, dated August 27, 2020, between CNPC and PetroChina (English translation) ⁽⁴⁾
4.9	Production and Operation Agreement between PipeChina and PetroChina (English Translation) ⁽⁴⁾
8.1*	List of major subsidiaries
11.1	Code of Ethics for Senior Management ⁽²⁾
11.2	Code of Ethics for Employees ⁽²⁾
12.1*	Certification of Chairman required by Section 302 of the Sarbanes-Oxley Act of 2002
12.2*	Certification of President required by Section 302 of the Sarbanes-Oxley Act of 2002
12.3*	Certification of CFO required by Section 302 of the Sarbanes-Oxley Act of 2002
13.1**	Certification of Chairman required by 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

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<u>Exhibit Number</u>	<u>Description of Exhibits</u>
13.2**	Certification of President required by 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
13.3**	Certification of CFO required by 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
15.1*	Reserves Report of DeGolyer and MacNaughton for 2022
15.2*	Reserves Audit Report of DeGolyer and MacNaughton for 2022
15.3*	Reserves Report of Ryder Scott for 2022
15.4*	Reserves Report of GLJ Petroleum Consultants for 2022
15.5*	Reserves Report of McDaniel & Associates Consultants, Ltd. for 2022
15.6*	Consent letter of KWM, as PRC counsel
15.7*	Consent letter of KWM, as HK counsel
101.INS*	Inline XBRL Instance Document—the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
101.SCH*	Inline XBRL Taxonomy Extension Schema Document
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	Inline XBRL Taxonomy Extension Labels Linkbase Document
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document — the cover page XBRL tags are embedded within the Exhibit 101 Inline XBRL
104*	CoverPage Interactive Data File (embedded within the Inline XBRL document)
* Filed as exhibits to this Form 20-F.	
** Furnished as exhibits to this Form 20-F.	
(1)	Paper filing; incorporated into this annual report by reference to our Registration Statement on Form F-1 (File No. 333-11566) filed with the Commission, as declared effective on March 29, 2000.
(2)	Incorporated into this annual report by reference to the exhibits to Form 20-F for the fiscal year ended December 31, 2004 (File No. 1-15006).
(3)	Incorporated into this annual report by reference to Exhibit 99.2 to Form 6-K (File No. 1-15006) furnished to the Commission on June 10, 2022.
(4)	Incorporated into this annual report by reference to the exhibits to Form 20-F for the fiscal year ended December 31, 2020 (File No. 1-15006).

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.

Very truly yours,

/s/ WANG Hua

Name: WANG Hua

Title: CFO and Secretary to Board of Directors

Date: April 28, 2023

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Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
PetroChina Company Limited:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated statements of comprehensive income, cash flows and changes in equity of PetroChina Company Limited and subsidiaries (the “Company”) for the year ended December 31, 2020, and the related notes (collectively, the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the results of operations of the Company and its cash flows for the year ended December 31, 2020, in conformity with International Financial Reporting Standards as issued by International Accounting Standards Board.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on these consolidated financial statements based on our audit. 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audit 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 audit 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. We believe that our audit provides a reasonable basis for our opinion.

/s/ KPMG Huazhen LLP

We served as the Company’s auditor from 2013 to 2021.

Beijing, China
April 29, 2021

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of PetroChina Company Limited

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated statement of financial position of PetroChina Company Limited and its subsidiaries (the “Company”) as of December 31, 2022 and December 31, 2021, and the related consolidated statements of comprehensive income, changes in equity and cash flows for each of the two years in the period ended December 31, 2022, 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, 2022, 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, 2022 and December 31, 2021, and the results of its operation and its cash flow for each of the two years in the period ended December 31, 2022 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, 2022, 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 the accompanying Management’s 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.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Recoverability of the carrying amount of oil and gas properties

As described in Note 5 and 16 to the consolidated financial statements, the net book value of oil and gas properties as included in property, plant and equipment amounted to RMB 832,610 million as at 31 December 2022, and impairment loss of RMB 14,750 million was recorded for the year ended 31 December 2022. Uncertainty in future oil prices, future production costs, changes in operating conditions and the economic outlook gave rise to possible indicators that the carrying amount of the oil and gas properties as at December 31, 2022 might be impaired. Management has adopted value in use as the respective recoverable amounts of oil and gas properties, which involved key estimations or assumptions related to future crude oil prices, future costs, future production volumes and discount rates.

The principal considerations for our determination that performing procedures relating to recoverability of the carrying amount of oil and gas properties is a critical audit matter are the significance of the carrying amount of oil and gas properties as at 31 December 2022, together with the significant estimates and judgements by management in the use of key estimates or assumptions in determining recoverable amounts for oil and gas properties. We had placed our audit emphasis on this matter.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included obtaining an understanding of the management's internal control and assessment process of impairment of oil and gas properties and evaluating and testing the key controls relating to the determination of recoverable amounts of oil and gas properties. These procedures also included assessing the appropriateness of the method used to determine recoverable amounts, including the methodology adopted in the discounted cash flow projections, testing mathematical accuracy of the projections, and the completeness, accuracy, and relevance of underlying data used in the projections. Evaluating the significant assumptions relating to the key assumptions in discounted cash flow projections will involve (i) comparing estimates of future crude oil prices adopted by the management against a range of published crude oil price forecasts, (ii) comparing the future cost profiles against historical costs or relevant budgets of the management or relevant industry data, (iii) comparing the future production profiles

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against the oil and gas reserve estimation report approved by the management, evaluating the competence, capability and objectivity of the management's experts engaged in estimating the oil and gas reserves, and assessing key estimations or assumptions used in the reserve estimation, by reference to historical data, management plans and/or relevant industry data. Professionals with specialized skill and knowledge were used to assist in the evaluation of the appropriateness of discount rates adopted by the management.

/s/ PricewaterhouseCoopers Zhong Tian LLP
Shanghai, the People's Republic of China
April 28, 2023

We have served as the Company's auditor since 2021.

PETROCHINA COMPANY LIMITED
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
For the Years Ended December 31, 2022, 2021 and 2020
(Amounts in millions, except for the per share data)

	Notes	2022 RMB	2021 RMB	2020 RMB
REVENUE	6	3,239,167	2,614,349	1,933,836
OPERATING EXPENSES				
Purchases, services and other		(2,213,080)	(1,770,019)	(1,267,797)
Employee compensation costs	8	(163,073)	(154,835)	(147,604)
Exploration expenses, including exploratory dry holes		(27,074)	(24,248)	(19,333)
Depreciation, depletion and amortization		(238,036)	(231,269)	(213,875)
Selling, general and administrative expenses		(59,529)	(57,802)	(64,345)
Taxes other than income taxes	9	(278,055)	(228,003)	(195,850)
Other (expense)/ income, net		(43,660)	12,980	50,905
TOTAL OPERATING EXPENSES		<u>(3,022,507)</u>	<u>(2,453,196)</u>	<u>(1,857,899)</u>
PROFIT FROM OPERATIONS		<u>216,660</u>	<u>161,153</u>	<u>75,937</u>
FINANCE COSTS				
Exchange gain		23,772	13,377	14,387
Exchange loss		(25,590)	(12,839)	(14,279)
Interest income		4,738	2,984	3,023
Interest expense	10	(21,554)	(19,739)	(26,528)
TOTAL NET FINANCE COSTS		<u>(18,634)</u>	<u>(16,217)</u>	<u>(23,397)</u>
SHARE OF PROFIT OF ASSOCIATES AND JOINT VENTURES		<u>15,251</u>	<u>13,267</u>	<u>3,533</u>
PROFIT BEFORE INCOME TAX EXPENSE	7	<u>213,277</u>	<u>158,203</u>	<u>56,073</u>
INCOME TAX EXPENSE	12	<u>(49,295)</u>	<u>(43,507)</u>	<u>(22,588)</u>
PROFIT FOR THE YEAR		<u>163,982</u>	<u>114,696</u>	<u>33,485</u>
OTHER COMPREHENSIVE INCOME				
Item that will not be reclassified to profit or loss				
Fair value changes in equity investment measured at fair value through other comprehensive income		(116)	232	113
Currency translation differences		6,201	(2,045)	(6,893)
Items that are or may be reclassified subsequently to profit or loss				
Gains on cash flow hedges		11,273	—	—
Share of the other comprehensive income of associates and joint ventures accounted for using the equity method		654	(4)	(441)
Currency translation differences		3,758	(2,684)	(3,909)
OTHER COMPREHENSIVE INCOME, NET OF TAX		<u>21,770</u>	<u>(4,501)</u>	<u>(11,130)</u>
TOTAL COMPREHENSIVE INCOME FOR THE YEAR		<u>185,752</u>	<u>110,195</u>	<u>22,355</u>
PROFIT FOR THE YEAR ATTRIBUTABLE TO:				
Owners of the Company	13	149,380	92,170	19,006
Non-controlling interests		14,602	22,526	14,479
		<u>163,982</u>	<u>114,696</u>	<u>33,485</u>
TOTAL COMPREHENSIVE INCOME FOR THE YEAR ATTRIBUTABLE TO:				
Owners of the Company		165,050	89,561	14,634
Non-controlling interests		20,702	20,634	7,721
		<u>185,752</u>	<u>110,195</u>	<u>22,355</u>
BASIC AND DILUTED EARNINGS PER SHARE ATTRIBUTABLE TO OWNERS OF THE COMPANY(RMB)	14	<u>0.82</u>	<u>0.50</u>	<u>0.10</u>

The accompanying notes are an integral part of these financial statements.

PETROCHINA COMPANY LIMITED
CONSOLIDATED STATEMENTS OF FINANCIAL POSITION
As of December 31, 2022 and 2021
(Amounts in millions)

	<u>Notes</u>	<u>December 31, 2022</u> RMB	<u>December 31, 2021</u> RMB
NON-CURRENT ASSETS			
Property, plant and equipment	16	1,492,513	1,459,296
Investments in associates and joint ventures	17	269,569	265,785
Equity investments measured at fair value through other comprehensive income	18	943	1,168
Right-of-use assets	20	203,065	208,606
Intangible and other non-current assets	21	69,813	66,344
Deferred tax assets	33	19,699	12,161
Time deposits with maturities over one year		4,016	8,064
TOTAL NON-CURRENT ASSETS		2,059,618	2,021,424
CURRENT ASSETS			
Inventories	22	167,751	143,848
Accounts receivable	23	72,028	52,746
Derivative financial instruments	24	21,133	3,913
Prepayments and other current assets	25	119,654	112,820
Financial assets at fair value through other comprehensive income	26	4,376	3,975
Financial assets at fair value through profit or loss		3,876	—
Time deposits with maturities over three months but within one year		33,859	26,747
Cash and cash equivalents	27	191,190	136,789
TOTAL CURRENT ASSETS		613,867	480,838

PETROCHINA COMPANY LIMITED
CONSOLIDATED STATEMENTS OF FINANCIAL POSITION — (CONTINUED)
As of December 31, 2022 and 2021
(Amounts in millions)

	<u>Notes</u>	<u>December 31, 2022</u> RMB	<u>December 31, 2021</u> RMB
CURRENT LIABILITIES			
Accounts payable and accrued liabilities	28	372,369	299,121
Contract liabilities	29	77,337	78,481
Income taxes payable		16,471	9,915
Other taxes payable		37,043	66,859
Short-term borrowings	30	100,639	53,275
Derivative financial instruments	24	11,146	3,881
Lease liabilities	20	7,560	6,626
Financial liabilities at fair value through profit or loss		1,698	—
TOTAL CURRENT LIABILITIES		624,263	518,158
NET CURRENT LIABILITIES		(10,396)	(37,320)
TOTAL ASSETS LESS CURRENT LIABILITIES		2,049,222	1,984,104
EQUITY			
EQUITY ATTRIBUTABLE TO OWNERS OF THE COMPANY:			
Share capital	31	183,021	183,021
Retained earnings		853,585	771,980
Reserves	32	332,721	308,560
TOTAL EQUITY ATTRIBUTABLE TO OWNERS OF THE COMPANY		1,369,327	1,263,561
NON-CONTROLLING INTERESTS		168,526	145,308
TOTAL EQUITY		1,537,853	1,408,869
NON-CURRENT LIABILITIES			
Long-term borrowings	30	222,478	287,175
Asset retirement obligations	34	142,081	129,405
Lease liabilities	20	118,200	123,222
Deferred tax liabilities	33	21,016	26,638
Other long-term obligations		7,594	8,795
TOTAL NON-CURRENT LIABILITIES		511,369	575,235
TOTAL EQUITY AND NON-CURRENT LIABILITIES		2,049,222	1,984,104

The accompanying notes are an integral part of these financial statements.

PETROCHINA COMPANY LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the Years Ended December 31, 2022, 2021 and 2020
(Amounts in millions)

	2022 RMB	2021 RMB	2020 RMB
CASH FLOWS FROM OPERATING ACTIVITIES			
Profit for the year	163,982	114,696	33,485
Adjustments for:			
Income tax expense	49,295	43,507	22,588
Depreciation, depletion and amortization	238,036	231,269	213,875
Capitalized exploratory costs charged to expense	14,118	12,557	8,934
Safety fund reserve	(691)	(1,750)	(1,505)
Share of profit of associates and joint ventures	(15,251)	(13,267)	(3,533)
Accrual of provision for impairment of receivables, net	1,625	415	343
Write down in inventories, net	8,567	580	8,151
Impairment of other non-current assets	4,653	465	—
Loss on disposal and scrap of property, plant and equipment	20,726	18,959	5,398
(Gain)/loss on disposal and scrap of other non-current assets	(479)	587	(1,142)
Loss/(gain) on disposal of subsidiaries	185	(3,575)	(1,242)
Gain on Pipeline restructuring	—	(18,320)	(46,946)
Fair value loss	2,464	—	—
Dividend income	(15)	(17)	(25)
Interest income	(4,738)	(2,984)	(3,023)
Interest expense	21,554	19,739	26,528
Changes in working capital:			
Accounts receivable, prepayments and other current assets	(20,127)	(8,265)	14,751
Inventories	(32,470)	(15,889)	43,645
Accounts payable and accrued liabilities	7,504	2,251	8,410
Contract liabilities	(1,144)	(12,996)	8,987
CASH FLOWS GENERATED FROM OPERATIONS	457,794	367,962	337,679
Income taxes paid	(64,026)	(26,493)	(19,104)
NET CASH FLOWS FROM OPERATING ACTIVITIES	393,768	341,469	318,575

The accompanying notes are an integral part of these financial statements.

PETROCHINA COMPANY LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS — (CONTINUED)
For the Years Ended December 31, 2022, 2021 and 2020
(Amounts in millions)

	2022	2021	2020
	RMB	RMB	RMB
CASH FLOWS FROM INVESTING ACTIVITIES			
Capital expenditures	(243,349)	(261,617)	(248,376)
Acquisition of investments in associates and joint ventures	(1,396)	(387)	(2,599)
Prepayments on long-term leases	—	—	(3,048)
Acquisition of intangible assets and other non-current assets	(1,524)	(3,946)	(5,303)
Acquisition of subsidiaries	(460)	(1,822)	(1,947)
Acquisition of financial assets at fair value through profit or loss	(2,830)	—	—
Proceeds from disposal of property, plant and equipment	(364)	2,746	1,195
Proceeds from disposal of other non-current assets	2,830	4,183	2,224
Proceeds from Pipeline restructuring	3,445	31,074	80,621
Interest received	3,001	2,836	2,532
Dividends received	10,740	12,274	4,778
(Increase)/decrease in time deposits with maturities over three months	(3,064)	1,627	(12,063)
NET CASH FLOWS USED FOR INVESTING ACTIVITIES	(232,971)	(213,032)	(181,986)
CASH FLOWS FROM FINANCING ACTIVITIES			
Repayments of short-term borrowings	(800,692)	(758,307)	(797,892)
Repayments of long-term borrowings	(90,637)	(78,127)	(219,770)
Repayments of lease liabilities	(12,730)	(13,016)	(12,794)
Interest paid	(12,298)	(12,821)	(16,700)
Dividends paid to non-controlling interests	(9,547)	(16,508)	(14,264)
Dividends paid to owners of the Company	(54,686)	(39,866)	(28,078)
Cash paid to acquire non-controlling interests	—	(22)	(2)
Increase in short-term borrowings	784,049	681,258	751,157
Increase in long-term borrowings	82,299	128,834	238,335
Cash contribution from non-controlling interests	529	673	613
Capital reduction in subsidiaries paid to non-controlling interests	—	(69)	(5)
NET CASH FLOWS USED FOR FINANCING ACTIVITIES	(113,713)	(107,971)	(99,400)
TRANSLATION OF FOREIGN CURRENCY	7,317	(2,308)	(4,967)
Increase in cash and cash equivalents	54,401	18,158	32,222
Cash and cash equivalents at beginning of the year	136,789	118,631	86,409
Cash and cash equivalents at end of the year	191,190	136,789	118,631

The accompanying notes are an integral part of these financial statements.

PETROCHINA COMPANY LIMITED
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
For the Years Ended December 31, 2022, 2021 and 2020
(Amounts in millions)

	Attributable to owners of the Company				Non-controlling Interests	Total Equity
	Share Capital	Retained Earnings	Reserves	Subtotal		
	RMB	RMB	RMB	RMB	RMB	RMB
Balance at January 1, 2020	183,021	743,124	304,011	1,230,156	214,149	1,444,305
Profit for the year ended December 31, 2020	—	19,006	—	19,006	14,479	33,485
Other comprehensive income for the year ended December 31, 2020	—	—	(4,372)	(4,372)	(6,758)	(11,130)
Special reserve-safety fund reserve	—	—	(1,633)	(1,633)	128	(1,505)
Transfer to reserves	—	(6,275)	6,275	—	—	—
Dividends	—	(28,078)	—	(28,078)	(14,827)	(42,905)
Transaction with non-controlling interests in subsidiaries	—	—	—	—	(2)	(2)
Capital contribution from non-controlling interests	—	—	2	2	823	825
Pipeline restructuring	—	—	—	—	(57,425)	(57,425)
Acquisition of subsidiaries	—	—	1	1	1,186	1,187
Disposal of subsidiaries	—	—	—	—	(489)	(489)
Other	—	178	(102)	76	199	275
Balance at December 31, 2020	183,021	727,955	304,182	1,215,158	151,463	1,366,621
Balance at January 1, 2021	183,021	727,955	304,182	1,215,158	151,463	1,366,621
Profit for the year ended December 31, 2021	—	92,170	—	92,170	22,526	114,696
Other comprehensive income for the year ended December 31, 2021	—	—	(2,609)	(2,609)	(1,892)	(4,501)
Special reserve-safety fund reserve	—	—	(1,579)	(1,579)	(171)	(1,750)
Transfer to reserves	—	(8,413)	8,413	—	—	—
Dividends	—	(39,866)	—	(39,866)	(15,975)	(55,841)
Transaction with non-controlling interests in subsidiaries	—	—	(15)	(15)	(19)	(34)
Capital contribution from non-controlling interests	—	—	—	—	1,059	1,059
Acquisition of subsidiaries	—	—	—	—	769	769
Disposal of subsidiaries	—	—	—	—	(12,380)	(12,380)
Other	—	134	168	302	(72)	230
Balance at December 31, 2021	183,021	771,980	308,560	1,263,561	145,308	1,408,869
Balance at January 1, 2022	183,021	771,980	308,560	1,263,561	145,308	1,408,869
Profit for the year ended December 31, 2022	—	149,380	—	149,380	14,602	163,982
Other comprehensive income for the year ended December 31, 2022	—	—	15,670	15,670	6,100	21,770
Special reserve-safety fund reserve	—	—	(741)	(741)	50	(691)
Transfer to reserves	—	(12,987)	12,987	—	—	—
Dividends	—	(54,686)	—	(54,686)	(9,709)	(64,395)
Capital contribution from non-controlling interests	—	—	3	3	11,125	11,128
Acquisition of subsidiaries	—	—	—	—	634	634
Disposal of subsidiaries	—	—	—	—	7	7
Other	—	(102)	(3,758)	(3,860)	409	(3,451)
Balance at December 31, 2022	183,021	853,585	332,721	1,369,327	168,526	1,537,853

The accompanying notes are an integral part of these financial statements.

PETROCHINA COMPANY LIMITED
NOTES TO THE FINANCIAL STATEMENTS
(All amounts in millions, except for the per share data and otherwise stated)

1 ORGANIZATION AND PRINCIPAL ACTIVITIES

PetroChina Company Limited (the “Company”) was established as a joint stock company with limited liability on November 5, 1999 by 中国石油天然气集团公司 (China National Petroleum Corporation (“CNPC”)) as the sole proprietor in accordance with the approval Guo Jing Mao Qi Gai [1999] No. 1024 “Reply on the approval of the establishment of PetroChina Company Limited” from the former State Economic and Trade Commission of the People’s Republic of China (“China” or “PRC”). CNPC restructured (“the Restructuring”) and injected its core business and the related assets and liabilities into the Company. 中国石油天然气集团公司 was renamed 中国石油天然气集团有限公司 (CNPC before and after the change of name) on December 19, 2017. CNPC is a wholly state-owned company registered in China. The Company and its subsidiaries are collectively referred to as the “Group”.

The Group is principally engaged in (i) the exploration, development, transportation and production and marketing of crude oil and natural gas, and new energy business; (ii) the refining of crude oil and petroleum products, production and marketing of primary petrochemical products, derivative petrochemical products and other chemical products, and new materials business; (iii) the marketing of refined products and non-oil products, and trading business; and (iv) the transportation and the sale of natural gas (Note 40).

2 BASIS OF PREPARATION

The consolidated financial statements of the Group have been prepared in accordance with the International Financial Reporting Standards (“IFRSs”) as issued by the International Accounting Standards Board (“IASB”). These financial statements also comply with the disclosure requirements of the Hong Kong Companies Ordinance and the applicable disclosure provisions of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited. A number of new or amended standards became applicable for the current reporting period. The Group did not have to change its accounting policies or make retrospective adjustments as a result of adopting these new or amended standards. The consolidated financial statements and the statement of financial position of the Company have been prepared under the historical cost convention except as disclosed in the accounting policies below.

The preparation of financial statements in conformity with IFRSs requires the use of estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the statement of financial position and the reported amounts of revenues and expenses during the reporting period. Although these estimates are based on management’s best knowledge of current events and actions, actual results may ultimately differ from those estimates. The areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements are disclosed in Note 5.

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

The IASB has issued the following amendments to IFRSs that are first effective for the current accounting period of the Group:

- Rent Concessions Extension of the practical expedient — Amendments to IFRS 16
- Reference to the Conceptual Framework — Amendments to IFRS 3
- Property, Plant and Equipment: Proceeds before Intended Use — Amendments to IAS 16
- Onerous Contracts — Cost of Fulfilling a Contract — Amendments to IAS 37
- Annual Improvements to IFRS Standards 2018-2020

PETROCHINA COMPANY LIMITED
NOTES TO THE FINANCIAL STATEMENTS — (Continued)
(All amounts in millions, except for the per share data and otherwise stated)

These amendments listed above have no material impact on the Group for the December 31, 2022 reporting period.

(b) New and amended standards and interpretations not yet adopted by the Group

Certain new accounting standards, amendments to accounting standards and interpretations have been published that are not mandatory for the December 31, 2022 reporting period and have not been early adopted by the Group. These standards, amendments or interpretations are not expected to have a material impact on the Group in the current or future reporting periods and on foreseeable future transactions.

3 SUMMARY OF PRINCIPAL ACCOUNTING POLICIES

(a) Basis of consolidation

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to, or has right to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

A subsidiary is consolidated from the date on which control is transferred to the Group and is no longer consolidated from the date that control ceases. The Group accounts for business combinations (except for business combination under common control) using the acquisition method when the acquired set of activities and assets meets the definition of a business and control is transferred to the Group. In determining whether a particular set of activities and assets is a business, the Group assesses whether the set of assets and activities acquired includes, at a minimum, an input and substantive process and whether the acquired set has the ability to produce outputs. The Group has an option to apply a 'concentration test' that permits a simplified assessment of whether an acquired set of activities and assets is not a business. The optional concentration test is met if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or group of similar identifiable assets. The consideration transferred for the acquisition of a subsidiary is the fair values of the assets transferred, the liabilities incurred and the equity interests issued by the Group. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. Acquisition-related costs are expensed as incurred. Identifiable assets acquired and liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. Contingent liabilities assumed in a business combination are recognized in the acquisition accounting if they are present obligations and their fair value can be measured reliably. On an acquisition-by-acquisition basis, the Group recognizes any non-controlling interests in the acquiree either at fair value or at the non-controlling interests' proportionate share of the acquiree's net assets.

The excess of the consideration transferred, the amount of any non-controlling interests in the acquiree and the acquisition-date fair value of any previous equity interest in the acquiree over the fair value of the identifiable net assets is recorded as goodwill. If this is less than the fair value of the net assets of the subsidiary acquired in the case of a bargain purchase, the difference is recognized directly in the consolidated statement of comprehensive income.

An acquisition of a business which is a business combination under common control is accounted for in a manner similar to a uniting of interests whereby the assets and liabilities acquired are accounted for at carryover predecessor values to the other party to the business combination with all periods presented as if the operations of the Group and the business acquired have always been combined. The difference between the consideration paid by the Group and the net assets or liabilities of the business acquired is adjusted against equity.

PETROCHINA COMPANY LIMITED
NOTES TO THE FINANCIAL STATEMENTS — (Continued)
(All amounts in millions, except for the per share data and otherwise stated)

Intercompany transactions, balances and unrealized gains on transactions between group companies are eliminated. Unrealized losses are eliminated in the same way as unrealized gains, but only to the extent that there is no evidence of impairment. Where necessary, accounting policies of subsidiaries have been changed to ensure consistency with the policies adopted by the Group.

For purpose of the presentation of the Company's statement of financial position, investments in subsidiaries are accounted for at cost less impairment.

A listing of the Group's principal subsidiaries is set out in Note 19.

(b) Investments in associates

Associates are entities over which the Group has significant influence but not control, generally accompanying a shareholding of between 20% and 50% of the voting rights. Investments in associates are accounted for by the equity method of accounting in the consolidated financial statements of the Group and are initially recognized at cost.

Under this method of accounting, the Group's share of the post-acquisition profits or losses of associates is recognized in profit or loss and its share of post-acquisition movements in other comprehensive income is recognized in other comprehensive income. The cumulative post-acquisition movements are adjusted against the carrying amounts of the investments. When the Group's share of losses in an associate equals or exceeds its interest in the associate, including any other unsecured receivables, the Group does not recognize further losses, unless it has incurred obligations or made payments on behalf of the associate.

Unrealized gains on transactions between the Group and its associates are eliminated to the extent of the Group's interest in the associates; unrealized losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. The Group's investment in associates includes goodwill identified on acquisition, net of any accumulated impairment loss and is tested for impairment as part of the overall balance. Goodwill represents the excess of the cost of an acquisition over the fair value of the Group's share of the fair value of net identifiable assets of the acquired associate at the date of acquisition. Accounting policies of associates have been changed where necessary to ensure consistency with the policies adopted by the Group. The gain or loss resulting from a downstream transaction involving assets that constitute a business, as defined in IFRS 3, between the Group and its associate or joint venture is recognized in full in the consolidated financial statement.

A listing of the Group's principal associates is shown in Note 17.

(c) Investments in joint ventures

Joint ventures are arrangements in which the Group with one or more parties have joint control, whereby the Group has rights to the net assets of the arrangements, rather than rights to their assets and obligations for their liabilities. The Group's interests in joint ventures are accounted for by the equity method of accounting (Note 3(b)) in the consolidated financial statements.

A listing of the Group's principal joint ventures is shown in Note 17.

(d) Investments in joint operations

A joint operation is a joint arrangement whereby the Group and other joint operators that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement.

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The Group recognises items related to its interest in a joint operation as follows:

- its assets, including its share of any assets held jointly;
- its liabilities, including its share of liabilities incurred jointly;
- its revenue from the sale of its share of the output arising from the joint operation;
- its share of the revenue from the sale of the output by the joint operation; and
- its expenses, including its share of any expenses incurred jointly.

(e) Transactions with non-controlling interests

Transactions with non-controlling interests are treated as transactions with owners in their capacity as owners of the Group. Gains and losses resulting from disposals to non-controlling interests are recorded in equity. The differences between any consideration paid and the relevant share of the carrying value of net assets of the subsidiary acquired resulting from the purchase of non-controlling interests, are recorded in equity.

When the Group ceases to have control or significant influence, any retained interest in the entity is remeasured to its fair value, with the change in carrying amount recognized in profit or loss. The fair value is the initial carrying amount for the purposes of subsequently accounting for the retained interest as an associate, joint venture or financial asset. In addition, any amounts previously recognized in other comprehensive income in respect of that entity are accounted for as if the Group had directly disposed of the related assets or liabilities. The amounts previously recognized in other comprehensive income are reclassified to profit or loss.

If the ownership interest in an associate is reduced but significant influence is retained, only a proportionate share of the amounts previously recognized in other comprehensive income are reclassified to profit or loss where appropriate.

(f) Foreign currencies

Items included in the financial statements of each entity in the Group are measured using the currency of the primary economic environment in which the entity operates ("the functional currency"). Most assets and operations of the Group are located in the PRC (Note 40), and the functional currency of the Company and most of the consolidated subsidiaries is the Renminbi ("RMB"). The consolidated financial statements are presented in the presentation currency of RMB.

Foreign currency transactions of the Group are accounted for at the exchange rates prevailing at the respective dates of the transactions; monetary assets and liabilities denominated in foreign currencies are translated at exchange rates at the date of the statement of financial position; gains and losses resulting from the settlement of such transactions and from the translation of monetary assets and liabilities are recognized in profit or loss.

For the Group entities that have a functional currency different from the Group's presentation currency, assets and liabilities for each statement of financial position presented are translated at the closing rate at the date of the statement of financial position. Income and expenses for each statement of comprehensive income presented are translated at the average exchange rates for each period and the resulting exchange differences are recognized in other comprehensive income.

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(g) Property, plant and equipment

Property, plant and equipment, including oil and gas properties (Note 3(h)), are initially recorded in the consolidated statement of financial position at cost if it is probable that they will generate future economic benefits. Cost represents the purchase price of the asset and other costs incurred to bring the asset into intended use. Subsequent to their initial recognition, property, plant and equipment are carried at cost less accumulated depreciation, depletion and amortization (including any impairment).

Depreciation, to write off the cost of each asset, other than oil and gas properties (Note 3(h)), to their residual values over their estimated useful lives is calculated using the straight-line method.

The Group uses the following estimated useful lives, estimated residual value ratios and annual depreciation rates for depreciation purposes:

	Estimated useful lives	Estimated residual value ratio %	Annual depreciation rate %
Buildings	8 to 40 years	5	2.4 to 11.9
Equipment and Machinery	4 to 30 years	3 to 5	3.2 to 24.3
Motor Vehicles	4 to 14 years	5	6.8 to 23.8
Other	5 to 12 years	5	7.9 to 19.0

No depreciation is provided on construction in progress until the assets are completed and ready for use.

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

Property, plant and equipment, including oil and gas properties (Note 3(h)), are reviewed for possible impairment when events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the carrying amount of a cash-generating unit exceeds the higher of its fair value less costs to sell and its value in use. Value in use is the estimated net present value of future cash flows to be derived from the cash-generating unit.

Gains and losses on disposals of property, plant and equipment are determined by reference to their carrying amounts and are recorded in profit or loss.

Interest and other costs on borrowings to finance the construction of property, plant and equipment, including oil and gas properties (Note 3(h)), are capitalized during the period of time that is required to complete and prepare the asset for its intended use. Costs for repairs and maintenance activities are expensed as incurred except for costs of components that result in improvements or betterments which are capitalized as part of property, plant and equipment and depreciated over their useful lives.

(h) Oil and gas properties

The successful efforts method of accounting is used for oil and gas exploration and production activities. Under this method, all costs for development wells, support equipment and facilities, and proved mineral interests in oil and gas properties are capitalized. Geological and geophysical costs are expensed when incurred. Costs of exploratory wells are capitalized pending determination of whether the wells find proved oil and gas reserves. Proved oil and gas reserves are the estimated quantities of crude oil and natural gas, which, by analysis

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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 the time at which 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. Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12-month period before the ending date of the period covered by the proved oil and gas reserve report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period unless prices are defined by contractual arrangements, excluding escalations based upon future conditions. The costs shall be that prevailing at the end of the period.

Exploratory wells in areas not requiring major capital expenditures are evaluated for economic viability within one year of completion of drilling. The related well costs are expensed as dry holes if it is determined that such economic viability is not attained. Otherwise, the related well costs are reclassified to oil and gas properties and are subject to impairment review (Note 3(g)). For exploratory wells that are found to have economically viable reserves in areas where major capital expenditure will be required before production can commence, the related well costs remain capitalized only if additional drilling is underway or firmly planned. Otherwise the related well costs are expensed as dry holes. The Group does not have any significant costs of unproved properties capitalized in oil and gas properties.

The Ministry of Natural Resources in China issues production licenses to applicants on the basis of the reserve reports approved by relevant authorities.

The cost of oil and gas properties is amortized at the field level based on the units of production method. Units of production rates are based on oil and gas reserves estimated to be recoverable from existing facilities based on the current terms of the Group's production licenses.

(i) Intangible assets and goodwill

Expenditures on acquired patents, trademarks, technical know-how and licenses are capitalized at historical cost and amortized using the straight-line method over their estimated useful lives. Intangible assets are not subsequently revalued. The carrying amount of each intangible asset is reviewed and adjusted for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized whenever the carrying amount of an intangible asset exceeds its recoverable amount and is recognized in profit or loss. The recoverable amount is measured as the higher of fair value less costs to sell and value in use. Value in use is the estimated net present value of future cash flows to be derived from the asset.

Goodwill arises on the acquisition of subsidiaries and represents the excess of the consideration transferred over the net fair value of identifiable assets, liabilities and contingent liabilities of the acquiree and the amount of any non-controlling interests in the acquiree.

Goodwill impairment reviews are undertaken annually or more frequently if events or changes in circumstances indicate a potential impairment. An impairment loss is recognized if the carrying amount of the cash-generating unit containing goodwill exceeds its recoverable amount. Impairment losses are allocated first to reduce the carrying amount of any goodwill allocated to the cash-generating unit, and then to reduce the carrying amounts of the other assets in the cash-generating unit on a pro rata basis. Any impairment is recognized immediately as an expense and is not subsequently reversed.

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(j) Financial instruments

(a) Recognition and initial measurement

Accounts receivable and debt securities issued are initially recognised when they are originated. All other financial assets and financial liabilities are initially recognised when the Group becomes a party to the contractual provisions of the instrument.

A financial asset (unless it is a accounts receivable without a significant financing component) or financial liability is initially measured at fair value plus or minus, for an item not at Fair value through profit or loss (“FVTPL”), transaction costs that are directly attributable to its acquisition or issue. An accounts receivable without a significant financing component is initially measured at the transaction price.

(b) Classification and subsequent measurement

On initial recognition, a financial asset is classified as measured at: amortised cost; Fair value through other comprehensive income (“FVOCI”) — debt investment; FVOCI — equity investment; or FVTPL.

Financial assets are not reclassified subsequent to their initial recognition unless the Group changes its business model for managing financial assets, in which case all affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

A financial asset is measured at amortised cost if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is to hold assets to collect contractual cashflows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

A debt investment is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

On initial recognition of an equity investment that is not held for trading, the Group may irrevocably elect to present subsequent changes in the investment’s fair value in OCI. This election is made on an investment-by-investment basis.

All financial assets not classified as measured at amortised cost or FVOCI as described above are measured at FVTPL. This includes all derivative financial assets.

The Group makes an assessment of the objective of the business model in which a financial asset is held at a portfolio level because this best reflects the way the business is managed and information is provided to management.

For the purposes of this assessment whether contractual cash flows are solely payments of principal and interest, “principal” is defined as the fair value of the financial asset on initial recognition. “Interest” is defined as

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consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and costs (e.g. liquidity risk and administrative costs), as well as a profit margin.

In assessing whether the contractual cash flows are solely payments of principal and interest, the Group considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition.

Detailed accounting policies for subsequent measurement of financial assets are set out below:

Financial assets at FVTPL	These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognised in profit or loss.
Financial assets at amortised cost	These assets are subsequently measured at amortised cost using the effective interest method. The amortised cost is reduced by impairment losses. Interest income, foreign exchange gains and losses and impairment are recognised in profit or loss. Any gain or loss on derecognition is recognised in profit or loss.
Debt investments at FVOCI	These assets are subsequently measured at fair value. Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment are recognised in profit or loss. Other net gains and losses are recognised in OCI. On derecognition, gains and losses accumulated in OCI are reclassified to profit or loss.
Equity investments at FVOCI	These assets are subsequently measured at fair value. Dividends are recognised as income in profit or loss unless the dividend clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognised in OCI and are never reclassified to profit or loss.

(c) Derecognition

Financial assets

The Group derecognises a financial asset when the contractual rights to the cash flows from the financial asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred or in which the Group neither transfers nor retains substantially all of the risks and rewards of ownership and it does not retain control of the financial asset.

The Group enters into transactions whereby it transfers assets recognised in its consolidated statement of financial position, but retains either all or substantially all of the risks and rewards of the transferred assets. In these cases, the transferred assets are not derecognised.

Financial liabilities

The Group derecognises a financial liability when its contractual obligations are discharged or cancelled, or expire. The Group also derecognises a financial liability when its terms are modified and the cash flows of the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognised at fair value.

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On derecognition of a financial liability, the difference between the carrying amount extinguished and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognised in profit or loss.

(d) Offsetting

Financial assets and financial liabilities are offset and the net amount presented in the consolidated statement of financial position when, and only when, the Group currently has a legally enforceable right to set off the amounts and it intends either to settle them on a net basis or to realise the asset and settle the liability simultaneously.

(e) Derivative financial instruments and hedge accounting

Derivative financial instruments are recognised initially at fair value. At each date of the statement of financial position, the fair value is remeasured. The gain or loss on remeasurement to fair value is recognised immediately in profit or loss, except where the derivatives qualify for hedge accounting.

Hedge accounting is a method which recognises 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 fair value or 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 fair value or cash flows are expected to offset changes in fair value or 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.

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 recognised asset or liability 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.

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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 recognised in other comprehensive income.

The portion of the gain or loss on the hedging instrument that is determined to be an ineffective hedge is recognised in profit or loss.

The amount that has been accumulated in the cash flow hedge reserve shall be accounted for as follows:

(i) 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 non-financial 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.

(ii) 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.

(iii) 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.

An entity shall discontinue hedge accounting prospectively only when the hedging relationship (or a part of a hedging relationship) ceases to meet the qualifying criteria such as situations as follows:

- (i) When the hedging relationship no longer meets the risk management objective on the basis of which it qualified for hedge accounting (i.e. the entity no longer pursues that risk management objective);
- (ii) When a hedging instrument expires or is sold, terminated, exercised;
- (iii) 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
- (iv) When the hedging relationship no longer meets other criteria for hedge accounting.

When an entity discontinues hedge accounting for a cash flow hedge, it shall account for the amount that has been accumulated in the cash flow hedge reserve as follows:

- (i) If the hedged future cash flows are still expected to occur, that amount shall remain in the cash flow hedge reserve and is accounted for as cash flow hedges.

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(ii) If the hedged future cash flows are no longer expected to occur, that amount shall be 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.

(k) Impairment for financial assets

The Group recognizes loss allowances for expected credit losses (“ECLs”) on:

- financial assets measured at amortized cost;
- debt investments measured at FVOCI; and
- contract assets.

The Group measures loss allowances at an amount equal to lifetime ECLs, except for the financial assets for which credit risk (i.e. the risk of default occurring over the expected life of the financial instrument) has not increased significantly since initial recognition, which are measured as 12-month ECLs. When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Group considers reasonable and supportable information that is relevant and available without undue cost or effort.

Loss allowances for accounts receivable are always measured at an amount equal to lifetime ECLs. The maximum period considered when estimating ECLs is the maximum contractual period over which the Group is exposed to credit risk.

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the Group in accordance with the contract and the cash flows that the Group expects to receive). ECLs are discounted at the effective interest rate of the financial asset.

At each reporting date, the Group assesses whether financial assets carried at amortized cost and debt securities at FVOCI are credit-impaired. A financial asset is ‘credit-impaired’ when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred.

Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets. Impairment losses on trade and other receivables are presented under ‘Selling, general and administrative expenses’, similar to the presentation under IAS 39.

The gross carrying amount of a financial asset is written off when the Group has no reasonable expectations of recovering a financial asset in its entirety or a portion thereof. For customers, the Group individually makes an assessment with respect to the timing and amount of write-off based on whether there is a reasonable expectation of recovery. The Group expects no significant recovery from the amount written off. However, financial assets that are written off could still be subject to enforcement activities in order to comply with the Group’s procedures for recovery of amounts due.

(l) Leases

(a) As a lessee

At commencement or on modification of a contract that contains a lease component, the Group allocates the consideration in the contract to each lease component on the basis of its relative stand-alone prices.

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The Group recognizes a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the end of the lease term, unless the lease transfers ownership of the underlying asset to the Group by the end of the lease term or the cost of the right-of-use asset reflects that the Group will exercise a purchase option. In that case the right-of-use asset will be depreciated over the useful life of the underlying asset, which is determined on the same basis as those of property and equipment. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Group's incremental borrowing rate. Generally, the Group uses its incremental borrowing rate as the discount rate.

Lease payments included in the measurement of the lease liability comprise the following:

- fixed payments, including in-substance fixed payments;
- variable lease payments that depend on an index or a rate, initially measured using the index or rate as at the commencement date;
- amounts expected to be payable under a residual value guarantee; and
- the exercise price under a purchase option that the Group is reasonably certain to exercise, lease payments in an optional renewal period if the Group is reasonably certain to exercise an extension option, and penalties for early termination of a lease unless the Group is reasonably certain not to terminate early.

The lease liability is measured at amortized cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, if there is a change in the Group's estimate of the amount expected to be payable under a residual value guarantee, if the Group changes its assessment of whether it will exercise a purchase, extension or termination option or if there is a revised in-substance fixed lease payment.

When the lease liability is remeasured in this way, a corresponding adjustment is made to the carrying amount of the right-of-use asset, or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

The Group present right-of-use assets and lease liabilities separately in the statement of financial position.

The Group has elected not to recognize right-of-use assets and lease liabilities for leases of low-value assets and short-term leases. The Group recognizes the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

Payments made to the Ministry of Natural Resources to secure land use rights (excluding mineral properties) are treated as leases.

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(b) As a lessor

At inception or on modification of a contract that contains a lease component, the Group allocates the consideration in the contract to each lease component on the basis of their relative stand-alone prices.

When the Group acts as a lessor, it determines at lease inception whether each lease is a finance lease or an operating lease.

To classify each lease, the Group makes an overall assessment of whether the lease transfers substantially all of the risks and rewards incidental to ownership of the underlying asset. If this is the case, then the lease is a finance lease; if not, then it is an operating lease. As part of this assessment, the Group considers certain indicators such as whether the lease is for the major part of the economic life of the asset. There are no significant finance lease for the Group.

If an arrangement contains lease and non-lease components, then the Group applies IFRS 15 to allocate the consideration in the contract.

The Group recognizes lease payments received under operating leases as income on a straight-line basis over the lease term as part of “other revenue”.

(m) Inventories

Inventories include oil products, chemical products and crude oil and other raw materials and supplies which are stated at the lower of cost and net realizable value. Cost is primarily determined by the weighted average cost method. The cost of finished goods comprises raw materials, direct labor, other direct costs and related production overheads, but excludes borrowing costs. Net realizable value is the estimated selling price in the ordinary course of business, less the cost of completion and directly attributable marketing and distribution costs.

(n) Contract costs

Contract costs are either the incremental costs of obtaining a contract with a customer or the costs to fulfil a contract with a customer which are not capitalized as inventory (Note 3(m)), property, plant and equipment (Note 3(g)), oil and gas properties (Note 3(h)) or intangible assets (Note 3(i)).

Incremental costs of obtaining a contract are those costs that the Group incurs to obtain a contract with a customer that it would not have incurred if the contract had not been obtained. Incremental costs of obtaining a contract are capitalized when incurred if the costs relate to revenue which will be recognized in a future reporting period and the costs are expected to be recovered, unless the expected amortization period is one year or less from the date of initial recognition of the asset, in which case the costs are expensed when incurred. Other costs of obtaining a contract are expensed when incurred.

Costs to fulfil a contract are capitalized if the costs relate directly to an existing contract or to a specifically identifiable anticipated contract; generate or enhance resources that will be used to provide goods or services in the future; and are expected to be recovered.

Capitalized contract costs are stated at cost less accumulated amortization and impairment losses. Impairment losses are recognized to the extent that the carrying amount of the contract cost asset exceeds the net of (i) remaining amount of consideration that the Group expects to receive in exchange for the goods or services to which the asset relates, less (ii) any costs that relate directly to providing those goods or services that have not yet been recognized as expenses.

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Amortization of capitalized contract costs is charged to profit or loss when the revenue to which the asset relates is recognized.

(o) Contract assets and contract liabilities

A contract asset is recognized when the Group recognizes revenue before being unconditionally entitled to the consideration under the payment terms set out in the contract. Contract assets are assessed for ECLs in accordance with the policy set out in Note 3(k) and are reclassified to receivables when the right to the consideration has become unconditional (Note 3(p)).

A contract liability is recognized when the customer pays consideration before the Group recognizes the related revenue. A contract liability would also be recognized if the Group has an unconditional right to receive consideration before the Group recognizes the related revenue. In such cases, a corresponding receivable would also be recognized (Note 3(p)).

When the contract includes a significant financing component, the contract balance includes interest accrued under the effective interest method (Note 3(u)).

(p) Accounts receivable

Accounts receivable are recognized when the Group has an unconditional right to receive consideration. A right to receive consideration is unconditional if only the passage of time is required before payment of that consideration is due (Note 3(o)).

Receivables are stated at amortized cost using the effective interest method less allowance for credit losses (Note 3(k)).

(q) Cash and cash equivalents

Cash and cash equivalents comprise cash in hand, deposits held with banks and highly liquid investments with original maturities of three months or less from the time of purchase.

(r) Accounts payable

Accounts payable are recognized initially at fair value and subsequently measured at amortized cost unless the effect of discounting would be immaterial, in which case they are stated at cost.

(s) Borrowings

Borrowings are recognized initially at fair value, net of transaction costs incurred. In subsequent periods, borrowings are stated at amortized cost using the effective interest method.

General and specific borrowing costs directly attributable to the acquisition, construction or production of qualifying assets, which are assets that necessarily take a substantial period of time to get ready for their intended use or sale, are added to the cost of those assets, until such time as the assets are substantially ready for their intended use or sale.

All other borrowing costs are recognized in profit or loss in the period in which they are incurred.

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Borrowings are classified as current liabilities unless the Group has unconditional rights to defer settlements of the liabilities for at least 12 months after the reporting period.

(t) Share capital

Incremental costs directly attributable to the issue of ordinary shares are recognized as a deduction from equity. Income tax relating to transaction costs of an equity transaction is accounted for in accordance with IAS 12 “Income Taxes”.

(u) Interest income and interest expense

Interest income or expense is recognized using the effective interest method.

The “effective interest rate” is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument to:

- the gross carrying amount of the financial asset; or
- the amortized cost of the financial liability.

In calculating interest income and expense, the effective interest rate is applied to the gross carrying amount of the asset (when the asset is not credit-impaired) or to the amortized cost of the liability. However, for financial assets that have become credit-impaired subsequent to initial recognition, interest income is calculated by applying the effective interest rate to the amortized cost of the financial asset. If the asset is no longer credit-impaired, then the calculation of interest income reverts to the gross basis.

(v) Taxation

Income tax expense comprises current and deferred tax. It is recognized in profit or loss except to the extent that it relates to a business combination, or items recognized directly in equity or in other comprehensive income.

The Group has determined that interest and penalties related to income taxes, including uncertain tax treatments, do not meet the definition of income taxes, and therefore accounted for them under IAS 37 “Provisions, Contingent Liabilities and Contingent Assets”.

(a) Current tax

Current tax comprises the expected tax payable or receivable on the taxable income or loss for the year and any adjustment to the tax payable or receivable in respect of previous years. The amount of current tax payable or receivable is the best estimate of the tax amount expected to be paid or received that reflects uncertainty related to income taxes, if any. It is measured using tax rates enacted or substantively enacted at the reporting date. Current tax also includes any tax arising from dividends.

Current tax assets and liabilities are offset only if certain criteria are met.

(b) Deferred tax

Deferred tax is provided in full, using the liability method, for temporary differences arising between the tax bases of assets and liabilities and their carrying values in the financial statements. However, deferred tax is not

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accounted for if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss. Deferred tax is determined using tax rates that have been enacted or substantively enacted by the date of the statement of financial position and are expected to apply to the period when the related deferred tax asset is realized or deferred tax liability is settled, and reflects uncertainty related to income taxes, if any.

The principal temporary differences arise from depreciation on oil and gas properties and equipment and provision for impairment of receivables, inventories, investments and property, plant and equipment. Deferred tax assets relating to the carry forward of unused tax losses and deductible temporary differences are recognized to the extent that it is probable that future taxable income will be available against which they can be used.

(c) Taxes other than income tax

The Group also incurs various other taxes and levies that are not income taxes. "Taxes other than income taxes", which form part of operating expenses, primarily comprise consumption tax (Note 9), resource tax (Note 9), crude oil special gain levy (Note 9), urban construction tax and education surcharges.

(w) Revenue recognition

Income is classified by the Group as revenue when it arises from the the sale of crude oil, natural gas, refined products, chemical products, non-oil products, etc., and the provision of services in the ordinary course of the Group's business.

Revenue is recognized when control over a product or service is transferred to the customer at the amount of promised consideration to which the Group is expected to be entitled, excluding those amounts collected on behalf of third parties. Revenue excludes value added tax or other sales taxes and is after deduction of any trade discounts.

Where the contract contains a financing component more than 12 months, interest income is accrued or interest expense is accrued separately under the effective interest method. The Group does not adjust the consideration for any effects of a significant financing component if the period of financing is 12 months or less.

(x) Provisions

Provisions are recognized when the Group has present legal or constructive obligations as a result of past events, it is probable that an outflow of resources will be required to settle the obligations, and reliable estimates of the amounts can be made.

Provision for future decommissioning and restoration is recognized in full on the installation of oil and gas properties. The amount recognized is the present value of the estimated future expenditure determined in accordance with local conditions and requirements. A corresponding addition to the related oil and gas properties of an amount equivalent to the provision is also created. This is subsequently depreciated as part of the costs of the oil and gas properties. Any change in the present value of the estimated expenditure other than due to passage of time which is regarded as interest expense, is reflected as an adjustment to the provision and oil and gas properties. Due to technological progress, legal requirements or changes in the market environment, changes in the provisions caused by changes in the amount of expenditure, estimated time of retirement obligations, discount rate, etc., may occur in fulfilling the retirement obligation. For an increase in provisions, the cost of oil and gas properties will be increased accordingly; for a decrease in provisions, the cost of oil and gas properties

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will be deducted within the limit of the carrying amount of assets related to decommissioning expenses. If a decrease in the provision exceeds the carrying amount of the oil and gas properties recognized corresponding to the provision, the excess shall be recognized immediately in profit or loss.

Provision for onerous contracts is measured at the present value of the lower of the expected cost of terminating the contract and the expected net cost of continuing with the contract. Before a provision is established, the Group recognizes any impairment loss on the assets associated with that contract.

(y) Research and development

Research expenditure incurred is recognized as an expense. Costs incurred on development projects are recognized as intangible assets to the extent that such expenditure is expected to generate future economic benefits.

(z) Retirement benefit plans

The Group contributes to various employee retirement benefit plans organized by PRC municipal and provincial governments under which it is required to make monthly contributions to these plans at prescribed rates for its employees in China. The relevant PRC municipal and provincial governments undertake to assume the retirement benefit obligations of existing and future retired employees of the Group in China. The Group has similar retirement benefit plans for its employees in its overseas operations. Contributions to these PRC and overseas plans ("defined contribution plan") are charged to expense as incurred. In addition, the Group joined the corporate annuity plan approved by relevant PRC authorities. Contribution to the annuity plan is charged to expense as incurred. The Group currently has no additional material obligations outstanding for the payment of retirement and other post-retirement benefits of employees in the PRC or overseas other than what described above.

(aa) Related parties

(a) A person, or a close member of that person's family, is related to the Group if that person:

- (i) has control or joint control over the Group;
- (ii) has significant influence over the Group; or
- (iii) is a member of the key management personnel of the Group or the Group's parent.

(b) An entity is related to the Group if any of the following conditions applies:

(i) The entity and the Group are members of the same group (which means that each parent, subsidiary and fellow subsidiary is related to the others).

(ii) One entity is an associate or joint venture of the other entity (or an associate or joint venture of a member of a group of which the other entity is a member).

(iii) Both entities are joint ventures of the same third party.

(iv) One entity is a joint venture of a third entity and the other entity is an associate of the third entity.

(v) The entity is a post-employment benefit plan for the benefit of employees of either the Group or an entity related to the Group.

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(vi) The entity is controlled or jointly controlled by a person identified in (a).

(vii) A person identified in (a)(i) has significant influence over the entity or is a member of the key management personnel of the entity (or of a parent of the entity).

(viii) The entity, or any member of a group of which it is a part, provides key management personnel services to the Group or to the Group's parent.

Close members of the family of a person are those family members who may be expected to influence, or be influenced by, that person in their dealings with the entity.

4 FINANCIAL RISK AND CAPITAL MANAGEMENT

4.1 Financial risk factors

The Group's activities expose it to a variety of financial risks, including market risk, credit risk and liquidity risk.

(a) Market risk

Market risk is the possibility that changes in foreign exchange rates, interest rates and the prices of oil and gas products will adversely affect the value of assets, liabilities and expected future cash flows.

(i) Foreign exchange risk

The Group conducts its domestic business primarily in RMB, but maintains a portion of its assets in other currencies to pay for imported crude oil, natural gas, imported equipment and other materials and to meet foreign currency financial liabilities. The Group is exposed to currency risks arising from fluctuations in various foreign currency exchange rates against the RMB. The RMB is not a freely convertible currency and is regulated by the PRC government. Limitations on foreign exchange transactions imposed by the PRC government could cause future exchange rates to vary significantly from current or historical exchange rates.

Additionally, the Group operates internationally and foreign exchange risk arises from future acquisitions and commercial transactions, recognized assets and liabilities and net investments in foreign operations. Certain entities in the Group might use currency derivatives to manage such foreign exchange risk.

(ii) Interest rate risk

The Group has no significant interest rate risk on interest-bearing assets. The Group's exposure to interest rate risk arises from its borrowings. The Group's borrowings at floating rates expose the Group to cash flow interest rate risk and its borrowings at fixed rates expose the Group to fair value interest rate risk. However, the exposure to interest rate risk is not material to the Group. A detailed analysis of the Group's borrowings, together with their respective interest rates and maturity dates, is included in Note 30.

(iii) Price risk

The Group is engaged in a wide range of oil and gas products-related activities. Prices of oil and gas products are affected by a wide range of global and domestic factors which are beyond the control of the Group. The fluctuations in such prices may have favorable or unfavorable impacts on the Group.

The Group uses derivative financial instruments, including commodity futures, commodity swaps and commodity forwards, to hedge some price risks efficiently.

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As at 31 December 2022, the Group had certain commodity contracts of crude oil, refined oil products and chemical products designated as hedges. As at 31 December 2022, the fair value of such derivative hedging financial instruments is derivative financial assets of RMB 20,988 (2021: RMB 3,913) and derivative financial liabilities of RMB 10,941 (2021: RMB 3,881).

As at 31 December 2022, 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 331 (2021: increase/decrease RMB 2,104), and would decrease/increase the Group's other comprehensive income for the year by approximately RMB 1,074 (2021: Nil). 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.

(b) Credit risk

Credit risk arises from cash and cash equivalents, time deposits with banks, accounts receivable, prepayments and other current assets and intangible and other non-current assets.

A substantial portion of the Group's cash at bank and time deposits are placed with the major state-owned banks and financial institutions in China and management believes that the credit risk is low.

The Group performs ongoing assessment of the credit quality of its customers and sets appropriate credit limits taking into account the financial position and past history of defaults of customers. The aging analysis of accounts receivable (net of impairment of accounts receivable) is presented in Note 23.

The carrying amounts of cash and cash equivalents, time deposits placed with banks, accounts receivable, prepayments and other current assets and financial assets at fair value through other comprehensive income included in the consolidated statement of financial position represent the Group's maximum exposure to credit risk. No other financial assets carry a significant exposure to credit risk.

The Group has no significant concentration of credit risk.

(c) Liquidity risk

Liquidity risk is the risk that the Group will encounter difficulty in meeting obligations associated with financial liabilities.

In managing its liquidity risk, the Group has access to funding at market rates through equity and debt markets, including using undrawn committed borrowing facilities to meet foreseeable borrowing requirements.

Given the low level of gearing and continued access to funding, the Group believes that its liquidity risk is not material.

Analysis of the Group's borrowings and lease liabilities based on the remaining period at the date of the statement of financial position to the contractual maturity dates is presented in Note 30 and Note 20.

4.2 Capital management

The Group's objectives when managing capital are to safeguard its ability to continue as a going concern, optimize returns for owners and to minimize its cost of capital. In meeting its objectives of managing capital, the Group may issue new shares, adjust its debt levels or the mix between short-term and long-term borrowings.

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The Group monitors capital on the basis of the gearing ratio which is calculated as interest-bearing borrowings / (interest-bearing borrowings + total equity), interest-bearing borrowings include short-term and long-term borrowings. The gearing ratio at December 31, 2022 is 17.4% (December 31, 2021: 19.5%).

4.3 Fair value estimation

The methods and assumptions applied in determining the fair value of each class of financial assets and financial liabilities of the Group at December 31, 2022 and 2021 are disclosed in the respective accounting policies.

The carrying amounts of the following financial assets and financial liabilities approximate their fair value as all of them are short-term in nature: cash and cash equivalents, time deposits with maturities over three months but within one year, accounts receivable, other receivables, trade payables, other payables and short-term borrowings. The fair values of fixed rate long-term borrowings are likely to be different from their respective carrying amounts. Analysis of the fair values and carrying amounts of long-term borrowings is presented in Note 30.

The Group's investments in FVTPL, derivative financial instruments and FVOCI are measured at fair value on the balance sheet date. The fair value of FVTPL are categorised into Level 1 of the fair value hierarchy, which are based on the unadjusted quoted prices in active markets for identical assets or liabilities as inputs used in the valuation techniques. The fair value of derivative financial instruments are mainly categorised into Level 1 and Level 2 of the fair value hierarchy, which are based on the unadjusted quoted prices in active markets for identical assets or liabilities as inputs used in the valuation techniques, or the inputs other than quoted prices included within Level 1 that are observable either directly or indirectly. Bills receivable in FVOCI are mainly categorised into Level 3 of the fair value hierarchy, which are based on that bills receivable are mainly short-term bills of acceptance issued by banks, and their fair values approximate the face values of the bills. The equity investments in FVOCI that are not held for trading are measured at fair value at the end of the reporting period. The fair value of such equity investments are mainly categorised into Level 1 of the fair value hierarchy, which are based on the unadjusted quoted prices in active markets for identical assets or liabilities as inputs used in the valuation techniques.

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As of December 31, 2022, financial assets and financial liabilities continuing to be measured at fair value are listed as follows in three levels:

	Level 1 RMB	Level 2 RMB	Level 3 RMB	Total RMB
Financial assets				
Financial assets at fair value through profit or loss:				
— Financial assets at fair value through profit or loss	3,876	—	—	3,876
Derivative financial instruments:				
— Derivative financial assets	14,508	6,625	—	21,133
Financial assets at fair value through other comprehensive income:				
— Bills receivable	—	—	4,376	4,376
— Other Investments	623	—	320	943
	<u>19,007</u>	<u>6,625</u>	<u>4,696</u>	<u>30,328</u>
Financial liabilities				
Financial liabilities at fair value through profit or loss				
— Financial liabilities at fair value through profit or loss	1,698	—	—	1,698
Derivative financial instruments:				
— Derivative financial liabilities	983	10,163	—	11,146
	<u>2,681</u>	<u>10,163</u>	<u>—</u>	<u>12,844</u>

As of December 31, 2021, financial assets and financial liabilities continuing to be measured at fair value are listed as follows in three levels:

	Level 1 RMB	Level 2 RMB	Level 3 RMB	Total RMB
Financial assets				
Derivative financial instruments:				
— Derivative financial assets	2,625	1,288	—	3,913
Financial assets at fair value through other comprehensive income:				
— Bills receivable	—	—	3,975	3,975
— Other Investments	905	—	263	1,168
	<u>3,530</u>	<u>1,288</u>	<u>4,238</u>	<u>9,056</u>
Financial liabilities				
Derivative financial instruments:				
— Derivative financial liabilities	726	3,155	—	3,881
	<u>726</u>	<u>3,155</u>	<u>—</u>	<u>3,881</u>

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 bills receivable classified as Level 3 financial assets.

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5 CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Estimates and judgments are regularly evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

The matters described below are considered to be the most critical in understanding the estimates and judgments that are involved in preparing the Group's consolidated financial statements.

(a) Estimation of oil and gas reserves

Estimates of oil and natural gas reserves are key elements in the Group's investment decision-making process. They are also important elements in testing impairment of property, plant and equipment (Note 5(b)). Changes in proved oil and gas reserves, particularly proved developed reserves, will affect unit-of-production depreciation, depletion and amortization recorded in the consolidated financial statements for property, plant and equipment relating to oil and gas production activities. An increase/reduction in proved developed reserves will decrease/increase depreciation, depletion and amortization charges. Proved oil and gas reserves estimates are subject to revision, either upward or downward, based on new information, such as from development drilling and production activities or from changes in economic factors, including product prices, contract terms, evolution of technology or development plans, etc.

(b) Estimation of impairment of property, plant and equipment

Property, plant and equipment, including oil and gas properties, are reviewed for possible impairments when events or changes in circumstances indicate that the carrying amount may not be recoverable. Determination as to whether and how much an asset is impaired involves management estimates and judgments such as the future price of crude oil, natural gas, refined and chemical products, the operation costs, the product mix, production volumes, production profile and the oil and gas reserves. The impairment reviews and calculations are based on assumptions that are consistent with the Group's business plans taking into account current economic conditions. Favorable changes to some assumptions, may allow the Group to avoid the need to impair any assets or make it necessary to reverse an impairment loss recognized in prior periods, whereas unfavorable changes may cause the assets to become impaired. For example, when the assumed future price and production profile of crude oil used for the expected future cash flows are different from the actual price and production profile of crude oil or respectively experienced in future, the Group may either over or under recognize the impairment losses for certain assets.

(c) Estimation of asset retirement obligations

Provision is recognized for the future decommissioning and restoration of oil and gas properties. The amount of the provision recognized is the present values of the estimated future expenditures. The estimation of the future expenditures is based on current local conditions and requirements, including legal requirements, technology, price levels, etc. In addition to these factors, the present values of these estimated future expenditures are also impacted by the management plan for the decommissioning of oil and gas properties, the estimation of the economic lives of oil and gas properties and estimates of discount rates. The estimations 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 period. Changes in any of these estimates will impact the operating results and the financial position of the Group over the remaining economic lives of the oil and gas properties.

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According to changes in the internal and external environment, accounting standards and company asset retirement expense measures and other relevant regulations, oil and gas field companies recalculate their asset retirement obligations of oil and gas properties based on the latest parameters, to more objectively reflect the actual situation of the Company's asset retirement obligation of oil and gas properties.

6 REVENUE

Revenue represents revenues from the sale of crude oil, natural gas, refined products, chemical products, non-oil products, etc., and from the transportation of crude oil and natural gas. Revenue from contracts with customers is mainly recognized at a point in time. The revenue information for the year ended December 31, 2022, 2021 and 2020 are as follows:

2022 Type of contract	Oil, Gas and New Energy Resource	Refining, Chemicals and New Material	Marketing	Natural Gas Sales	Head Office and Other	Total
Type of goods and services						
Crude oil	667,205	—	813,328	—	—	1,480,533
Natural gas	151,241	—	553,551	482,590	—	1,187,382
Refined products	—	938,829	880,682	—	—	1,819,511
Chemical products	—	219,089	60,872	—	—	279,961
Pipeline transportation business	—	—	—	829	—	829
Non-oil sales in gas stations	—	—	30,590	—	—	30,590
Others	110,550	6,515	432,103	35,730	5,452	590,350
Intersegment elimination	(777,846)	(827,572)	(520,502)	(22,156)	(3,210)	(2,151,286)
Revenue from contracts with customers	151,150	336,861	2,250,624	496,993	2,242	3,237,870
Other revenue	283	163	768	62	21	1,297
Total	151,433	337,024	2,251,392	497,055	2,263	3,239,167
Geographical Region						
China's mainland	86,645	336,861	964,872	496,993	2,242	1,887,613
Others	64,505	—	1,285,752	—	—	1,350,257
Revenue from contracts with customers	151,150	336,861	2,250,624	496,993	2,242	3,237,870
Other revenue	283	163	768	62	21	1,297
Total	151,433	337,024	2,251,392	497,055	2,263	3,239,167

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2021 Type of contract	Oil, Gas and New Energy Resource	Refining, Chemicals and New Material	Marketing	Natural Gas Sales	Head Office and Other	Total
Type of goods and services						
Crude oil	464,298	—	685,743	—	—	1,150,041
Natural gas	133,148	—	344,196	381,370	—	858,714
Refined products	—	759,912	1,064,890	—	—	1,824,802
Chemical products	—	207,810	48,240	—	—	256,050
Pipeline transportation business	—	—	—	3,360	—	3,360
Non-oil sales in gas stations	—	—	25,148	—	—	25,148
Others	90,539	7,072	1,272	32,208	3,871	134,962
Intersegment elimination	(571,705)	(650,018)	(397,485)	(19,526)	(1,201)	(1,639,935)
Revenue from contracts with customers	<u>116,280</u>	<u>324,776</u>	<u>1,772,004</u>	<u>397,412</u>	<u>2,670</u>	<u>2,613,142</u>
Other revenue	<u>349</u>	<u>178</u>	<u>573</u>	<u>84</u>	<u>23</u>	<u>1,207</u>
Total	<u>116,629</u>	<u>324,954</u>	<u>1,772,577</u>	<u>397,496</u>	<u>2,693</u>	<u>2,614,349</u>
Geographical Region						
China's mainland	68,327	324,776	832,229	397,412	2,670	1,625,414
Others	<u>47,953</u>	<u>—</u>	<u>939,775</u>	<u>—</u>	<u>—</u>	<u>987,728</u>
Revenue from contracts with customers	<u>116,280</u>	<u>324,776</u>	<u>1,772,004</u>	<u>397,412</u>	<u>2,670</u>	<u>2,613,142</u>
Other revenue	<u>349</u>	<u>178</u>	<u>573</u>	<u>84</u>	<u>23</u>	<u>1,207</u>
Total	<u>116,629</u>	<u>324,954</u>	<u>1,772,577</u>	<u>397,496</u>	<u>2,693</u>	<u>2,614,349</u>

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2020 Type of contract	Oil, Gas and New Energy Resource	Refining, Chemicals and New Material	Marketing	Natural Gas Sales	Head Office and Other	Total
Type of goods and services						
Crude oil	333,557	—	447,384	—	—	780,941
Natural gas	118,388	—	173,696	294,297	—	586,381
Refined products	—	616,063	822,192	—	—	1,438,255
Chemical products	—	150,296	30,344	—	—	180,640
Pipeline transportation business	—	—	—	52,273	—	52,273
Non-oil sales in gas stations	—	—	22,360	—	—	22,360
Others	78,631	8,254	1,300	23,800	3,515	115,500
Intersegment elimination	(437,670)	(492,667)	(276,503)	(35,437)	(1,320)	(1,243,597)
Revenue from contracts with customers	<u>92,906</u>	<u>281,946</u>	<u>1,220,773</u>	<u>334,933</u>	<u>2,195</u>	<u>1,932,753</u>
Other revenue	<u>231</u>	<u>162</u>	<u>257</u>	<u>401</u>	<u>32</u>	<u>1,083</u>
Total	<u>93,137</u>	<u>282,108</u>	<u>1,221,030</u>	<u>335,334</u>	<u>2,227</u>	<u>1,933,836</u>
Geographical Region						
China's mainland	27,028	281,946	554,620	334,933	2,195	1,200,722
Others	<u>65,878</u>	<u>—</u>	<u>666,153</u>	<u>—</u>	<u>—</u>	<u>732,031</u>
Revenue from contracts with customers	<u>92,906</u>	<u>281,946</u>	<u>1,220,773</u>	<u>334,933</u>	<u>2,195</u>	<u>1,932,753</u>
Other revenue	<u>231</u>	<u>162</u>	<u>257</u>	<u>401</u>	<u>32</u>	<u>1,083</u>
Total	<u>93,137</u>	<u>282,108</u>	<u>1,221,030</u>	<u>335,334</u>	<u>2,227</u>	<u>1,933,836</u>

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7 PROFIT BEFORE INCOME TAX EXPENSE

	2022 RMB	2021 RMB	2020 RMB
Items credited and charged in arriving at the profit before income tax expense include:			
<u>Credited</u>			
Dividend income from equity investments measured at fair value through other comprehensive income	15	17	25
Reversal of provision for impairment of receivables	160	360	95
Reversal of write down in inventories	42	76	186
(Loss)/Gain on disposal of investment in subsidiaries ⁽ⁱ⁾	(185)	3,575	1,242
Gain on Pipeline restructuring ⁽ⁱ⁾	—	18,320	46,946
Gain from ineffective portion of cash flow hedges ⁽ⁱ⁾	2,217	—	—
<u>Charged</u>			
Amortization of intangible and other assets	5,574	5,774	5,944
Depreciation and impairment losses:			
Owned property, plant and equipment	217,731	211,107	194,015
Right-of-use assets	14,731	14,388	13,916
Auditors' remuneration ⁽ⁱⁱ⁾	47	47	49
Cost of inventories recognized as expense	2,500,861	2,047,256	1,527,271
Provision for impairment of receivables	1,784	775	438
Loss on disposal and scrap of property, plant and equipment ⁽ⁱ⁾	20,726	18,959	5,398
Variable lease payments, low-value and short-term lease payment not included in the measurement of lease liabilities	2,083	2,645	3,362
Research and development expenses	20,016	16,729	15,746
Write down in inventories	8,609	656	8,337
Investment loss from disposal of derivative financial instruments ⁽ⁱ⁾	28,931	—	—
Impairment of other non-current assets ⁽ⁱ⁾	4,653	465	—

- (i) Other income, net primarily includes (loss)/gain on disposal of investment in subsidiaries, gain on Pipeline restructuring, gain from ineffective portion of cash flow hedges, loss on disposal of property, plant and equipment, investment loss from disposal of derivative financial instruments, impairment of other non-current assets.
- (ii) The auditors' remuneration above represents the annual audit fees paid by the Company. This remuneration does not include fees of RMB 39 (2021: RMB 41, 2020: RMB 62) paid by subsidiaries to the Company's current auditor and its network firms which primarily relates to audit, tax compliance and other advisory services.

8 EMPLOYEE COMPENSATION COSTS

	2022 RMB	2021 RMB	2020 RMB
Wages, salaries and allowances	107,808	100,971	98,832
Social security costs	55,265	53,864	48,772
	<u>163,073</u>	<u>154,835</u>	<u>147,604</u>

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Social security costs mainly represent contributions to plans for staff welfare organized by the PRC municipal and provincial governments and others, including contributions to the retirement benefit plans (Note 35).

9 TAXES OTHER THAN INCOME TAXES

	2022 RMB	2021 RMB	2020 RMB
Consumption tax	159,132	161,623	145,525
Resource tax	32,991	23,723	18,468
City maintenance and construction tax	17,003	16,078	13,647
Educational surcharge	12,436	11,660	9,882
Crude oil special gain levy	43,768	4,655	178
Urban and township land use tax	3,702	3,572	3,588
Others	9,023	6,692	4,562
	<u>278,055</u>	<u>228,003</u>	<u>195,850</u>

10 INTEREST EXPENSE

	2022 RMB	2021 RMB	2020 RMB
Interest on			
Bank loans	4,160	2,540	1,677
Other loans	7,583	8,092	14,342
Lease liabilities	5,447	5,419	6,297
Accretion expense (Note 34)	5,681	4,696	5,107
	<u>22,871</u>	<u>20,747</u>	<u>27,423</u>
Less: Amounts capitalized	(1,317)	(1,008)	(895)
	<u>21,554</u>	<u>19,739</u>	<u>26,528</u>

Amounts capitalized are borrowing costs that are attributable to the construction of qualifying assets. The average interest rate used to capitalize such general borrowing cost was 4.14% per annum for the year ended December 31, 2022 (2021: 4.19% per annum, 2020: 4.23% per annum).

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11 EMOLUMENTS OF DIRECTORS AND SUPERVISORS

Details of the emoluments of directors and supervisors for the years ended December 31, 2022, 2021 and 2020 are as follows:

Name	2022				2021	2020
	Fee for directors and supervisors RMB'000	Salaries, allowances and other benefits RMB'000	Contribution to retirement benefit scheme RMB'000	Total RMB'000	Total RMB'000	Total RMB'000
Chairmen:						
Mr. Dai Houliang ⁽ⁱ⁾	—	—	—	—	—	—
Mr. Wang Yilin ⁽ⁱ⁾	—	—	—	—	—	—
Vice chairmen:						
Mr. Hou Qijun ⁽ⁱⁱ⁾	—	—	—	—	—	—
Mr. Li Fanrong ⁽ⁱ⁾	—	—	—	—	—	—
Executive directors:						
Mr. Jiao Fangzheng ^(iv)	—	638	123	761	—	—
Mr. Huang Yongzhang ⁽ⁱⁱⁱ⁾	—	931	183	1,114	629	—
Mr. Ren Lixin ⁽ⁱⁱ⁾	—	1,044	182	1,226	195	—
	—	2,613	488	3,101	824	—
Non-executive directors:						
Mr. Duan Liangwei ⁽ⁱⁱⁱ⁾	—	—	—	—	237	735
Mr. Xie Jun ^(v)	—	—	—	—	—	—
Mr. Liu Yuezhen ^(iv)	—	—	—	—	—	—
Mr. Lin Boqiang ^(x)	—	—	—	—	—	388
Mr. Zhang Biyi ^(x)	—	—	—	—	—	398
Ms. Elsie Leung Oi-sie	529	—	—	529	556	331
Mr. Tokuchi Tatsuhiro	539	—	—	539	527	331
Mr. Simon Peter Henry ^(vi)	510	—	—	510	499	320
Mr. Cai Jinyong ^(x)	593	—	—	593	575	—
Mr. Jiang Xiaoming ^(x)	603	—	—	603	575	—
	2,774	—	—	2,774	2,969	2,503
Supervisors:						
Mr. Cai Anhui ^(v)	—	—	—	—	—	—
Mr. Lv Bo ^(v)	—	—	—	—	—	—
Mr. Xu Wenrong ^(v)	—	—	—	—	—	—
Mr. Xie Haibing ^(v)	—	—	—	—	—	—
Ms. Zhao Ying ^(v)	—	—	—	—	—	—
Mr. Cai Yong ^(v)	—	—	—	—	—	—
Mr. Lan Jianbin ^(vii)	—	642	89	731	—	—
Mr. He Jiangchuan ^(vii)	—	846	84	930	—	—
Mr. Jin Yanjiang ^(vii)	—	694	53	747	—	—
Mr. Fu Bin ^(viii)	—	445	61	506	—	—
Mr. Zhang Fengshan ^(v)	—	—	—	—	—	—
Mr. Jiang Lifu ^(v)	—	—	—	—	—	—
Mr. Lu Yaozhong ^(v)	—	—	—	—	—	—

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Name	2022				2021	2020
	Fee for directors and supervisors RMB'000	Salaries, allowances and other benefits RMB'000	Contribution to retirement benefit scheme RMB'000	Total RMB'000	Total RMB'000	Total RMB'000
Mr. Wang Liang ^(viii)	—	—	—	—	—	—
Mr. Fu Suotang ^(vii)	—	115	28	143	1,433	1,367
Mr. Li Jiamin ^(vii)	—	192	59	251	1,255	1,006
Mr. Li Wendong ^(ix)	—	—	—	—	137	1,193
Mr. Liu Xianhua ^(vii)	—	184	46	230	945	1,011
	—	3,118	420	3,538	3,770	4,577
	2,774	5,731	908	9,413	7,563	7,080

- (i) Mr. Wang Yilin ceased being the chairman from January 19, 2020. Mr. Dai Houliang was elected as the chairman and Mr. Li Fanrong was elected as the vice chairman from March 25, 2020. Mr. Li Fanrong ceased being the vice chairman and the director from May 10, 2021.
- (ii) Mr. Hou Qijun and Mr. Ren Lixin were appointed as directors from October 21, 2021; and Mr. Hou Qijun was appointed as Vice chairman from October 28, 2021.
- (iii) Mr. Duan Liangwei was appointed as the president and executive director from March 9, 2020. On March 25, 2021, Mr. Duan Liangwei resigned as the Company's president and was transferred from an executive director to a non-executive director, and no longer received remuneration from the Company; Mr. Huang Yongzhang was appointed as the Company's president and the executive director.
- (iv) Mr. Jiao Fangzheng was transferred from a non-executive director to an executive director from April 29, 2022; Mr. Liu Yuezheng ceased being a director of the Company.
- (v) Mr. Xie Jun was elected as director of the Company from June 9, 2022; Mr. Lv Bo ceased being the chairman and supervisor of the Supervisory Committee of the Company, and Mr. Zhang Fengshan, Mr. Jiang Lifu and Mr. Lu Yaozhong ceased being the supervisors of the Company;
Mr. Cai Anhui was elected as a supervisor and the chairman of the Supervisory Committee of the Company, and Mr. Xie Haibing, Ms. Zhao Ying and Mr. Cai Yong were elected as supervisors of the Company. Mr. Xu Wenrong ceased being the Chairman of the Supervisory Committee and supervisor and Mr. Lv Bo ceased being the non-executive director from October 20, 2020. Mr. Lv Bo was elected as the Chairman of the Supervisory Committee and supervisor from November 5, 2020.
- (vi) Mr. Simon Peter Henry ceased being a non-executive director of the Company from June 15, 2022.
- (vii) Mr. Fu Suotang, Mr. Li Jiamin and Mr. Liu Xianhua ceased being the supervisors of the Company from May 19, 2022; Mr. Lan Jianbin, Mr. He Jiangchuan and Mr. Jin Yanjiang were elected as supervisors of the Company.
- (viii) Mr. Wang Liang ceased being a supervisor of the Company from September 29, 2022; Mr. Fu Bin was elected as a supervisor of the Company.
- (ix) On May 28, 2021, Mr. Li Wendong resigned as the employee representative supervisor of the Company.
- (x) Mr. Cai Jinyong and Mr. Jiang Xiaoming were elected as independent non-executive directors from June 11, 2020, and began to perform their duties. The remuneration had not been paid at the end of December 31, 2020. Mr. Zhang Biyi and Mr. Lin Boqiang ceased being the independent non-executive director from June 11, 2020.
- (xi) The emoluments above are all pre-tax amounts paid by calendar year.
- (xii) The above emoluments for 2022 do not include the tenure incentive of RMB1.10 million for 2019-2021 payable by the Company to some directors in accordance with the relevant regulations of the PRC government.

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None of the directors and supervisors has waived their remuneration during the year ended December 31, 2022, 2021 and 2020.

The five highest paid individuals in the Company for the year ended December 31, 2022 are the five senior management whose allowances and other benefits were RMB 1.439, RMB 1.359, RMB 1.323, RMB 1.265 and RMB 1.044, respectively, and whose contribution to retirement benefit scheme were RMB 0.182, RMB 0.182, RMB 0.182, RMB 0.182 and RMB 0.182, respectively.

The five highest paid individuals in the Company for the year ended December 31, 2021 included one supervisor whose emolument is reflected in the analysis shown above and the note; and four senior management whose allowances and other benefits were RMB 1.533, RMB 1.310, RMB 1.308 and RMB 1.257, respectively, and whose contribution to retirement benefit scheme were RMB 0.164, RMB 0.164, RMB 0.164 and RMB 0.164, respectively.

The five highest paid individuals in the Company for the year ended December 31, 2020 included one supervisor whose emolument is reflected in the analysis shown above and the note; and four senior management whose allowances and other benefits were RMB 1.550, RMB 1.310, RMB 1.292 and RMB 1.270, respectively, and whose contribution to retirement benefit scheme were RMB 0.116, RMB 0.116, RMB 0.116 and RMB 0.116, respectively.

During the years ended December 31, 2022, 2021 and 2020, the Company did not incur any severance payment to any director for loss of office or any payment as inducement to any director to join the Company.

12 INCOME TAX EXPENSE

	<u>2022</u>	<u>2021</u>	<u>2020</u>
	<u>RMB</u>	<u>RMB</u>	<u>RMB</u>
Current taxes	63,328	33,822	14,922
Deferred taxes (Note 33)	(14,033)	9,685	7,666
	<u>49,295</u>	<u>43,507</u>	<u>22,588</u>

In accordance with the relevant PRC income tax rules and regulations, the PRC corporate income tax rate applicable to the Group is principally 25%. In accordance with the Circular jointly issued by the Ministry of Finance ("MOF"), the General Administration of Customs of the PRC and the State Administration of Taxation ("SAT") on Issues Concerning Tax Policies for In-depth Implementation of Western Development Strategy (Cai Shui [2011] No.58) and the Notice on Continuing the Income Tax Policy for Western Development (Notice No.23 of 2020 of the MOF, the SAT, the NDRC), the corporate income tax for the enterprises engaging in the encouraged industries in the Western China Region is charged at a preferential corporate income tax rate of 15% from January 1, 2011 to December 31, 2030. Certain branches and subsidiaries of the Company in the Western China Region obtained the approval for the use of the preferential corporate income tax rate of 15%.

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The tax on the Group's profit before taxation differs from the theoretical amount that would arise using the corporate income tax rate in the PRC applicable to the Group as follows:

	2022	2021	2020
	RMB	RMB	RMB
Profit before income tax expense	213,277	158,203	56,073
Tax calculated at a tax rate of 25%	53,319	39,551	14,018
Tax return true-up	(910)	(256)	256
Effect of income taxes from international operations different from taxes at the PRC statutory tax rate	7,857	2,692	1,522
Effect of preferential tax rate	(14,197)	(8,603)	(1,312)
Tax effect of income not subject to tax	(7,347)	(10,305)	(3,612)
Tax effect of expenses not deductible for tax purposes	9,241	15,789	5,455
Tax effect of temporary differences and losses not recognized as deferred tax assets	1,332	4,639	6,261
Income tax expense	49,295	43,507	22,588

13 PROFIT ATTRIBUTABLE TO OWNERS OF THE COMPANY

The profit attributable to owners of the Company in the consolidated financial statements of the Group is RMB 149,380 for the year ended December 31, 2022 (2021: RMB 92,170, 2020: 19,006).

14 BASIC AND DILUTED EARNINGS PER SHARE

Basic and diluted earnings per share for the years ended December 31, 2022, 2021 and 2020 have been computed by dividing profit for the year attributable to owners of the Company by 183,021 million shares issued and outstanding for the year.

There are no potentially dilutive ordinary shares.

15 DIVIDENDS

	2022	2021	2020
	RMB	RMB	RMB
Interim dividends attributable to owners of the Company for 2022 (a)	37,076	—	—
Proposed final dividends attributable to owners of the Company for 2022 (b)	40,265	—	—
Interim dividends attributable to owners of the Company for 2021 (c)	—	23,866	—
Final dividends attributable to owners of the Company for 2021 (d)	—	17,610	—
Interim dividends attributable to owners of the Company for 2020 (e)	—	—	16,000
Final dividends attributable to owners of the Company for 2020 (f)	—	—	16,000
	77,341	41,476	32,000

(a) Interim dividends attributable to owners of the Company in respect of 2022 of RMB 0.20258 yuan (inclusive of applicable tax) per share, amounting to a total of RMB 37,076. The dividends were paid on September 20, 2022 (A shares) and October 28, 2022 (H shares).

- (b) At the 20th meeting of the 8th Board, the Board of Directors proposed final dividends attributable to owners of the Company in respect of 2022 of RMB 0.22 yuan (inclusive of applicable tax) per share amounting

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to a total of RMB 40,265. These consolidated financial statements do not reflect this dividend payable as the final dividends were proposed after the reporting period and will be accounted for in equity as an appropriation of retained earnings during the year ended December 31, 2023 when approved at the forthcoming 2022 Annual General Meeting.

- (c) Interim dividends attributable to owners of the Company in respect of 2021 of RMB 0.13040 yuan (inclusive of applicable tax) per share, amounting to a total of RMB 23,866. The dividends were paid on September 17, 2021 (A shares) and October 29, 2021 (H shares).
- (d) Final dividends attributable to owners of the Company in respect of 2021 of RMB 0.09622 yuan (inclusive of applicable tax) per share, amounting to a total of RMB 17,610. The dividends approved at the 2021 Annual General Meeting held on June 9, 2022, and were paid on June 28, 2022 (A shares) and July 29, 2022 (H shares).
- (e) Interim dividends attributable to owners of the Company in respect of 2020 of RMB 0.08742 yuan (inclusive of applicable tax) per share, amounting to a total of RMB 16,000. The dividends were paid on September 22, 2020 (A shares) and November 13, 2020 (H shares).
- (f) Final dividends attributable to owners of the Company in respect of 2020 of RMB 0.08742 yuan (inclusive of applicable tax) per share, amounting to a total of RMB 16,000. The dividends approved at the 2020 Annual General Meeting held on 10 June, 2021, and were paid on June 29, 2021 (A shares) and July 30, 2021 (H shares).

16 PROPERTY, PLANT AND EQUIPMENT

Year Ended December 31, 2022	Buildings RMB	Oil and Gas Properties RMB	Equipment and Machinery RMB	Motor Vehicles RMB	Others RMB	Construction in Progress RMB	Total RMB
Cost							
At beginning of the year	258,858	2,452,625	778,003	21,903	47,275	232,282	3,790,946
Additions	327	78,917	3,877	125	462	258,562	342,270
Transfers	17,536	171,634	78,205	427	2,106	(269,908)	—
Disposals or write offs	(2,388)	(70,106)	(12,059)	(1,470)	(1,250)	(17,468)	(104,741)
Currency translation differences	671	20,534	1,110	19	539	1,387	24,260
At end of the year	275,004	2,653,604	849,136	21,004	49,132	204,855	4,052,735
Accumulated depreciation and impairment							
At beginning of the year	(120,417)	(1,635,837)	(516,649)	(16,991)	(33,145)	(8,611)	(2,331,650)
Charge for the year and others	(10,678)	(206,472)	(32,650)	(859)	(2,011)	—	(252,670)
Impairment charge	(957)	(14,750)	(3,510)	(20)	(1,328)	(1,830)	(22,395)
Disposals or write offs or transfers	31	52,701	6,450	1,355	1,180	2,366	64,083
Currency translation differences	(187)	(16,636)	(475)	(19)	(369)	96	(17,590)
At end of the year	(132,208)	(1,820,994)	(546,834)	(16,534)	(35,673)	(7,979)	(2,560,222)
Net book value							
At end of the year	142,796	832,610	302,302	4,470	13,459	196,876	1,492,513

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Year Ended December 31, 2021	Buildings RMB	Oil and Gas Properties RMB	Equipment and Machinery RMB	Motor Vehicles RMB	Others RMB	Construction in Progress RMB	Total RMB
Cost							
At beginning of the year	248,948	2,355,925	746,404	22,857	45,014	228,882	3,648,030
Additions	1,561	18,556	5,305	645	1,880	241,843	269,790
Transfers	13,736	160,810	38,649	—	2,369	(215,564)	—
Disposals or write offs	(5,101)	(75,411)	(12,010)	(1,588)	(1,675)	(22,175)	(117,960)
Currency translation differences	(286)	(7,255)	(345)	(11)	(313)	(704)	(8,914)
At end of the year	258,858	2,452,625	778,003	21,903	47,275	232,282	3,790,946
Accumulated depreciation and impairment							
At beginning of the year	(110,899)	(1,542,037)	(488,109)	(17,431)	(31,937)	(5,526)	(2,195,939)
Charge for the year and others	(11,057)	(138,251)	(33,404)	(992)	(2,485)	—	(186,189)
Impairment charge	(516)	(19,463)	(2,723)	—	(121)	(3,648)	(26,471)
Disposals or write offs or transfers	1,952	58,312	7,429	1,421	997	396	70,507
Currency translation differences	103	5,602	158	11	401	167	6,442
At end of the year	(120,417)	(1,635,837)	(516,649)	(16,991)	(33,145)	(8,611)	(2,331,650)
Net book value							
At end of the year	138,441	816,788	261,354	4,912	14,130	223,671	1,459,296

The Group's oil, gas and new energy resource segment determines whether there are any indicators of impairment for the oil fields or blocks and performs the impairment tests on those oil fields or blocks with indications of impairment, and reports the results to the Group's internal professional team (including exploration and finance expert) for further overall assessment and evaluation. The final results of the impairment tests have been submitted to the Group's management for review and approval. The Group recorded impairment losses amounting to RMB 14,750 related to oil and gas properties under the oil, gas and new energy resource segment for the year ended December 31, 2022 (2021: RMB 19,463 related to oil and gas properties under the oil, gas and new energy resource segment, 2020: RMB 13,908 related to oil and gas properties under the oil, gas and new energy resource segment) due to the decline of oil and gas reserves in certain oilfield or change in business condition. The carrying amount of those impaired oil and gas properties was written down to their respective recoverable amounts, which were primarily determined using the discounted cash flow model. The Group referred to the weighted average cost of capital of the oil and gas industry when determining discount rate, and made relevant adjustments according to specific risks in different countries or regions. In 2022, the after-tax discount rates adopted by most oil fields or blocks of the Group ranged from 7.2% to 16.0% (2021: 7.6% to 15.0%, 2020: 5.9% to 12.0%) per annum.

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The following table indicates the changes to the Group's exploratory well costs, which are included in construction in progress, for the years ended December 31, 2022, 2021 and 2020.

	2022 RMB	2021 RMB	2020 RMB
At beginning of the year	29,387	38,807	36,101
Additions to capitalized exploratory well costs pending the determination of proved reserves	29,199	30,338	30,104
Reclassified to wells, facilities, and equipment based on the determination of proved reserves	(19,623)	(27,201)	(18,464)
Capitalized exploratory well costs charged to expense	(14,118)	(12,557)	(8,934)
At end of the year	<u>24,845</u>	<u>29,387</u>	<u>38,807</u>

The following table provides an aging of capitalized exploratory well costs based on the date the drilling was completed.

	December 31, 2022 RMB	December 31, 2021 RMB
One year or less	16,780	19,354
Over one year	8,065	10,033
Balance at December 31	<u>24,845</u>	<u>29,387</u>

Capitalized exploratory well costs over one year are principally related to the wells that are under further evaluation of drilling results or pending completion of development planning to ascertain economic viability.

17 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES

The summarized financial information of the Group's principal associates and joint ventures, including the aggregated amounts of assets, liabilities, revenue, profit or loss and the interest held by the Group were as follows:

Name	Country of Incorporation	Registered Capital	Principal Activities	Interest Held	
				Direct %	Indirect %
China Oil & Gas Piping Network Corporation ("PipeChina")	PRC	500,000	Pipeline transport, storage service, import of equipment, import and export of techniques, science and technology research, research and application of informatization, technology consulting, technology service, technology transfer, promotion of technology	29.90	—

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<u>Name</u>	<u>Country of Incorporation</u>	<u>Registered Capital</u>	<u>Principal Activities</u>	<u>Interest Held</u>	
				<u>Direct %</u>	<u>Indirect %</u>
China Petroleum Finance Co., Ltd. (“CP Finance”)	PRC	16,395	Deposits, loans, settlement, lending, bills acceptance discounting, guarantee and other banking business	32.00	—
CNPC Captive Insurance Co., Ltd.	PRC	6,000	Property loss insurance, liability insurance, credit insurance and deposit insurance; as well as the application of the above insurance reinsurance and insurance capital business	49.00	—
China Marine Bunker (PetroChina) Co., Ltd.	PRC	1,000	Oil import and export trade and transportation, sale and storage	—	50.00
Mangistau Investment B.V.	Netherlands	USD 131 million	Engages in investing activities, the principle activities of its main subsidiaries are exploration, development and sale of oil and gas.	—	50.00
Trans-Asia Gas Pipeline Co., Ltd.	PRC	5,000	Main contractor, investment holding, investment management, investment consulting, enterprise management advisory, technology development, promotion and technology consulting	—	50.00

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Interest in Associates

Summarized consolidated statement of financial information in respect of the Group's principal associates and reconciliation to carrying amount is as follows:

	PipeChina		CP Finance		CNPC Captive Insurance Co., Ltd.	
	December 31, 2022	December 31, 2021	December 31, 2022	December 31, 2021	December 31, 2022	December 31, 2021
	RMB	RMB	RMB	RMB	RMB	RMB
Percentage ownership interest (%)	29.90	29.90	32.00	32.00	49.00	49.00
Current assets	104,889	86,335	401,971	415,139	8,859	9,100
Non-current assets	816,301	768,161	126,363	116,765	2,349	2,618
Current liabilities	132,266	136,150	442,283	446,369	470	859
Non-current liabilities	199,675	103,243	3,823	8,396	3,504	3,900
Net assets	589,249	615,103	82,228	77,139	7,234	6,959
Net assets attributable to owners of the Company	525,235	526,241	82,228	77,139	7,234	6,959
Group's share of net assets	157,045	157,346	26,313	24,684	3,545	3,410
Goodwill	—	—	349	349	—	—
Carrying amount of interest in associates	157,045	157,346	26,662	25,033	3,545	3,410

Summarized statement of comprehensive income and dividends received by the Group are as follow:

	PipeChina			CP Finance			CNPC Captive Insurance Co., Ltd.		
	2022	2021	From Oct 01, 2020 to Dec 31, 2020	2022	2021	2020	2022	2021	2020
	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB
Revenue	112,832	101,572	22,766	13,302	12,691	7,954	931	1,510	735
Profit for the year	31,908	29,776	6,444	6,312	6,304	7,819	449	424	389
Other comprehensive income/(loss)	—	2	—	1,174	(606)	(1,603)	—	—	—
Total comprehensive income	31,908	29,778	6,444	7,486	5,698	6,216	449	424	389
Total comprehensive income attributable to owners of the Company	26,212	22,895	5,124	7,486	5,698	6,216	449	424	389
Group's share of total comprehensive income	7,837	6,846	1,532	2,396	1,823	1,989	220	207	191
Dividends received by the Group	4,312	943	—	767	904	677	85	78	74

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Interest in Joint Ventures

Summarized consolidated statement of financial position as included in their own financial statements, adjusted for fair value adjustments and differences in accounting policies in respect of the Group's principal joint ventures and reconciliation to carrying amount is as follows:

	China Marine Bunker (PetroChina) Co., Ltd.		Mangistau Investment B.V.		Trans-Asia Gas Pipeline Co., Ltd.	
	December 31, 2022	December 31, 2021	December 31, 2022	December 31, 2021	December 31, 2022	December 31, 2021
	RMB	RMB	RMB	RMB	RMB	RMB
Percentage ownership interest (%)	50.00	50.00	50.00	50.00	50.00	50.00
Non-current assets	1,803	1,571	10,392	9,927	48,715	44,011
Current assets	10,551	11,305	1,196	2,220	644	1,437
Including: cash and cash equivalents	1,661	2,292	431	1,631	634	1,411
Non-current liabilities	196	540	2,333	2,033	2,105	2,147
Including: Non-current financial liabilities	—	—	14	—	2,100	2,101
Current liabilities	9,778	9,997	823	872	74	483
Including: Current financial liabilities excluding trade and other payables	6,143	5,810	—	—	—	—
Net assets	2,380	2,339	8,432	9,242	47,180	42,818
Net assets attributable to owners of the Company	2,070	1,952	8,432	9,242	47,180	42,818
Group's share of net assets	1,035	976	4,216	4,621	23,590	21,409
Carrying amount of interest in joint ventures	978	976	4,216	4,621	23,590	21,409

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Summarized statement of comprehensive income as included in their own financial statements, adjusted for fair value adjustments and differences in accounting policies and dividends received by the Group is as follows:

	China Marine Bunker (PetroChina) Co., Ltd.			Mangistau Investment B.V.			Trans-Asia Gas Pipeline Co., Ltd.		
	2022 RMB	2021 RMB	2020 RMB	2022 RMB	2021 RMB	2020 RMB	2022 RMB	2021 RMB	2020 RMB
Revenue	80,086	58,210	36,695	13,279	11,543	8,152	16	17	18
Depreciation, depletion and amortization	(180)	(190)	(195)	(950)	(1,002)	(1,048)	(11)	(57)	(38)
Interest income	48	11	16	16	3	4	36	31	42
Interest expense	(219)	(72)	(60)	(137)	(141)	(160)	(47)	(56)	(58)
Income tax expense	(72)	(56)	(57)	(558)	(846)	(293)	(27)	—	1
Profit/(loss) for the year	126	(610)	185	1,486	2,114	362	4,112	4,067	3,060
Total comprehensive income / (loss)	163	(691)	140	1,878	1,874	(650)	5,031	3,508	(3,007)
Total comprehensive income/(loss) attributable to owners of the Company	118	(687)	92	1,878	1,874	(650)	5,031	3,508	(3,007)
Group's share of total comprehensive income/ (loss)	59	(344)	46	939	937	(325)	2,516	1,754	(1,504)
Dividends received by the Group	—	29	—	1,344	233	539	335	410	—

Dividends received or receivable from associates and joint ventures were RMB 9,803 in 2022 (2021: RMB 4,715, 2020: RMB 4,517).

In 2022, investments in associates and joint ventures of RMB 721 (2021: RMB 489, 2020: RMB 1,687) were disposed of, resulting in a loss of RMB 24 (2021: RMB 4, 2020: RMB 5) which was included in other income.

In 2022, the share of profit and other comprehensive loss in all individually immaterial associates and joint ventures accounted for using equity method in aggregate was RMB 2,324 (2021: RMB 1,418, 2020: a loss of RMB 2,468) and RMB 386 (2021: an income of RMB 622, 2020: an income of RMB 3,631), respectively.

18 EQUITY INVESTMENTS MEASURED AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME

	December 31, 2022 RMB	December 31, 2021 RMB
Houpu Clean Energy Group Co., Ltd.	251	534
China Pacific Insurance (Group) Co., Ltd.	120	133
Other items	572	501
	<u>943</u>	<u>1,168</u>

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Dividends amounting to RMB 15 were received on these investments during the year ended December 31, 2022 (2021: RMB 17, 2020: RMB 25).

19 SUBSIDIARIES

The principal subsidiaries of the Group are:

Company Name	Country of Incorporation	Registered Capital	Type of Legal Entity	Attributable Equity Interest %	Voting Rights %	Principal Activities
Daqing Oilfield Company Limited	PRC	47,500	Limited liability company	100.00	100.00	Exploration, production and sale of crude oil and natural gas
CNPC Exploration and Development Company Limited (i)	PRC	16,100	Limited liability company	50.00	57.14	Exploration, production and sale of crude oil and natural gas outside the PRC
PetroChina Hong Kong Limited	Hong Kong	HKD 7,592 million	Limited liability company	100.00	100.00	Investment holding. The principal activities of its subsidiaries, associates and joint ventures are the exploration, production and sale of crude oil in and outside the PRC as well as natural gas sale and transmission in the PRC
PetroChina International Investment Company Limited	PRC	31,314	Limited liability company	100.00	100.00	Investment holding. The principal activities of its subsidiaries, associates and joint ventures are the exploration, development and production of crude oil, natural gas, oil sands and coalbed methane outside the PRC
PetroChina International Company Limited	PRC	18,096	Limited liability company	100.00	100.00	Marketing of refined products and trading of crude oil and petrochemical products, storage, investment in refining, chemical engineering, storage facilities, service station, and transportation facilities and related business in and outside the PRC

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Company Name	Country of Incorporation	Registered Capital	Type of Legal Entity	Attributable Equity Interest %	Voting Rights %	Principal Activities
PetroChina Sichuan Petrochemical Company Limited	PRC	10,000	Limited liability company	90.00	90.00	Engaged in oil refining, petrochemical, chemical products production, sales, chemical technology development, technical transfer and services
KunLun Energy Company Limited(ii)	Bermuda	HKD 160 million	Limited liability company	54.38	54.38	Investment holding. The principal activities of its principal subsidiaries, associates and joint ventures are the sales of natural gas, sales of liquefied petroleum gas and liquefied natural gas processing and terminal business in the PRC and the exploration and production of crude oil and natural gas in the PRC, the Republic of Kazakhstan, the Sultanate of Oman, the Republic of Peru, the Kingdom of Thailand and the Republic of Azerbaijan.

- (i) The Company 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.
- (ii) Kunlun Energy Co., Ltd. is a company listed on The Stock Exchange of Hong Kong Limited.

Summarized financial information in respect of the Group's principal subsidiaries with significant non-controlling interests is as follows:

	CNPC Exploration and Development Company Limited		PetroChina Sichuan Petrochemical Company Limited	
	December 31, 2022 RMB	December 31, 2021 RMB	December 31, 2022 RMB	December 31, 2021 RMB
Percentage ownership interest (%)	50.00	50.00	90.00	90.00
Current assets	20,186	15,596	4,391	3,973
Non-current assets	190,630	184,486	22,131	25,317
Current liabilities	15,463	11,282	1,700	3,876
Non-current liabilities	20,904	30,293	313	382
Net assets	174,449	158,507	24,509	25,032

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Summarized statement of comprehensive income is as follows:

	CNPC Exploration and Development Company Limited			PetroChina Sichuan Petrochemical Company Limited		
	2022	2021	2020	2022	2021	2020
	RMB	RMB	RMB	RMB	RMB	RMB
Revenue	55,499	42,730	33,312	58,131	48,493	35,319
Net profit	12,390	8,413	6,006	33	3,383	520
Total comprehensive income/(loss)	23,813	5,231	(6,972)	33	3,383	520
Profit attributable to non-controlling interests	6,956	4,837	3,311	3	338	52
Dividends paid to non-controlling interests	4,383	1,485	1,498	62	307	12

Summarized statement of cash flows is as follows:

	CNPC Exploration and Development Company Limited			PetroChina Sichuan Petrochemical Company Limited		
	2022	2021	2020	2022	2021	2020
	RMB	RMB	RMB	RMB	RMB	RMB
Net cash inflow/(outflow) from operating activities	16,850	13,320	5,681	(771)	2,666	5,119
Net cash inflow/(outflow) from investing activities	3,013	(5,191)	(16,187)	1,466	(231)	(380)
Net cash (outflow)/inflow from financing activities	(16,628)	(8,531)	7,410	(695)	(3,995)	(3,186)
Effect of foreign exchange rate changes on cash and cash equivalents	33	(15)	(776)	—	—	—
Net increase/(decrease) in cash and cash equivalents	3,268	(417)	(3,872)	—	(1,560)	1,553
Cash and cash equivalents at the beginning of the year	8,785	9,202	13,074	1	1,561	8
Cash and cash equivalents at the end of the year	12,053	8,785	9,202	1	1	1,561

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20 LEASES

The leases where the Group is a lessee.

(a) Right-of-use assets

	December 31, 2021	Additions	Reduction	December 31, 2022
Cost				
Land	180,600	4,659	(1,456)	183,803
Buildings	56,890	5,451	(3,708)	58,633
Equipment and Machinery	4,474	2,613	(492)	6,595
Others	1,818	97	(724)	1,191
Total	<u>243,782</u>	<u>12,820</u>	<u>(6,380)</u>	<u>250,222</u>
Accumulated depreciation				
Land	(18,417)	(6,694)	384	(24,727)
Buildings	(14,425)	(6,521)	2,226	(18,720)
Equipment and Machinery	(1,577)	(1,730)	350	(2,957)
Others	(757)	(140)	144	(753)
Total	<u>(35,176)</u>	<u>(15,085)</u>	<u>3,104</u>	<u>(47,157)</u>
Net book value				
Land	162,183			159,076
Buildings	42,465			39,913
Equipment and Machinery	2,897			3,638
Others	1,061			438
Total	<u>208,606</u>			<u>203,065</u>

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	December 31, 2020	Additions	Reduction	December 31, 2021
Cost				
Land	171,941	9,331	(672)	180,600
Buildings	57,337	5,120	(5,567)	56,890
Equipment and Machinery	2,641	2,614	(781)	4,474
Others	2,195	186	(563)	1,818
Total	<u>234,114</u>	<u>17,251</u>	<u>(7,583)</u>	<u>243,782</u>
Accumulated depreciation				
Land	(11,611)	(7,022)	216	(18,417)
Buildings	(10,839)	(6,334)	2,748	(14,425)
Equipment and Machinery	(1,166)	(1,096)	685	(1,577)
Others	(712)	(313)	268	(757)
Total	<u>(24,328)</u>	<u>(14,765)</u>	<u>3,917</u>	<u>(35,176)</u>
Net book value				
Land	160,330			162,183
Buildings	46,498			42,465
Equipment and Machinery	1,475			2,897
Others	1,483			1,061
Total	<u>209,786</u>			<u>208,606</u>

The Group's use of right assets mainly include leased land, buildings, equipment and machinery. The leases underlying assets classified as buildings are mainly the leased gas filling stations, oil storages and office buildings. The leases underlying assets classified as equipment and machinery are mainly drilling equipment, production equipment and other movable equipment.

(b) Lease liabilities

	December 31, 2022	December 31, 2021
	RMB	RMB
Lease liabilities	125,760	129,848
Less: Lease liabilities due within one year	(7,560)	(6,626)
	<u>118,200</u>	<u>123,222</u>

Depreciation charged to profit or loss provided on right-of-use assets for the year ended December 31, 2022 was RMB 14,731 (2021: RMB 14,388).

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Analysis of the undiscounted cash flow of the lease liabilities is as follows:

	December 31, 2022	December 31, 2021
	<u>RMB</u>	<u>RMB</u>
Within 1 year	13,244	12,495
Between 1 and 2 years	11,301	11,181
Between 2 and 5 years	30,995	30,541
Over 5 years	148,974	154,636
	<u>204,514</u>	<u>208,853</u>

21 INTANGIBLE AND OTHER NON-CURRENT ASSETS

	December 31, 2022			December 31, 2021		
	Cost	Accumulated amortization and impairment losses	Net	Cost	Accumulated amortization and impairment losses	Net
	<u>RMB</u>	<u>RMB</u>	<u>RMB</u>	<u>RMB</u>	<u>RMB</u>	<u>RMB</u>
Patents and technical know-how	10,196	(7,295)	2,901	8,213	(6,905)	1,308
Computer software	13,582	(10,169)	3,413	13,016	(9,751)	3,265
Goodwill (i)	8,623	(1,306)	7,317	8,023	(36)	7,987
Others	27,502	(11,505)	15,997	27,335	(10,889)	16,446
Intangible assets	<u>59,903</u>	<u>(30,275)</u>	<u>29,628</u>	<u>56,587</u>	<u>(27,581)</u>	<u>29,006</u>
Other assets			40,185			37,338
			<u>69,813</u>			<u>66,344</u>

- (i) Goodwill primarily relates to the acquisition of Singapore Petroleum Company and Petrolneos Trading Limited, subsidiaries in the Marketing segment, completed in 2009 and 2011, respectively.

The impairment of goodwill shall be tested in combination with its related asset groups. The recoverable amount of all cash-generating units has been determined based on the higher of fair value less costs to sell and value in use. These calculations use post-tax cash flow projections based on financial budgets prepared by management. The post-tax discount rates reflect specific risks relating to the cash-generating unit.

For impairment test of the goodwill, the post-tax discount rates ranged 9.0% to 18.6% (2021: 8.5% to 14.7%, 2020: 4.9% to 10.5%) were used by the management, and the impairment loss was charged for the goodwill for the year ended December 31, 2022 amounted to RMB 1,227 (2021: nil, 2020: nil).

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22 INVENTORIES

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
	<u>RMB</u>	<u>RMB</u>
Crude oil and other raw materials	56,756	40,334
Work in progress	14,448	15,393
Finished goods	104,722	88,811
Spare parts and consumables	109	91
	<u>176,035</u>	<u>144,629</u>
Less: Write down in inventories	(8,284)	(781)
	<u>167,751</u>	<u>143,848</u>

The Group recognises inventories, includes unsold products produced before that property, plant and equipment is available for use. The cost of such inventories includes incremental costs directly attributable to the production process and indirect manufacturing costs allocated by a reasonable method.

23 ACCOUNTS RECEIVABLE

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
	<u>RMB</u>	<u>RMB</u>
Accounts receivable	74,917	54,160
Less: Provision for impairment of accounts receivable	(2,889)	(1,414)
	<u>72,028</u>	<u>52,746</u>

The aging analysis of accounts receivable (net of impairment of accounts receivable) based on the invoice date (or date of revenue recognition, if earlier), at December 31, 2022 and 2021 is as follows:

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
	<u>RMB</u>	<u>RMB</u>
Within 1 year	71,307	51,533
Between 1 and 2 years	266	816
Between 2 and 3 years	302	194
Over 3 years	153	203
	<u>72,028</u>	<u>52,746</u>

The Group offers its customers credit terms up to 180 days.

Movements in the provision for impairment of accounts receivable are as follows:

	<u>2022</u>	<u>2021</u>	<u>2020</u>
	<u>RMB</u>	<u>RMB</u>	<u>RMB</u>
At beginning of the year	1,414	1,140	2,431
Provision for impairment of accounts receivable	1,598	396	426
Reversal of provision for impairment of accounts receivable	(124)	(110)	(76)

Receivables written off as uncollectible and others	<u>1</u>	<u>(12)</u>	<u>(1,641)</u>
At end of the year	<u>2,889</u>	<u>1,414</u>	<u>1,140</u>

The Group measures loss allowance for accounts receivable at an amount equal to lifetime ECLs. The ECLs were calculated by reference to the historical actual credit loss experience. The rates were considered the

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differences between economic conditions during the period over which the historical data has been collected, current conditions and the Group's view of economic conditions over the expected lives of the receivables. The Group performed the calculation of ECL rates by the operating segment and geography.

	Gross carrying amount	Impairment provision on individual basis	Impairment provision on provision matrix basis		Loss allowance
	RMB	RMB	Weighted- average loss rate	Impairment provision	RMB
			%	RMB	
December 31, 2022					
Current (not past due)	68,951	—	1.1%	803	803
Within 1 year past due	3,951	380	1.1%	38	418
1 to 2 years past due	476	—	55.3%	263	263
2 to 3 years past due	522	172	70.3%	246	418
Over 3 years past due	1,017	446	94.7%	541	987
Total	74,917	998		1,891	2,889

	Gross carrying amount	Impairment provision on individual basis	Impairment provision on provision matrix basis		Loss allowance
	RMB	RMB	Weighted- average loss rate	Impairment provision	RMB
			%	RMB	
December 31, 2021					
Current (not past due)	49,185	—	0.1%	55	55
Within 1 year past due	3,153	26	1.6%	50	76
1 to 2 years past due	648	153	25.5%	126	279
2 to 3 years past due	329	67	45.0%	118	185
Over 3 years past due	845	352	94.7%	467	819
Total	54,160	598		816	1,414

24 DERIVATIVE FINANCIAL INSTRUMENTS

The derivative financial instruments of the Group are mainly commodity futures, commodity swaps and commodity forwards contracts, as presented in Note 4.3.

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25 PREPAYMENTS AND OTHER CURRENT ASSETS

	December 31, 2022	December 31, 2021
	RMB	RMB
Other receivables(i)	47,410	40,983
Advances to suppliers	14,261	14,900
	61,671	55,883
Less: Provision for impairment	(3,124)	(2,986)
	58,547	52,897
Value-added tax recoverable	34,256	42,644
Prepaid expenses	414	505
Prepaid income taxes	12,107	4,853
Other current assets(ii)	14,330	11,921
	119,654	112,820

- (i) As of December 31, 2022 and December 31, 2021, the Group's other receivables are mainly in the first stage.
(ii) Other current assets consist primarily of receivables from associates, dividends receivables, interests receivables, etc.

26 FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME

Financial assets at fair value through other comprehensive income represent mainly bills of acceptance issued by banks. The Group's business model of financial assets at fair value through other comprehensive income is achieved both by collecting contractual cash flows and selling of these assets. All financial assets at fair value through other comprehensive income are due within one year, and their fair values approximate the face values of the bills.

27 CASH AND CASH EQUIVALENTS

The weighted average effective interest rate on bank deposits was 1.83% per annum for the year ended December 31, 2022 (2021: 1.68% per annum, 2020: 1.69% per annum).

28 ACCOUNTS PAYABLE AND ACCRUED LIABILITIES

	December 31, 2022	December 31, 2021
	RMB	RMB
Trade payables	172,546	140,538
Salaries and welfare payable	9,385	8,975
Dividends payable by subsidiaries to non-controlling shareholders	581	419
Notes payables	15,630	20,089
Construction fee and equipment cost payables	116,571	92,683
Others (i)	57,656	36,417
	372,369	299,121

- (i) Others consist primarily of operating lease payable, deposit, earnest money, caution money and insurance payables, etc.

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The aging analysis of trade payables at December 31, 2022 and 2021 is as follows:

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
	<u>RMB</u>	<u>RMB</u>
Within 1 year	162,431	130,863
Between 1 and 2 years	2,682	2,767
Between 2 and 3 years	1,072	948
Over 3 years	6,361	5,960
	<u>172,546</u>	<u>140,538</u>

29 CONTRACT LIABILITIES

As of December 31, 2022 and December 31, 2021, contract liabilities mainly represented advances from customers related to the sales of refined oil, natural gas, chemical products and crude oil, etc. The majority of related obligations were expected to be performed with corresponding revenue recognised within one year. Substantially all of contract liabilities at the beginning of the year has been recognised as revenue for the year ended December 31, 2022.

30 BORROWINGS

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
	<u>RMB</u>	<u>RMB</u>
Short-term borrowings excluding current portion of long-term borrowings	38,375	40,010
Current portion of long-term borrowings	62,264	13,265
	<u>100,639</u>	<u>53,275</u>
Long-term borrowings	222,478	287,175
	<u>323,117</u>	<u>340,450</u>

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
	<u>RMB</u>	<u>RMB</u>
Bank loans	110,117	114,469
Corporate debentures	18,468	20,170
Medium-term notes	59,380	71,000
Other loans	135,152	134,811
	<u>323,117</u>	<u>340,450</u>

Borrowings of the Group of RMB 11,186 were guaranteed by CNPC and its fellow subsidiaries and non-controlling interests of the subsidiaries of the Group at December 31, 2022 (2021: RMB 13,558).

As of December 31, 2022, the RMB pledge borrowings were mainly pledged by natural gas charging rights. The US dollar pledge borrowings were pledged by the bank deposit of RMB 3,286 (2021: RMB 3,286).

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The Group's borrowings include mortgage loans totaling RMB 1,074 at December 31, 2022 (2021: RMB 1,185), which were secured by property, plant and equipment with net book value of RMB 861 and intangible and other non-current assets with net book value of RMB 475.

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
	<u>RMB</u>	<u>RMB</u>
Total borrowings:		
— interest free	103	101
— at fixed rates	112,588	131,705
— at floating rates	210,426	208,644
	<u>323,117</u>	<u>340,450</u>
Weighted average effective interest rates:		
— bank loans	3.04%	2.18%
— corporate debentures	4.05%	4.14%
— medium-term notes	3.12%	3.28%
— other loans	3.47%	2.51%

The borrowings by major currency at December 31, 2022 and 2021 are as follows:

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
	<u>RMB</u>	<u>RMB</u>
RMB	218,897	238,361
US Dollar	97,503	94,803
Other currency	6,717	7,286
	<u>323,117</u>	<u>340,450</u>

The fair values of the Group's long-term borrowings including the current portion of long-term borrowings are RMB 286,770 at December 31, 2022 (2021: RMB 290,937). The carrying amounts of short-term borrowings approximate their fair values. The fair values are based on discounted cash flows using applicable discount rates based upon the prevailing market rates of interest available to the Group for financial instruments with substantially the same terms and characteristics at the dates of the consolidated statement of financial position. Such discount rates ranged from 2.13 % to 5.48 % per annum as of December 31, 2022 (2021: 0.10% to 5.14%) depending on the type of the borrowings.

The following table sets out the borrowings' remaining contractual maturities at the date of the consolidated statement of financial position, which are based on contractual undiscounted cash flows including principal and interest, and the earliest contractual maturity date:

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
	<u>RMB</u>	<u>RMB</u>
Within 1 year	107,461	58,923
Between 1 and 2 years	129,885	53,250
Between 2 and 5 years	102,490	226,124
After 5 years	16,500	28,053
	<u>356,336</u>	<u>366,350</u>

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Reconciliation of movements of borrowings to cash flows arising from financing activities:

	2022 RMB	2021 RMB
At beginning of the year	340,450	368,921
Changes from financing cash flows:		
Increase in borrowings	866,348	810,092
Repayments of borrowings	(891,329)	(836,434)
Total changes from financing cash flows	(24,981)	(26,342)
Exchange adjustments	7,648	(2,129)
At end of the year	<u>323,117</u>	<u>340,450</u>

31 SHARE CAPITAL

	December 31, 2022 RMB	December 31, 2021 RMB
Registered, issued and fully paid:		
A shares	161,922	161,922
H shares	21,099	21,099
	<u>183,021</u>	<u>183,021</u>

In accordance with the Restructuring Agreement between CNPC and the Company effective as of November 5, 1999, the Company issued 160 billion state-owned shares in exchange for the assets and liabilities transferred to the Company by CNPC. The 160 billion state-owned shares were the initial registered capital of the Company with a par value of RMB 1.00 yuan per share.

On April 7, 2000, the Company issued 17,582,418,000 shares, represented by 13,447,897,000 H shares and 41,345,210 ADSs (each representing 100 H shares) in a global initial public offering ("Global Offering") and the trading of the H shares and the ADSs on The Stock Exchange of Hong Kong Limited and the New York Stock Exchange commenced on April 7, 2000 and April 6, 2000, respectively. Pursuant to the approval of the China Securities Regulatory Commission, 1,758,242,000 state-owned shares of the Company owned by CNPC were converted into H shares for sale in the Global Offering. The H shares and ADSs were issued at prices of HK\$ 1.28 per H share and US\$ 16.44 per ADS respectively for which the net proceeds to the Company were approximately RMB 20 billion. The shares issued pursuant to the Global Offering rank equally with existing shares.

On September 1, 2005, the Company issued an additional 3,196,801,818 new H shares at HK\$ 6.00 per share and net proceeds to the Company amounted to approximately RMB 19,692. CNPC also sold 319,680,182 state-owned shares it held concurrently with PetroChina's sale of new H shares in September 2005.

On October 31, 2007, the Company issued 4,000,000,000 new A shares at RMB 16.70 yuan per share and net proceeds to the Company amounted to approximately RMB 66,243 and the listing and trading of the A shares on the Shanghai Stock Exchange commenced on November 5, 2007.

Following the issuance of the A shares, all the existing state-owned shares issued before November 5, 2007 held by CNPC have been registered with the China Securities Depository and Clearing Corporation Limited as A shares.

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Shareholders' rights are governed by the Company Law of the PRC that requires an increase in registered capital to be approved by the shareholders in shareholders' general meetings and the relevant PRC regulatory authorities.

On September 8, 2022(EST), the Company's ADSs were delisted from the NYSE.

32 RESERVES

	<u>2022</u> <u>RMB</u>	<u>2021</u> <u>RMB</u>
Capital Reserve		
Beginning balance	133,308	133,308
Ending balance	133,308	133,308
Statutory Common Reserve Fund ^(a)		
Beginning balance	211,970	203,557
Transfer from retained earnings	12,987	8,413
Ending balance	224,957	211,970
Special Reserve-Safety Fund Reserve		
Beginning balance	9,231	10,810
Safety fund reserve	(741)	(1,579)
Ending balance	8,490	9,231
Currency Translation Differences ^(b)		
Beginning balance	(35,532)	(32,848)
Currency translation differences	3,758	(2,684)
Ending balance	(31,774)	(35,532)
Other Reserves		
Beginning balance	(10,417)	(10,645)
Transaction with non-controlling interests	—	(15)
Fair value changes in equity investments measured at fair value through other comprehensive income	(10)	79
Share of the other comprehensive income of associates and joint ventures accounted for using the equity method	654	(4)
Cash flow hedges, net of deferred tax	11,273	—
Other	(3,760)	168
Ending balance	(2,260)	(10,417)
	<u>332,721</u>	<u>308,560</u>

- (a) Pursuant to the PRC regulations and the Company's Articles of Association, the Company is required to transfer 10% of its net profit, as determined under the PRC accounting regulations, to a Statutory Common Reserve Fund ("Reserve Fund"). Appropriation to the Reserve Fund may cease when the fund aggregates to 50% of the Company's registered capital. The transfer to this reserve must be made before distribution of dividends to shareholders.

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The Reserve Fund shall only be used to make good previous years' losses, to expand the Company's production operations, or to increase the capital of the Company. Upon approval of a resolution of shareholders' in a general meeting, the Company may convert its Reserve Fund into share capital and issue bonus shares to existing shareholders in proportion to their original shareholdings or to increase the nominal value of each share currently held by them, provided that the balance of the Reserve Fund after such issuance is not less than 25% of the Company's registered capital.

- (b) The translation reserve comprises all foreign currency differences arising from the translation of the financial statements of foreign operations.

33 DEFERRED TAXATION

The movements in the deferred taxation account are as follows:

	2022 RMB	2021 RMB	2020 RMB
At beginning of the year	(14,477)	(5,016)	2,848
Transfer to profit and loss (Note 12)	14,033	(9,685)	(7,666)
(Debit)/credit to other comprehensive income	(873)	224	(198)
At end of the year	<u>(1,317)</u>	<u>(14,477)</u>	<u>(5,016)</u>

Deferred tax balances before offset are attributable to the following items:

	December 31, 2022 RMB	December 31, 2021 RMB
Deferred tax assets:		
Receivables and inventories	14,479	9,124
Tax losses	1,560	1,892
Impairment, depreciation and depletion of long-term assets	10,498	8,250
Others	8,672	7,897
Total deferred tax assets	<u>35,209</u>	<u>27,163</u>
Deferred tax liabilities:		
Accelerated tax depreciation	9,436	16,023
Others	27,090	25,617
Total deferred tax liabilities	<u>36,526</u>	<u>41,640</u>
Net deferred tax liabilities	<u>(1,317)</u>	<u>(14,477)</u>

Deferred tax balances after offset are listed as follows:

	December 31, 2022 RMB	December 31, 2021 RMB
Deferred tax assets	19,699	12,161
Deferred tax liabilities	21,016	26,638

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At December 31, 2022, certain subsidiaries of the Group did not recognize deferred tax asset of deductible tax losses carried forward of RMB 112,702 (2021: RMB 109,752), of which RMB 5,229 (2021: RMB 13,866) was incurred for the year ended December 31, 2022, because it was not probable that the related tax benefit will be realized. These deductible tax losses carried forward of RMB 274, RMB 629, RMB 3,833, RMB 2,580 and RMB 105,386 will expire in 2023, 2024, 2025, 2026, 2027 and thereafter, respectively.

34 ASSET RETIREMENT OBLIGATIONS

	2022	2021	2020
	RMB	RMB	RMB
At beginning of the year	129,405	114,819	137,935
Net liabilities incurred, including reassessment ⁽ⁱ⁾	11,954	16,057	(24,059)
Liabilities settled	(4,955)	(5,969)	(3,510)
Accretion expense (Note 10)	5,681	4,696	5,107
Currency translation differences	(4)	(198)	(654)
At end of the year	<u>142,081</u>	<u>129,405</u>	<u>114,819</u>

- (i) In 2020, domestic oil and gas field companies adjusted the discount period with reference to the remaining life corresponding to the proved developed reserves in each block, updated various oil and gas assets retirement standards based on the latest legal requirements, technology and price levels, reviewed the adopted discount rate, and then recalculate and adjust the provision for the asset retirement expense of oil and gas properties at the end of the year. The changes in related accounting estimates and new liabilities provided resulted in a reduction in estimated liabilities of RMB 24,059.

Asset retirement obligations relate to oil and gas properties (Note 16).

35 PENSIONS

The Group participates in various employee retirement benefit plans (Note 3(z)). Expenses incurred by the Group in connection with the retirement benefit plans for the year ended December 31, 2022 amounted to RMB 20,728 (2021: RMB 19,939, 2020: RMB 16,833).

For the years ended December 31, 2022, 2021 and 2020, the Group had no forfeited in the defined contribution plans available for the Group used to reduce the existing contribution level.

36 CONTINGENT LIABILITIES

(a) Bank and other guarantees

At December 31, 2022 and 2021, the Group did not guarantee related parties or third parties any significant borrowings or others.

(b) Environmental liabilities

The PRC has enacted comprehensive environmental laws and regulations that affect the operation of the oil and gas industry. Management believes that there are no probable liabilities under existing legislation, except for the amounts which have already been reflected in the consolidated financial statements, which may have a material adverse effect on the financial position of the Group.

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As of December 31, 2022, the amounts of asset retirement obligations which have already been reflected in the consolidated financial statements relating to environmental liability were RMB 142,081 (2021: RMB 129,405) (Note 34).

(c) Legal contingencies

During the reporting period, the Group has complied with domestic and overseas laws and regulatory requirements. Notwithstanding certain insignificant lawsuits as well as other proceedings outstanding, management believes that any resulting liabilities will not have a material adverse effect on the financial position of the Group.

(d) Group insurance

The Group has insurance coverage for certain assets that are subject to significant operating risks, third-party liability insurance against claims relating to personal injury, property and environmental damages that result from accidents and employer liabilities insurance. The potential effect on the financial position of the Group of any liabilities resulting from future uninsured incidents cannot be estimated by the Group at present.

37 COMMITMENTS

(a) Capital commitments

At December 31, 2022, the Group's capital commitments contracted but not provided for, mainly relating to property, plant and equipment were RMB 882 (2021: RMB 882). These capital commitments are transactions mainly with CNPC and its fellow subsidiaries.

(b) Exploration and production licenses

The Company is obligated to make annual payments with respect to its exploration and production licenses to the Ministry of Natural Resources. Payments incurred were RMB 482 for the year ended December 31, 2022 (2021: RMB 744, 2020: RMB 700).

According to the current policy, estimated annual payments for the next five years are as follows:

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
	<u>RMB</u>	<u>RMB</u>
Within one year	500	500
Between one and two years	500	500
Between two and three years	500	500
Between three and four years	500	500
Between four and five years	500	500

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38 MAJOR CUSTOMERS

The Group's major customers are as follows:

	2022		2021		2020	
	Revenue	Percentage of total revenue	Revenue	Percentage of total revenue	Revenue	Percentage of total revenue
	RMB	%	RMB	%	RMB	%
China Petrochemical Corporation and its fellow subsidiaries	121,312	4	136,500	5	98,636	5
CNPC and its fellow subsidiaries	81,112	2	69,058	3	63,623	3
	<u>202,424</u>	<u>6</u>	<u>205,558</u>	<u>8</u>	<u>162,259</u>	<u>8</u>

39 RELATED PARTY TRANSACTIONS

CNPC, the immediate parent of the Company, is a limited liability company incorporated in PRC and directly controlled by the PRC government. Equity interest and voting rights of CNPC in the Company in 2022 was 80.54% (2021: 80.41%)

Related parties include CNPC and its fellow subsidiaries, their associates and joint ventures, other state-owned enterprises and their subsidiaries which the PRC government has control, joint control or significant influence over, and enterprises which the Group is able to control, jointly control or exercise significant influence over, key management personnel of the Company and CNPC and their close family members.

(a) Transactions with CNPC and its fellow subsidiaries, associates and joint ventures

The Group has extensive transactions with other companies in CNPC and its fellow subsidiaries, associates and joint ventures. Due to these relationships, it is possible that the terms of the transactions between the Group and other members of CNPC and its fellow subsidiaries, associates and joint ventures are not the same as those that would result from transactions with other related parties or wholly unrelated parties.

The principal related party transactions with CNPC and its fellow subsidiaries, associates and joint ventures, which were carried out in the ordinary course of business, are as follows:

The Company and CNPC entered into a new Comprehensive Products and Services Agreement on August 27, 2020 for a period of three years effective from January 1, 2021. The Comprehensive Products and Services Agreement provides for a range of products and services which may be required and requested by either party. The products and services to be provided by CNPC and its fellow subsidiaries to the Group under the Comprehensive Products and Services Agreement include construction and technical services, production services, supply of material services, social services, ancillary services and financial services. The products and services required and requested by either party are provided in accordance with (1) government-prescribed prices; or (2) where there is no government-prescribed price, with reference to relevant market prices; or (3) where neither (1) nor (2) is applicable, then the actual cost incurred or the agreed contractual prices are used.

On August 25, 2011, based on the Land Use Rights Leasing Contract signed for a period of 50 years from 2000, the Company and CNPC entered into a supplemental agreement to the Land Use Rights Leasing Contract which took effect on January 1, 2012. The expiry date of the supplemental agreement is the same as the Land Use Rights Leasing Contract, which is in 2050. The Company and CNPC may adjust area and rental payable for the leased land parcels every three years taking into consideration of production and operations of the Company and the prevailing market price. On August 27, 2020, the Company and CNPC each issued a confirmation letter

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to the Land Use Rights Leasing Contract, which adjusted the rental payable and the area for the leased land parcels with effect from January 1, 2021. The Company agreed to rent from CNPC and its fellow subsidiaries parcels of land with an aggregate area of approximately 1,142 million square metres with annual rental payable (exclusive of tax and government charges) approximately RMB 5,673 based on the area of leased land parcels and the current market conditions. Apart from the annual rental payable and are for the leased parcels, the other terms in the Land Use Rights Leasing Contract and supplemental agreement remained.

On August 24, 2017, the Company entered into a new Buildings Leasing Contract with CNPC, which took effect on January 1, 2018 for a period of 20 years. The Company and CNPC may adjust the area of buildings leased and the rental fees every three years as appropriate by reference to the production and operations of the Company and the prevailing market prices, but the adjusted rental shall not exceed the comparable fair market prices. On August 27, 2020, the Company and CNPC issued a confirmation letter to the Buildings Leasing Contract, which adjusted the annual rental payable and the area for the leased which took effect on January 1, 2021. Buildings covering an aggregate area of 1,287.5 thousand square meters were leased at annual rental payable approximately RMB 713 in accordance with the confirmed rental area and the current property market conditions. Apart from the annual rental payable and area of the leased building, the other terms in the Building Leasing Contract remains unchanged.

Transactions with CNPC and its fellow subsidiaries, associates and joint ventures are summarised as follows:

- Sales of goods represent the sale of crude oil, refined products, chemical products and natural gas, etc. The total amount of these transactions amounted to RMB 128,265 for the year ended December 31, 2022 (2021: RMB 115,587, 2020: RMB 105,535).
- Sales of services principally represent the provision of services in connection with the transportation of crude oil and natural gas, etc. The total amount of these transactions amounted to RMB 34,872 for the year ended December 31, 2022 (2021: RMB 8,313, 2020: RMB 8,593).
- Purchases of goods and services principally represent construction and technical services, production services, social services, ancillary services and material supply services, etc. The total amount of these transactions amounted to RMB 489,353 for the year ended December 31, 2022 (2021: RMB 416,561, 2020: RMB 321,858).
- Purchases of assets principally represent the purchases of manufacturing equipment, office equipment and transportation equipment, etc. The total amount of these transactions amounted to RMB 1,196 for the year ended December 31, 2022 (2021: RMB 1,051, 2020: RMB 767).
- Interest income represents interests from deposits placed with CNPC and its fellow subsidiaries. The total interest income amounted to RMB 705 for the year ended December 31, 2022 (2021: RMB 270, 2020: RMB 381). The balance of deposits at December 31, 2022 was RMB 47,656 (2021: RMB 36,489).
- Interest expense and other financial service expense, principally represents interest charged on the loans from CNPC and its fellow subsidiaries, insurance fee charged on the insurance services from CNPC and its fellow subsidiaries, etc. The total amount of these transactions amounted to RMB 4,435 for the year ended December 31, 2022 (2021: RMB 4,878, 2020: RMB 8,051).
- The borrowings from CNPC and its fellow subsidiaries at December 31, 2022 were RMB 133,453 (2021: RMB 133,800).
- Rents and other payments paid to CNPC and its fellow subsidiaries including (1) the rental expense paid by the Group according to Land Use Rights Leasing Contract and Buildings Leasing Contract; (2) the payable by the Group (including all rents, leasing service fees and prices for exercising purchase

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options) for the period according to the leasing agreements entered into by the Group and CNPC and its fellow subsidiaries. The total rents and other payments amounted to RMB 6,996 for the year ended December 31, 2022. (2021: RMB 6,797, 2020: RMB 8,294).

Amounts due from and to CNPC and its fellow subsidiaries, associates and joint ventures included in the following accounts captions are summarized as follows:

	December 31, 2022 RMB	December 31, 2021 RMB
Accounts receivable	3,810	7,395
Prepayments and other current assets	20,566	24,925
Financial assets at fair value through other comprehensive income	1,000	1,850
Intangible and other non-current assets	16,758	15,696
Accounts payable and accrued liabilities	57,459	49,526
Contract liabilities	520	613
Lease liabilities	98,143	101,453

(b) Key management compensation

	Year End December 31,		
	2022 RMB'000	2021 RMB'000	2020 RMB'000
Emoluments and other benefits	16,515	15,143	16,598
Contribution to retirement benefit scheme	2,052	1,568	1,338
	<u>18,567</u>	<u>16,711</u>	<u>17,936</u>

(c) Transactions with other state-controlled entities in the PRC

Apart from the transactions with CNPC and its fellow subsidiaries, associates and joint ventures, the Group's transactions with other state-controlled entities include but are not limited to the following:

- Sales and purchases of goods and services;
- Purchases of assets;
- Lease of assets; and
- Bank deposits and borrowings

These transactions are conducted in the ordinary course of the Group's business.

40 SEGMENT INFORMATION

The Group is principally engaged in a broad range of petroleum related products, services and activities. The Group's operating segments comprise: Oil, Gas and New energy resources, Refining, Chemicals and New materials, Marketing, Natural Gas Sales and Head Office and Other. On the basis of these operating segments, the management of the Company assesses the segmental operating results and allocates resources. Sales between operating segments are conducted principally at market price. Additionally, the Group presents

geographical information based on entities located in regions with a similar risk profile.

The Oil, Gas and New energy resources segment is engaged in the exploration, development, transportation, production, marketing of crude oil and natural gas and new energy resources business.

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The Refining, Chemicals and New materials segment is engaged in the refining of crude oil and petroleum products, production and marketing of primary petrochemical products, derivative petrochemical products, other chemical products and new materials business.

The Marketing segment is engaged in the marketing of refined products and non-oil products, and the trading business.

The Natural Gas Sales segment is engaged in the transportation and sale of natural gas.

The Head Office and Other segment relates to cash management and financing activities, the corporate center, research and development, and other business services supporting the other operating business segments of the Group.

In 2020, in order to promote the transformation and upgrading of refining and chemicals business, promote the quality-oriented business development of refined products and lubricating oil production and marketing, promote specialized operation, market-oriented operation, lean management and integrated coordination, the Group transferred PetroChina Fuel Oil Co., Ltd. and PetroChina Lubricant Company from Marketing to Refining, Chemicals and New materials segment, and synchronize budget control and performance evaluation indicator accordingly.

The accounting policies of the operating segments are the same as those described in Note 3 — “Summary of Principal Accounting Policies”.

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The segment information for the operating segments for the years ended December 31, 2022, 2021 and 2020 are as follows:

Year Ended December 31, 2022	Oil, Gas and New Energy Resources	Refining, Chemicals and New Materials	Marketing	Natural Gas Sales	Head Office and Other	Total
	RMB	RMB	RMB	RMB	RMB	RMB
Revenue	929,279	1,164,596	2,771,894	519,211	5,473	5,390,453
Less: Intersegment sales	(777,846)	(827,572)	(520,502)	(22,156)	(3,210)	(2,151,286)
Revenue from external customers	151,433	337,024	2,251,392	497,055	2,263	3,239,167
Depreciation, depletion and amortisation	(182,989)	(27,265)	(20,563)	(5,329)	(1,890)	(238,036)
Including: Impairment losses of property, plant and equipment	(17,090)	(3,394)	(1,231)	(680)	—	(22,395)
Profit/(loss) from operations	165,748	40,570	14,374	12,957	(16,989)	216,660
Finance costs:						
Exchange gain						23,772
Exchange loss						(25,590)
Interest income						4,738
Interest expense						(21,554)
Total net finance costs						(18,634)
Share of profit / (loss) of associates and joint ventures	4,765	37	(195)	8,323	2,321	15,251
Profit before income tax expense						213,277
Income tax expense						(49,295)
Profit for the year						163,982
Segment assets	1,457,543	482,452	596,463	171,643	1,646,141	4,354,242
Other assets						31,806
Investments in associates and joint ventures	46,053	2,205	17,829	169,903	33,579	269,569
Elimination of intersegment balances (a)						(1,982,132)
Total assets						2,673,485
Capital expenditures	221,592	41,771	5,069	4,936	939	274,307
Segment liabilities	581,261	243,417	404,991	135,361	590,604	1,955,634
Other liabilities						74,530
Elimination of intersegment balances (a)						(894,532)
Total liabilities						1,135,632

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Year Ended December 31, 2021	Oil, Gas and New Energy Resources RMB	Refining, Chemicals and New Materials RMB	Marketing RMB	Natural Gas Sales RMB	Head Office and Other RMB	Total RMB
Revenue	688,334	974,972	2,170,062	417,022	3,894	4,254,284
Less: Intersegment sales	(571,705)	(650,018)	(397,485)	(19,526)	(1,201)	(1,639,935)
Revenue from external customers	116,629	324,954	1,772,577	397,496	2,693	2,614,349
Depreciation, depletion and amortisation	(175,329)	(28,466)	(20,338)	(5,288)	(1,848)	(231,269)
Including: Impairment losses of property, plant and equipment	(20,218)	(4,681)	(1,396)	(176)	—	(26,471)
Profit/(loss) from operations	68,452	49,740	13,277	43,965	(14,281)	161,153
Finance costs:						
Exchange gain						13,377
Exchange loss						(12,839)
Interest income						2,984
Interest expense						(19,739)
Total net finance costs						(16,217)
Share of profit of associates and joint ventures	2,633	68	680	7,570	2,316	13,267
Profit before income tax expense						158,203
Income tax expense						(43,507)
Profit for the year						114,696
Segment assets	1,391,129	457,914	520,938	164,934	1,573,900	4,108,815
Other assets						17,014
Investments in associates and joint ventures	44,289	1,966	19,020	169,611	30,899	265,785
Elimination of intersegment balances (a)						(1,889,352)
Total assets						2,502,262
Capital expenditures	178,259	54,487	10,982	6,750	700	251,178
Segment liabilities	550,365	199,159	349,609	128,490	566,602	1,794,225
Other liabilities						103,412
Elimination of intersegment balances (a)						(804,244)
Total liabilities						1,093,393

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Year Ended December 31, 2020	Oil, Gas and New Energy Resources RMB	Refining, Chemicals and New Materials RMB	Marketing RMB	Natural Gas Sales RMB	Head Office and Other RMB	Total RMB
Revenue	530,807	774,775	1,497,533	370,771	3,547	3,177,433
Less: Intersegment sales	(437,670)	(492,667)	(276,503)	(35,437)	(1,320)	(1,243,597)
Revenue from external customers	93,137	282,108	1,221,030	335,334	2,227	1,933,836
Depreciation, depletion and amortization	(150,849)	(23,893)	(17,833)	(19,475)	(1,825)	(213,875)
Including: Impairment losses of property, plant and equipment	(15,364)	—	(3)	—	—	(15,367)
Profit / (loss) from operations	23,092	(1,834)	(2,906)	72,410	(14,825)	75,937
Finance costs:						
Exchange gain						14,387
Exchange loss						(14,279)
Interest income						3,023
Interest expense						(26,528)
Total net finance costs						(23,397)
Share of (loss)/profit of associates and joint ventures	(616)	(24)	(728)	2,128	2,773	3,533
Profit before income tax expense						56,073
Income tax expense						(22,588)
Profit for the year						33,485
Segment assets	1,452,554	432,022	489,984	195,353	1,631,577	4,201,490
Other assets						17,361
Investments in associates and joint ventures	41,461	1,289	18,239	160,730	28,884	250,603
Elimination of intersegment balances ^(a)						(1,981,328)
Total assets						2,488,126
Capital expenditures	186,620	21,810	16,294	21,143	626	246,493
Segment liabilities	658,521	186,332	321,460	192,456	573,340	1,932,109
Other liabilities						80,104
Elimination of intersegment balances ^(a)						(890,708)
Total liabilities						1,121,505

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Geographical information

	Revenue			Non-current assets ^(b)	
	2022	2021	2020	December 31, 2022	December 31, 2021
	RMB	RMB	RMB	RMB	RMB
China's mainland	1,888,906	1,626,616	1,212,821	1,853,462	1,838,505
Other	1,350,261	987,733	721,015	178,343	165,117
	<u>3,239,167</u>	<u>2,614,349</u>	<u>1,933,836</u>	<u>2,031,805</u>	<u>2,003,622</u>

- (a) Elimination of intersegment balances represents elimination of intersegment accounts and investments.
(b) Non-current assets mainly include non-current assets other than financial instruments and deferred tax assets.

41 APPROVAL OF FINANCIAL STATEMENTS

The financial statements were approved by the Board of Directors on April 28, 2023.

In accordance with the Accounting Standards Update 2010-03 Extractive Activities – Oil and Gas (Topic 932): Oil and Gas Reserve Estimation and Disclosures (an update of Accounting Standards Codification Topic 932 Extractive Activities – Oil and Gas or “ASC 932”) issued by the Financial Accounting Standards Board and corresponding disclosure requirements of the U.S. Securities and Exchange Commission, this section provides supplemental information on oil and gas exploration and development; and results of operation related to oil and gas producing activities of the Company and its subsidiaries (the “Group”) and also the Group’s investments that are accounted for using the equity method of accounting.

The supplemental information presented below covers the Group’s proved oil and gas reserves estimates, historical cost information pertaining to capitalized costs, costs incurred for property acquisitions, exploration and development activities, result of operations for oil and gas producing activities, standardized measure of estimated discounted future net cash flows and changes in estimated discounted future net cash flows.

The “Other” geographic area includes oil and gas producing activities principally in countries such as Kazakhstan, Peru and Canada. As the Group does not have significant reserves held through its investments accounted for using the equity method, information presented in relation to these equity method investments is presented in the aggregate.

Proved Oil and Gas Reserve Estimates

Proved oil and gas reserves cannot be measured exactly. Reserve estimates are based on many factors related to reservoir performance that require evaluation by the engineers interpreting the available data, as well as price and other economic factors. The reliability of these estimates at any point in time depends on both the quality and quantity of the technical and economic data, and the production performance of the reservoirs as well as engineering judgment. Consequently, reserve estimates are subject to revision as additional data become available during the producing life of a reservoir. When a commercial reservoir is discovered, proved reserves are initially determined based on limited data from the first well or wells. Subsequent data may better define the extent of the reservoir and additional production performance, well tests and engineering studies will likely improve the reliability of the reserve estimate. The evolution of technology may also result in the application of improved recovery techniques such as supplemental or enhanced recovery projects, or both, which have the potential to increase reserves.

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AND PRODUCTION ACTIVITIES (UNAUDITED) — (Continued)
(All amounts in millions, except for the per share data and otherwise stated)

Proved oil and gas reserves are the estimated quantities of crude oil and natural 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 the time at which 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.

Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12-month period before the ending date of the period covered by this report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions. The costs shall be that prevailing at the end of the period.

Proved developed oil and gas reserves are proved reserves that can be expected to be recovered:

- a. 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.
- b. Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

Proved undeveloped oil and gas reserves are proved reserves that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

The taxes, fees and royalty in China are domestic tax schemes and are paid in cash to PRC authorities. The proved reserves includes quantities that are ultimately produced and sold to pay these taxes, fees and royalty.

Proved reserve estimates as of December 31, 2022, 2021 and 2020 were based on reports prepared by DeGolyer and MacNaughton, McDaniel & Associates, Ryder Scott and GLJ independent engineering consultants.

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Estimated quantities of net proved crude oil and condensate and natural gas reserves and of changes in net quantities of proved developed and undeveloped reserves for each of the periods indicated are as follows:

	Crude Oil and Condensate	Natural Gas	Total – All products
	(million barrels)	(billion cubic feet)	(million barrels of oil equivalent)
Proved developed and undeveloped reserves			
The Group			
Reserves at December 31, 2019	7,253	76,236	19,959
Changes resulting from:			
Purchase	15	107	33
Revisions of previous estimates	(1,553)	(595)	(1,652)
Improved recovery	108	—	108
Extensions and discoveries	385	4,976	1,215
Sales	(80)	(66)	(91)
Production	(922)	(4,221)	(1,626)
Reserves at December 31, 2020	5,206	76,437	17,946
Changes resulting from:			
Purchase	—	—	—
Revisions of previous estimates	1,160	(2,011)	825
Improved recovery	117	27	121
Extensions and discoveries	472	4,885	1,286
Sales	(3)	(2)	(3)
Production	(888)	(4,420)	(1,625)
Reserves at December 31, 2021	6,064	74,916	18,550
Changes resulting from:			
Purchase	2	—	2
Revisions of previous estimates	511	(3,156)	(14)
Improved recovery	125	131	146
Extensions and discoveries	622	6,237	1,662
Sales	—	—	—
Production	(906)	(4,675)	(1,685)
Reserves at December 31, 2022	6,418	73,453	18,661
Proved developed reserves at:			
December 31, 2020	4,654	42,077	11,667
December 31, 2021	5,375	42,576	12,471
December 31, 2022	5,574	41,508	12,492
Proved undeveloped reserves at:			
December 31, 2020	552	34,360	6,279
December 31, 2021	689	32,340	6,079
December 31, 2022	844	31,945	6,169

Equity method investments

Share of proved developed and undeveloped reserves of associates and joint ventures			
December 31, 2020	196	363	256
December 31, 2021	208	511	294
December 31, 2022	176	537	265

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At December 31, 2022, total proved developed and undeveloped reserves of the Group and equity method investments is 18,926 million barrels of oil equivalent (2021: 18,844 million barrels of oil equivalent, 2020: 18,202 million barrels of oil equivalent), comprising 6,594 million barrels of crude oil and condensate (2021: 6,272 million barrels, 2020: 5,402 million barrels) and 73,990 billion cubic feet of natural gas (2021: 75,427 billion cubic feet , 2020: 76,800 billion cubic feet).

At December 31, 2022, 5,696 million barrels (2021: 5,286 million barrels, 2020: 4,375 million barrels) of crude oil and condensate and 72,165 billion cubic feet (2021: 73,460 billion cubic feet, 2020: 74,794 billion cubic feet) of natural gas proved developed and undeveloped reserves of the Group are located within China's mainland, and 722 million barrels (2021: 778 million barrels, 2020: 831 million barrels) of crude oil and condensate and 1,288 billion cubic feet (2021: 1,456 billion cubic feet , 2020: 1,643 billion cubic feet) of natural gas proved developed and undeveloped reserves of the Group are located overseas.

Capitalized Costs

	December 31, 2022 <u>RMB</u>	December 31, 2021 <u>RMB</u>
The Group		
Property costs and producing assets	2,156,134	1,969,409
Support facilities	500,489	483,216
Construction-in-progress	122,564	119,583
Total capitalized costs	<u>2,779,187</u>	<u>2,572,208</u>
Accumulated depreciation, depletion and amortization	<u>(1,820,994)</u>	<u>(1,635,837)</u>
Net capitalized costs	<u>958,193</u>	<u>936,371</u>
Equity method investments		
Share of net capitalized costs of associates and joint ventures	<u>20,728</u>	<u>19,056</u>

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Costs Incurred for Property Acquisitions, Exploration and Development Activities

2022			
	China's mainland RMB	Other RMB	Total RMB
The Group			
Property acquisition costs	216	2,100	2,316
Exploration costs	38,662	551	39,213
Development costs	152,935	17,057	169,992
Total	<u>191,813</u>	<u>19,708</u>	<u>211,521</u>
Equity method investments			
Share of costs of property acquisition, exploration and development of associates and joint ventures	<u>—</u>	<u>2,324</u>	<u>2,324</u>
2021			
	China's mainland RMB	Other RMB	Total RMB
The Group			
Property acquisition costs	—	7,610	7,610
Exploration costs	37,351	879	38,230
Development costs	132,829	12,084	144,913
Total	<u>170,180</u>	<u>20,573</u>	<u>190,753</u>
Equity method investments			
Share of costs of property acquisition, exploration and development of associates and joint ventures	<u>—</u>	<u>2,110</u>	<u>2,110</u>
2020			
	China's mainland RMB	Other RMB	Total RMB
The Group			
Property acquisition costs	—	3,712	3,712
Exploration costs	35,862	1,051	36,913
Development costs	129,738	16,420	146,158
Total	<u>165,600</u>	<u>21,183</u>	<u>186,783</u>
Equity method investments			
Share of costs of property acquisition, exploration and development of associates and joint ventures	<u>—</u>	<u>1,462</u>	<u>1,462</u>

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Results of Operations for Oil and Gas Producing Activities

The results of operations for oil and gas producing activities for the years ended December 31, 2022, 2021 and 2020 are presented below. "Revenue" includes sales to third parties and inter-segment sales (at arm's-length prices), net of value-added taxes. Resource tax, crude oil special gain levy and other taxes are included in "taxes other than income taxes". Income taxes are computed using the applicable statutory tax rate, reflecting tax deductions and tax credits for the respective years ended.

	2022		
	China's mainland	Other	Total
	RMB	RMB	RMB
The Group			
Revenue			
Sales to third parties	108,179	56,388	164,568
Inter-segment sales	527,206	40,485	567,691
	635,385	96,873	732,259
Production costs excluding taxes	(136,890)	(15,920)	(152,810)
Exploration expenses	(26,523)	(551)	(27,074)
Depreciation, depletion and amortization	(195,316)	(25,906)	(221,222)
Taxes other than income taxes	(76,633)	(10,093)	(86,727)
Accretion expense	(5,446)	(235)	(5,681)
Income taxes	(38,941)	(23,061)	(62,002)
Results of operations from producing activities	155,636	21,107	176,743
Equity method investments			
Share of profit for producing activities of associates and joint ventures	—	3,462	3,462
Total of the Group and equity method investments results of operations for producing activities	155,636	24,569	180,205

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	2021		
	China's mainland RMB	Other RMB	Total RMB
The Group			
Revenue			
Sales to third parties	82,654	40,695	123,349
Inter-segment sales	388,611	25,149	413,760
	471,265	65,844	537,109
Production costs excluding taxes	(126,916)	(12,177)	(139,093)
Exploration expenses	(23,418)	(830)	(24,248)
Depreciation, depletion and amortization	(128,297)	(29,417)	(157,714)
Taxes other than income taxes	(28,611)	(5,810)	(34,421)
Accretion expense	(4,557)	(139)	(4,696)
Income taxes	(22,084)	(11,210)	(33,294)
Results of operations from producing activities	137,382	6,261	143,643
Equity method investments			
Share of profit for producing activities of associates and joint ventures	—	1,904	1,904
Total of the Group and equity method investments results of operations for producing activities	137,382	8,165	145,547
	2020		
	China's mainland RMB	Other RMB	Total RMB
The Group			
Revenue			
Sales to third parties	32,662	30,855	63,517
Inter-segment sales	306,623	12,408	319,031
	339,285	43,263	382,548
Production costs excluding taxes	(124,154)	(9,605)	(133,759)
Exploration expenses	(18,851)	(482)	(19,333)
Depreciation, depletion and amortization	(134,007)	(15,953)	(149,960)
Taxes other than income taxes	(18,865)	(2,690)	(21,555)
Accretion expense	(4,905)	(202)	(5,107)
Income taxes	(9,369)	(5,340)	(14,709)
Results of operations from producing activities	29,134	8,991	38,125
Equity method investments			
Share of profit for producing activities of associates and joint ventures	—	(76)	(76)
Total of the Group and equity method investments results of operations for producing activities	29,134	8,915	38,049

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Standardized Measure of Discounted Future Net Cash Flows

The standardized measure of discounted future net cash flows related to proved oil and gas reserves at December 31, 2022, 2021 and 2020 is based on the prices used in estimating the Group's proved oil and gas reserves, year-end costs, currently enacted tax rates related to existing proved oil and gas reserves and a 10% annual discount factor. "Future cash inflows" are net of value-added taxes. Corporate income taxes are included in "future income tax expense". Other taxes are included in "future production costs" as production taxes.

The standardized measure of discounted future net cash flows related to proved oil and gas reserves at December 31, 2022, 2021 and 2020 is as follows:

	RMB
The Group	
At December 31, 2022	
Future cash inflows	6,719,784
Future production costs	(2,421,683)
Future development costs	(557,902)
Future income tax expense	(711,177)
Future net cash flows	3,029,022
Discount at 10% for estimated timing of cash flows	(1,271,392)
Standardized measure of discounted future net cash flows	<u>1,757,630</u>
	RMB
The Group	
At December 31, 2021	
Future cash inflows	5,244,811
Future production costs	(1,723,220)
Future development costs	(462,411)
Future income tax expense	(549,495)
Future net cash flows	2,509,685
Discount at 10% for estimated timing of cash flows	(1,108,580)
Standardized measure of discounted future net cash flows	<u>1,401,105</u>
	RMB
The Group	
At December 31, 2020	
Future cash inflows	4,366,906
Future production costs	(1,470,460)
Future development costs	(445,462)
Future income tax expense	(441,668)
Future net cash flows	2,009,316
Discount at 10% for estimated timing of cash flows	(947,035)
Standardized measure of discounted future net cash flows	<u>1,062,281</u>

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At December 31, 2022, RMB1,652,887 (2021: RMB 1,336,419, 2020: RMB 1,028,640) of standardized measure of discounted future net cash flows related to proved oil and gas reserves located within China's mainland and RMB 104,743 (2021: RMB 64,686, 2020: RMB 33,641) of standardized measure of discounted future net cash flows related to proved oil and gas reserves located overseas.

Share of standardized measure of discounted future net cash flows of associates and joint ventures:

December 31, 2022	47,342
December 31, 2021	14,788
December 31, 2020	8,573

Changes in Standardized Measure of Discounted Future Net Cash Flows

Changes in the standardized measure of discounted net cash flows for the Group for each of the years ended December 31, 2022, 2021 and 2020 are as follows:

	Year Ended December 31,		
	2022	2021	2020
	RMB	RMB	RMB
The Group			
Beginning of the year	1,401,105	1,062,281	1,325,069
Sales and transfers of oil and gas produced, net of production costs	(467,040)	(344,643)	(215,390)
Net changes in prices and production costs and other	551,666	407,882	(358,008)
Extensions, discoveries and improved recovery	241,644	150,979	112,834
Development costs incurred	6,876	23,675	39,238
Revisions of previous quantity estimates	(1,871)	88,332	(138,772)
Accretion of discount	130,881	86,172	146,137
Net change in income taxes	(105,898)	(73,272)	156,122
Net change due to purchases and sales of minerals in place	267	(301)	(4,949)
End of the year	<u>1,757,630</u>	<u>1,401,105</u>	<u>1,062,281</u>