

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: 1-15138

中国石油化工股份有限公司

CHINA PETROLEUM & CHEMICAL CORPORATION

(Exact name of Registrant as specified in its charter)

The People's Republic of China

(Jurisdiction of incorporation or organization)

22 Chaoyangmen North Street

Chaoyang District, Beijing, 100728

The People's Republic of China

(Address of principal executive offices)

Mr. Huang Wensheng

22 Chaoyangmen North Street

Chaoyang District, Beijing, 100728

The People's Republic of China

Tel: +86 (10) 5996 0028

Fax: +86 (10) 5996 0386

(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

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

Title of Each Class	Trading Symbol(s)	Name of Each Exchange On Which Registered
None	None	None

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

American Depositary Shares, each representing 100 H Shares of par value RMB1.00 per share*

H Shares of par value RMB1.00 per share (not for trading, but only in connection with the registration of American Depositary Shares)

* The American Depositary Shares program had been terminated as of December 5, 2022.

(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15 (d) of the Act.

None

(Title of Class)

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

H Shares, par value RMB1.00 per share 24,780,936,600

A Shares, par value RMB1.00 per share 95,115,471,046

[Table of Contents](#)

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

☒ Yes ☐ No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

☐ Yes ☒ No

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

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15 (d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

☒ Yes ☐ No

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

Large accelerated filer ☒ 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 12b-2 of the Exchange Act).

☐ Yes ☒ No

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

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

☐ Yes ☐ No

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

Table of Contents

CERTAIN TERMS AND CONVENTIONS	1
CURRENCIES AND EXCHANGE RATES	2
FORWARD-LOOKING STATEMENTS	2
ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISORS	2
ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE	3
ITEM 3. KEY INFORMATION	3
ITEM 4. INFORMATION ON THE COMPANY	16
ITEM 4A. UNRESOLVED STAFF COMMENTS	41
ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS	41
ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES	60
ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS	71
ITEM 8. FINANCIAL INFORMATION	73
ITEM 9. THE OFFER AND LISTING	74
ITEM 10. ADDITIONAL INFORMATION	75
ITEM 11. QUALITATIVE AND QUANTITATIVE DISCLOSURES ABOUT MARKET RISK	89
ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES	93
ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES	95
ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS	95
ITEM 15. CONTROLS AND PROCEDURES	95
ITEM 16. RESERVED	97
ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT	97
ITEM 16B. CODE OF ETHICS	97
ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES	97
ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES NOT APPLICABLE.	97
ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS	98
ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT	98
ITEM 16G. COMPARISON OF NEW YORK STOCK EXCHANGE CORPORATE GOVERNANCE RULES AND CHINA CORPORATE GOVERNANCE RULES FOR LISTED COMPANIES	98
ITEM 16H. MINE SAFETY DISCLOSURE	98
ITEM 16I. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS	99
ITEM 17. FINANCIAL STATEMENTS	99
ITEM 18. FINANCIAL STATEMENTS	99
ITEM 19. EXHIBITS	100

CERTAIN TERMS AND CONVENTIONS

Definitions

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

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

Conversion Conventions

Unless otherwise specified, conversion of crude oil from tonnes to barrels are made at a rate of one tonne to 7.10 barrels for crude oil we produced domestically and one tonne to 7.20, 7.22 and 7.26 barrels for the years ended December 31, 2020, 2021 and 2022, respectively, for crude oil produced overseas. Conversions of natural gas from cubic meters to cubic feet are made at a rate of one cubic meter to 35.31 cubic feet; and 6,000 cubic feet of natural gas is converted to one BOE.

Glossary of Technical Terms

Unless otherwise indicated in the context, references to:

- “BOE” are to barrels-of-oil equivalent.
- “comprehensive processing capacity of oil refining” are to the maximum capacity to process crude oil of a refinery when operating without bottlenecks during the entire process, which is calculated at, under the conditions of relatively satisfactory economic performance of the production solution, satisfactory product quality, compliance with pollutant emission standards, and bottleneck-free production operations, among others, the maximum crude oil processing capacity of a calibrated refinery when operating through full-process configured refining units, utilities and supporting facilities; the calculation of the processing capacity assumes 8,400 working hours per year.
- “rated capacity” are to the output capacity of a given production unit or, where appropriate, the throughput capacity, calculated by estimating the number of days in a year that such production unit is expected to operate, excluding downtime for regular maintenance, and multiplying that number by an amount equal to the unit’s optimal daily output or throughput, as the case may be.

CURRENCIES AND EXCHANGE RATES

We publish our financial statements in Renminbi. Unless otherwise indicated, all translations from Renminbi to US dollars in this annual report were made at RMB6.7261 to US\$1.00, the average of mid-point exchange rates of Renminbi as published by the PRC State Administration of Foreign Exchange (SAFE) for the year of 2022. We do not suggest that the Renminbi or US dollar amount can be converted to US dollars or Renminbi, as appropriate, at this exchange rate or any specific exchange rate.

FORWARD-LOOKING STATEMENTS

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

- amount and nature of future exploration and development,
- future prices of and demand for our products,
- future earnings and cash flow,
- development projects and drilling prospects,
- future plans and capital expenditures,
- estimates of proved oil and gas reserves,
- exploration prospects and reserves potential,
- expansion and other development trends of the petroleum and petrochemical industry,
- production forecasts of oil and gas,
- expected production or processing capacities, including expected rated capacities and primary distillation capacities, of units or facilities not yet in operation,
- expansion and growth of our business and operations,
- our prospective operational and financial information, and
- the deregistration of our ADSs and H Shares under the U.S. securities regulations.

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

- fluctuations in crude oil and natural gas prices,
- fluctuations in the price of our refined oil and chemical products,
- failures or delays in achieving production from development projects,
- failures to receive crude oil and gas storage and transportation services subject to terms we agreed to,
- potential acquisitions and other business opportunities,
- general economic, market and business conditions, and
- other risks and factors beyond our control.

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

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISORS

Not applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

ITEM 3. KEY INFORMATION

A. [RESERVED]

B. CAPITALIZATION AND INDEBTEDNESS

Not applicable.

C. REASONS FOR THE OFFER AND USE OF PROCEEDS

Not applicable.

D. RISK FACTORS

Risks Relating to the PRC and the Delisting of Our ADSs

We voluntarily delisted from the NYSE which could reduce the liquidity and market price of our ADSs and underlying shares.

We have voluntarily delisted our ADS from listing on the NYSE and terminated our ADS program. While holders of ADSs have the right to return the ADSs to the depository in exchange for our H shares, the delisting of ADSs and termination of ADS program had and will continue to have substantial negative impact on the liquidity of our ADSs and the rights of the ADS holders.

Additionally, we intend to file a Form 15F with the SEC to deregister our ADSs and the underlying H shares under the Exchange Act once we have met the criteria for deregistration. Thereafter, all of our reporting obligations under the Exchange Act will be terminated unless the Form 15F is subsequently withdrawn or denied. Deregistration of ADSs and termination of our reporting obligations under the Exchange Act are expected to become effective 90 days after the filing of Form 15F with the SEC.

Changes in government regulations and legislation may limit our activities and affect our business operations and the price of our securities, and result in risks that affect our future financing plans and securities offerings, the liquidity of our investors, and the enforcement of court judgment and shareholders' rights.

We are a joint stock limited company incorporated in China, our controlling shareholder is Sinopec Group Company, which is in turn controlled by the State-owned Assets Supervision and Administration Commission of the State Council of China ("SASAC"). SASAC, in its capacity as a shareholder of Sinopec Group Company and pursuant to PRC laws and regulations including the Company Law and the Law on State-owned Assets in Enterprises as well as the articles of association of Sinopec Group Company, exercises the rights accorded to it as a shareholder, including the right to appoint non-employee representative directors of Sinopec Group Company. We are a publicly-traded company and our directors are elected at general meetings through cumulative voting in accordance with our articles of association. Shareholders who individually or jointly hold 3% or more of our total voting shares are entitled to nominate director candidates. Sinopec Group Company, as our controlling shareholder, may nominate directors at our general meetings pursuant to the Company Law of the PRC and our articles of association, but such nominees will only be appointed to our board with the approval of our shareholders. Our board of directors consists of executive directors, non-executive directors and independent non-executive directors. We have also established five special committees under our board of directors, each of which is in turn comprised, solely or partly, as appropriate, of our independent non-executive directors. In the course of our business operation, our management makes decisions with respect to our business strategies and operations in accordance with applicable laws and regulations, listing rules, and industrial policies based on procedures stipulated in our articles of association and other corporate governance documents and policies. All major corporate matters relating to our business operations are submitted for the approval by our directors. In order to safeguard the interest of all our shareholders, our directors review and approve matters relating to our operations and our management with due care, diligence and skill, and convene general meetings of shareholders and present certain matters to the shareholders for their approval, in each case in accordance with our articles of association. Because our business strategies are formulated, and our business operations are conducted, based on and pursuant to applicable laws and regulations and industrial policies, any changes thereto that bear on our business operations will likely have an impact on our business and our results of operations. In addition, as a state-controlled publicly-traded company, we are required to abide by laws and regulations relating to the management of and supervision over state-owned assets.

As a major integrated petroleum and petrochemical company operating in China, our business operations may be directly affected by new laws and regulations covering our industries that are enacted by the PRC government or the exercise of its supervisory power over our industries. The PRC government, while gradually liberalizing its regulations on entry into and operation in the petroleum and petrochemical industry and improving and developing the market-based regime – where the price of regular domestically-produced natural gas and imported pipeline natural gas is regulated, and the price of imported LNG, non-regular domestically-produced natural gas and natural gas traded via natural gas exchange is determined by the market – continues to exercise certain controls over such industry in China. These control mechanisms include granting the licenses to explore for and produce crude oil and natural gas, granting the licenses to market and distribute crude oil and refined oil products, setting periodically the upper limit of the retail prices for gasoline and diesel, collecting special oil income levies, deciding import and export quotas and procedures, setting safety, environmental and quality standards, and formulating policies to save energy and reduce emission. In addition, the PRC government may continue to make and adopt changes to its existing macroeconomic and industry policies for the petroleum and petrochemical industry, including further reforming and improvement of pricing mechanism of refined oil products and natural gas, which could impact the development of the petroleum and petrochemical industry in China and the production and operations of the market players in such industry. Our board of directors and management, when developing and formulating our business plan and operating strategies, are required to take into consideration those control mechanisms and industry policies, some of which may impose constraints and limitations on our business planning and strategy-making, and we cannot assure you there will not be material adverse effects on our operations and profitability. The Special Administrative Measures for Entry of Foreign Investment (Negative List) (2021 Version) currently in effect, or the Negative List, while requiring enterprises incorporated in China and operating in industries that are subject to foreign investment prohibition to obtain approval from relevant competent government authorities for their overseas securities offerings and listings, does not prohibit or impose restrictions on foreign investments in the petroleum and petrochemical industries. However, we cannot rule out the possibility that the PRC government may in the future amend and revise PRC laws and regulations in this area to advance new energy security policies. In addition, the Measures for the Security Review of Foreign Investments, which was issued by the PRC government and came into effect on January 18, 2021, provides that a foreign investor must seek the approval of the competent PRC regulatory authorities prior to investing in key energy and resources sectors that have national security implications where such investment will result in such investor obtaining actual control over the invested enterprises. The Measures for the Security Review of Foreign Investments also provides that PRC regulatory authorities should enact implementing rules applicable to the acquisition by foreign investors of publicly-traded securities of listed companies that have or may have national security consequences, and pending the enactment of such implementing rules, there are uncertainties as to whether there are restrictions on open-market purchase of our H shares by foreign investors under the said measures. Given that Sinopec Group Company, our controlling shareholder, held approximately 67.84% of our outstanding shares as of April 15, 2023, we do not expect any foreign investor will be able to obtain control in us by investing in our publicly-traded H shares. Meanwhile, other than approvals and filing processes required under prevailing PRC laws and regulations, our ability to transfer money or other assets out of China or enter into business transactions with non-Chinese parties in the ordinary course of our business have not been substantively affected by the Measures for the Security Review of Foreign Investments. If the PRC government, in keeping with its national security policy, promulgates new laws and regulations in the future to regulate and restrict our ability to enter into cross-border transactions or obtain foreign investments, we may be required to make adjustments to our operating and financing plans, which may in turn affect our business operations and financial position, and have material impacts on the value of our securities. If, in the future, foreign investments in petroleum and/or petrochemical industries in China become prohibited or restricted, investors in our securities may need to seek exit for their investments in accordance with applicable laws and regulations, which may result in a significant decline in the price of our securities and materially and adversely affect the value of the investments made by such foreign investors.

In light of the dynamic nature of the Chinese economy and the continuing evolution of the PRC legal system, the PRC authorities may promulgate new laws and regulations regulating the petroleum and petrochemical industry, or overall investment and market activities in general. While certain legislative changes are required by law to go through review and comment procedures open to certain market participants or the general public, and to the extent that such changes are made to regulate our business operation, we may have the opportunity to participate in such review and comment procedures during the policy and rule-making process, we cannot assure you that the rules or policies finally adopted will be in our favor. The new regulations and policies or the amendment to the current ones may at times only afford a short period for transition or adjustment, and may influence the implementation of our established business plans and operation strategies, subject us to enhanced compliance scrutiny, result in more compliance costs and expenses, or otherwise adversely affect our business by requiring adjustments to our business plans and operations. For example, the PRC government has recently adopted, and may further adopt, stricter laws and regulations with respect to the environment protection and carbon emission, the compliance of which may lead to higher operating costs and expenses, and a prolonged project development timetable. As a result of those new or amended rules and policies, we may not have control over the timing or outcome of approvals of certain of our planned projects, and may encounter significant constraints on our ability to implement our business strategies, to develop or expand our business operations or to maximize our profitability, which could in turn adversely affect our operations by raising our operating costs and lowering our profits or otherwise impeding our efforts to improve our operational efficiency and profitability, and further adversely affect the market expectations of our business operations. Depending on the extent to which our operations are so affected, there may be a material change in our operations and the value of our securities.

Specifically, the PRC government has recently taken various legislative initiatives in the area of data security and to address market monopoly concerns. With respect to data security protection, the revised Measures for Cybersecurity Review took effect on February 15, 2022 and provides that (i) critical information infrastructures operators, or CIIOs, must evaluate potential risks that the deployment of any products and services will have on national security prior to the procurement of such products and services, and must apply for a cybersecurity review if such products and services affect or may affect national security, and “online platform operators” must apply for a cybersecurity review if any of their data processing activities affects or may affect national security, and (ii) if an “online platform operator” that is in possession of personal data of more than one million users intends to list its securities on a foreign stock exchange, it must apply for a cybersecurity review. However, the measures have not clarified if any follow-on offering of securities by us will be regulated as a “listing shares on a foreign stock exchange” or whether public companies already listed overseas would be subject to regular cybersecurity reviews. With respect to antimonopoly laws and regulations, the PRC Anti-monopoly Law prohibits monopolistic activities by market participants such as the entering into monopoly agreements, the abuse of dominant market position and anti-competitive activities that have or may have an effect of eliminating or reducing competition. In addition, the National Development and Reform Commission, the State Administration of Market Regulation and the Cyberspace Administration of China, or the CAC, among others, jointly issued the Several Opinions on Promotion of the Standardized, Sound and Sustainable Development of Platform Economy, which embodies legislative and regulatory anti-monopoly initiatives in relation to the “platform economy.” The Opinions on Promotion of the Standardized, Sound and Sustainable Development of Platform Economy focuses on the following aspects of the platform economy: formulation and promulgation of regulations on the prohibition of unfair online anticompetitive activities; future issuance of detailed rules applicable to data processing activities conducted by online platform enterprises; the formulation of regulations on pricing; the investigation on monopoly and unfair competition activities; and the enforcement against monopolistic agreements, abuse of dominant market position and unlawful market concentration. We do not believe the abovementioned rules have any material impact on our capacity to operate our business in the ordinary course, obtain foreign investment, or complete and maintain our listing overseas at other stock exchanges. However, we may be categorized by PRC authorities as a CIIO or an online platform operation in possession of personal data of more than one million users due to our extensive business operations. In addition, given our significant market share in the PRC petroleum and petrochemical industries, we cannot rule out the possibility that the abovementioned rules, or other new rules and policies to be formulated and promulgated in relation to data security, market monopoly or other aspects of our business operation, and the enforcement thereof may impose more stringent compliance requirements on us, compel us to adjust our business plan and the way we operate our business, or otherwise have a material impact on our ability to obtain foreign investments or to list in the U.S. or other foreign countries. We have established an information technology department dedicated to the overseeing of our data security and cybersecurity compliance practice and we organize regular trainings for the relevant staff on regulations issued by CAC to date. Our information technology department leads the effort to ensure our practices with respect to data security and cybersecurity conform to CAC regulations. In 2022, we have not received any notices imposing administrative penalties against us or demanding any remedial actions be taken in relation to data security matters from the CAC, the Ministry of Public Security or its local counterparts, or any industrial regulatory authorities. Based on the foregoing facts and legal advice we have received from Haiwen & Partners, our PRC legal counsel, in relation thereto, we believe our current business operation does not violate regulations or policies that have been issued by the CAC to date.

We are required to obtain permits and approvals for the operation of our business pursuant to applicable PRC laws, regulation and industrial policies and we are required to carry out our business operations in compliance with the terms of these permits and approvals. See “Item 4 Information of the Company — B. Business Overview — Regulatory Matters” for a list of material permits and approvals for our business operation. Haiwen & Partners, our PRC legal counsel, has advised us that we have obtained all approvals and permits required for our business operations under the PRC laws and regulations (other than those that do not have an impact on our business operations taken as a whole), and we have neither been notified any instance of denial of such permits or approvals nor been subject to any material administrative penalties from the PRC regulatory authorities with respect thereto. However, we may be required to obtain additional permits, licenses and approvals in the future and if we fail to obtain such permits, licenses and approvals in a timely manner, there could be material adverse impacts on our business operations. On February 17, 2023, the China Securities Regulatory Commission (the “CSRC”) released the Trial Administrative Measures of Overseas Securities Offering and Listing by Domestic Companies and five supporting guidelines, or, collectively, the Filing Rules, which took effect on March 31, 2023. According to the Filing Rules, domestic companies in mainland China that directly or indirectly offer or list their securities in an overseas market are required to file with the CSRC. In addition, an overseas listed company must also submit the filing with respect to its follow-on offerings, issuance of convertible corporate bonds and exchangeable bonds, and other equivalent offering activities, within a specific time frame requested under the Filing Rules. Therefore, we will be required to file with the CSRC for our overseas offering of equity and equity linked securities in the future within the applicable scope of the Filing Rules. In addition, we may be subject to legal liabilities under the PRC Securities Law if our offering or the trading of our securities overseas is deemed to “disrupt the order of PRC domestic market and harm legitimate rights and interests of PRC domestic investors”. We have received from the CSRC the approval for our public offerings of equity securities in the past. We are required to continue to comply with the provisions of the PRC Securities Law and the Filing Rules and we remain subject to the supervision of the PRC regulatory authorities. However, we cannot assure you that we will timely receive such approval if we wish to make any new equity offerings in the future. If we fail to obtain any requisite approvals with respect to future offerings of our equity securities to foreign investors, or if we inadvertently conclude that such approvals are not required, our ability to execute our financing and equity offering plans may be significantly limited or completely hindered. In the absence of alternative sources of financing, this could impede our efforts to improve our liquidity or expand our business operation, and we cannot assure you that there will not be material negative impacts on our financial conditions and result of operations, or a significant decline in the value of our securities. Furthermore, we cannot assure you that PRC authorities will not promulgate new laws to further regulate or impose new obligations in respect of the listing of our securities. Certain of our actions in relation to our overseas listing may also constitute a violation of PRC Securities Law or other relevant laws, and as a consequence, subject us to penalties, including without limitation fines, limitations on our ability to conduct financing activities, or the suspension or termination of certain aspects of our business operations, which may in turn result in substantial difficulty for our listing overseas. Any measures taken by the PRC authorities to regulate or exert more control over securities offerings conducted overseas and foreign investments in China-based issuers may limit or hinder our ability to offer or continue to offer securities to investors, and the price of our securities may decline significantly, leading to a material adverse effect on the value of investments in our securities by investors.

In addition, foreign exchange transactions under the capital account, including principal payments in respect of foreign currency-denominated obligations, continue to be subject to significant foreign exchange controls and require the approval of the State Administration of Foreign Exchange. While we have not been denied of our applications for foreign exchange for the payment of our dividends, we cannot rule out the possibility that such control and limitation could affect our ability to obtain foreign exchange to pay cash dividends declared on our H shares (including, where applicable, ADSs representing our H shares). Consequently, we cannot assure you that your investment will not be subject to foreign exchange payment risks as a result of these foreign exchange control measures. See “Risks Relating to the PRC — Government control of currency conversion and exchange rate fluctuation may adversely affect our operations and financial results.” and “Item 8. Financial Information — A. Consolidated Statements and Other Financial Information — Dividend Distribution Policy.”

Furthermore, the primary sources of our shareholder rights are our articles of association, the PRC Company Law and the Listing Rules of the Hong Kong Stock Exchange, which, among other things, impose certain standards of conduct, fairness and disclosure on us, our directors and our controlling shareholder. In general, the protection of shareholder's rights and access to information granted by their respective provisions are different from those applicable to companies incorporated in the United States and other Western countries, and are constantly evolving. The legal system in China is a civil law system based on written statutes. Unlike common law systems, such legal system is a system in which decided legal cases or administrative actions may be of reference value but have less precedential value, and a court ruling or administrative finding is made primarily based on written statutes currently in effect. The legal system in China also evolves rapidly, and the interpretations of laws, regulations and rules may contain inconsistencies. In addition, the judicial and administrative authorities may, within the scope of their respective discretions, enforce laws and regulations inconsistently, which may result in uncertainties with respect to the interpretation and enforcement of PRC laws and regulations. While China has become a signatory to various treaties providing for the recognition and enforcement of certain foreign judgments in general, whether a specific judgment issued by a foreign court is capable of being recognized or enforced in China is still subject to uncertainties. Therefore, our investors may be faced with risks associated with the enforcement of court judgements and shareholders rights. See "Risks Relating to the PRC — Risks relating to enforcement of shareholder rights; Mandatory arbitration."

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

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

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

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

- the government, in accordance with law, to impose fines, to order correction, limitation on production or discharge, and suspend production for pollution discharge exceeding standards;
- the government to impose fines for late payment of environmental tax for the discharge of waste materials;
- the government, in accordance with law, to order correction, suspend production and impose fines for unlicensed or uncertified pollution discharge;
- the government, at its discretion, to seal up or close down any facility which has caused or may cause severe environmental damage and require it to correct or stop operations; and
- litigations and liabilities arising from pollutions and damages to the environment and public interests.

Our production activities produce substantial amounts of liquid, gas and solid waste materials. Our production and operation activities may cause certain disturbance to the ecology. Pursuant to the governmental requirements, we have taken several measures to protect biodiversity and mitigate the negative impacts, such as ecological restoration, rehabilitation, and compensation, among others. Also, the PRC government has moved, and may move further, toward more rigorous enforcement of applicable laws, and toward the adoption of more stringent environmental standards.

In recent years, we have commenced exploration and production of unconventional oil and gas resources, such as shale oil and gas and coal bed methane, through the application of relatively advanced technologies. As a result, our unconventional oil and gas operations rely on unproven technology which may expose us to higher environmental compliance standards and requirements, which, in turn, would require us to incur additional expenditures on environmental matters.

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

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

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

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

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

The existing foreign exchange regulations have significantly reduced government foreign exchange controls for transactions under the current account, including trade and service related foreign exchange transactions and payment of dividends. Foreign exchange transactions under the capital account, including principal payments in respect of foreign currency-denominated obligations, continue to be subject to significant foreign exchange controls and require the approval of the State Administration of Foreign Exchange. These limitations could affect our ability to obtain foreign exchange through debt or equity financing, or to obtain foreign exchange. The PRC government has stated publicly that it intends to make the Renminbi freely convertible in the future. However, we cannot predict whether the PRC government will continue its existing foreign exchange policy and when the PRC government will allow free conversion of Renminbi. The main sources of our cash denominated in foreign currencies are our foreign currency-denominated business revenue and the conversion of Renminbi to foreign currencies. As of the date of this annual report, we have not been subject to any material restrictions in respect of our foreign exchange transactions and we have not suffered any material adverse impact on our ability to conduct our international operations in the ordinary course, pay dividends or carry out our investment plan as a result thereof. We currently have sufficient foreign currencies in cash to meet our financial obligations denominated in currencies other than Renminbi. If we become subject to more stringent foreign exchange control measures in the future that prevent us from timely obtaining funds in foreign currencies, our ability to discharge financial obligations denominated in foreign currencies in accordance with our business plans may be materially and adversely affected. Any failure to secure sufficient funds in foreign currencies may further result in our material defaulting or breaching certain covenants or agreements binding on us, prevent us from making dividend payments as planned and restrict our ability to continue or expand our investments and business operations overseas.

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

Certain judgments obtained against our directors and/or officers by our shareholders may not be enforceable.

We are a company limited by shares incorporated under the laws of China. The majority of our directors and executive officers reside within China or Hong Kong. As a result, your ability to bring an action against us or against these individuals in the United States in the event that you believe your rights have been infringed under the U.S. federal securities laws or otherwise, or the procedures in relation thereto, may be subject to uncertainties. Even if you are successful in bringing an action of this kind, whether you can successfully, pursuant to the laws of the PRC or Hong Kong enforce a judgment against our directors and officers in China is uncertain.

Risks relating to enforcement of shareholder rights; Mandatory arbitration.

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

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

The Public Company Accounting Oversight Board was previously unable to inspect or investigate completely registered public accounting firms headquartered in China, including our auditor. Our securities will be prohibited from trading in the United States under the Holding Foreign Companies Accountable Act, or the HFCAA, in the future if the PCAOB is unable to inspect or completely investigate auditors located in China.

Pursuant to the Holding Foreign Companies Accountable Act, or the HFCA Act, if the SEC determines that we have filed audit reports issued by a registered public accounting firm that has not been subject to inspections by the PCAOB for two consecutive years, the SEC shall prohibit our securities from being traded on a national securities exchange or in the over-the-counter trading market in the U.S. The PCAOB issued a HFCA Act Determination Report to the SEC on December 16, 2021, notifying SEC of its determination that that it is unable to inspect or investigate completely registered public accounting firms headquartered in China and our auditor was subject to that determination.

In May 2022, the SEC conclusively listed us as a Commission-Identified Issuer under the HFCA Act following the filing of our annual report on Form 20-F for the fiscal year ended December 31, 2021. On December 15, 2022, the PCAOB issued a report that vacated its December 16, 2021 determination and removed mainland China from the list of jurisdictions where it is unable to inspect or investigate completely registered public accounting firms. For this reason, we do not expect to be identified as a Commission-Identified Issuer under the HFCA Act after we file this annual report on Form 20-F for the fiscal year ended December 31, 2022.

Each year, the PCAOB will determine whether it can inspect and investigate completely audit firms in China, among other jurisdictions. If the PCAOB determines in the future that it no longer has full access to inspect and investigate completely accounting firms in China and we use an accounting firm headquartered in China to issue an audit report on our financial statements filed with the SEC, we would be identified as a Commission-Identified Issuer following the filing of the annual report on Form 20-F for the relevant fiscal year. In accordance with the HFCA Act, our securities would be prohibited from being traded on a national securities exchange or in the over-the-counter trading market in the U.S. if we are identified as a Commission-Identified Issuer for two consecutive years in the future.

While we voluntarily delisted our ADSs from the NYSE in September 2022 and terminated our ADR program in December 2022, a prohibition of being able to trade in the U.S. would substantially impair your ability to sell or purchase our securities when you wish to do so and would have a negative impact on the price of our securities. Also, such a prohibition would significantly affect our ability to raise capital on terms acceptable to us, or at all, which would have a material adverse impact on our business, financial condition, and prospects.

Risks Relating to Our Controlling Shareholder

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

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

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

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

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

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

Risks Relating to Our Business Operation

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

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

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

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

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

We purchased a significant portion of crude oil and other feedstock from external suppliers located in different countries and regions in the world. Our business growth requires us to source an increasing amount of crude oil from external suppliers. We continued to source our crude oil from a diversified portfolio of external suppliers to avoid any potential risks in relation to the purchase of the crude oil, however, we are still subject to the political, geographical and economic risks associated with these countries and areas. If our contractual relationships with one or more external suppliers were terminated or disrupted due to any natural disasters or political events, it is possible that we would not be able to find sufficient alternative sources of supply in a timely manner or on commercially reasonable terms. As a result, our business and financial condition would be materially and adversely affected.

Since 2020, due to factors such as the continuous pandemic of COVID-19 and its variants, the imbalance between crude oil supply and demand, the sharp decline in oil production by major oil-producing countries, geopolitical situations, and the recession of global economic growth, crude oil prices have fluctuated sharply. In addition, some extreme major incidents may also occur and causes short-term disruptions to crude oil supplies in certain regions. We have taken flexible measures in answer to such changes and incidents, however, it is still impossible for us to completely avert risks arising from the sharp fluctuations in international crude oil prices and the sudden short-term disruption to regional crude oil supply.

We rely on our collaboration agreement with PipeChina for the use of certain oil and gas storage and pipeline facilities. Any adverse change to our collaboration with PipeChina may materially impact our business operation and financial status.

In September 2020, we closed the transaction with PipeChina, pursuant to which we sold certain oil and gas storage and pipeline facilities to PipeChina in exchange for approximately 14% of the registered capital of, and cash paid by, PipeChina as consideration. We have entered into a long-term service agreement with respect to the use of oil and gas storage and pipeline facilities with PipeChina, pursuant to which PipeChina shall provide us with oil and gas transportation and storage services on the agreed terms including, among others, that PipeChina shall meet our demand of production and operation following the agreed service specifications and standards.

Due to the special nature of our business operations, especially our production, refining and marketing activities, the successful execution of our operation plan will largely depend on our access to reliable and stable performance of oil and gas storage and transportation services, through our owned self-operated storage and pipeline facilities as we did prior to the transaction with PipeChina, and/or through purchasing storage and transportation services from PipeChina and other third parties. Considering the difficulty of the construction of the oil and gas pipeline, storage and other ancillary facilities, which involves time-consuming construction projects with major capital expenditure that are subject to regulatory approvals, we expect that, in the foreseeable future, it would be hard for us to promptly construct, develop and commission oil and gas pipeline, storage and other ancillary facilities, and our main production sites will be connected with and supported by pipelines and storage facilities owned by PipeChina. As a result, the smooth operation of our business in the future will partially depend upon our collaboration relationship with PipeChina based on service agreement(s) between us and PipeChina. We do not have control over PipeChina, and all key terms of service agreements between us and PipeChina shall be determined based on the applicable laws and regulations as well as the result of arm's-length commercial negotiations between us and PipeChina, as a result of which we cannot guarantee that we will continue to secure service from PipeChina on current terms in the future. If we cannot continue to receive service from PipeChina on terms we desire, the operation of our business may be interrupted, and the results of our operations and our financial condition may be materially impacted.

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

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

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

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

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

- the quality and quantity of technical and economic data;
- the prevailing oil and gas prices applicable to our production;
- the production performance of the reservoirs; and
- the production plans.

In addition, new drilling, testing and production results achieved following completion of the estimates, assets disposal and exit from certain block may cause substantial upward or downward revisions in the estimates.

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

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

- complexity caused by unexpected geological factors;
- geological formations pressure and operation by workers that violates applicable regulations;
- HSE accidents and public safety incidents;
- adverse surface environment, weather conditions or natural disasters;
- compliance with existing or enhanced environmental regulations; or
- changes in governmental requirements and standards and risks in relations to international politics and economic situations.

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

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

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

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

- ability to generate sufficient cash flows from operations to finance our expenditures, investments and other requirements, which are affected by changes in crude oil and natural gas prices and sales volumes, and other factors;
- availability and terms of external financing;
- mix of exploration and development activities conducted on an independent basis and those conducted jointly with other partners;
- extent to which our ability to influence or adjust plans for exploration and development related expenditures is limited under joint operating agreements for those projects in which we have partners;
- government approvals required for exploration and development-related expenditures and investments in jurisdictions in which we conduct business; and
- economic, political and other conditions in jurisdictions in which we conduct business.

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

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

Our development projects and production activities may be curtailed, delayed or cancelled for many reasons, including without limitation equipment shortages or failures, natural hazards, unexpected drilling conditions, mechanical and technical difficulties caused by complex geological conditions and operating errors by our employees and the change of local government policies. These projects and activities, which include projects focused on non-conventional oil and gas exploration and development, will also often require the use of new and advanced technologies that may be expensive to develop, purchase and implement, and may not function as expected. There is a risk that any development project that we undertake may not yield expected returns. In addition, our development projects and production activities, particularly those in remote areas, could become less profitable, or unprofitable, if we experience a prolonged period of low oil or gas prices or cost overruns.

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

Many nations in the world have reached consensus on the importance and urgency of addressing climate change. The oil and gas industry in which we operate is drawing increasing concerns in recent years. A number of international, national and regional measures to limit greenhouse gas emissions have been enacted. The Paris Agreement adopted in December 2015 has placed binding commitments on nations that have ratified it since November 2016, which may lead to more stringent national and regional measures in the near future. Compliance with these measures could result in substantial impact on capital expenditure, profit and strategic growth. In addition, PRC government has undertaken to strive to peak its CO₂ emissions by 2030 and to achieve carbon neutrality by 2060, if possible, and to increase the non-fossil fuel share of all energy to around 25% by 2030 while reducing the CO₂ emissions by no less than 65% as compared with 2005. China has officially launched a national carbon exchange in 2021, and some of our power plants supporting our operation have been identified to be subject to emission control. It is expected that the scope of industries subject to such control will expand, with most of our domestic subsidiaries may be recognized as emission-control enterprises, which change could have certain effect on our business operations.

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

We have operations and assets and may seek new opportunities in various countries and regions, some of which are deemed to be subject to a high degree of political risk. These regions include Africa, Central Asia, Russia, Iraq and Iran. The operations in some of these countries and regions are and will likely continue to experience operational risks and regulatory changes, including political risks, market fluctuation, risks relating to fund security, interest rate, exchange rate, litigations, financial derivatives businesses, safety production, equipment integrity, compliance management, investment in overseas project, international operation, asset operation, tax and etc. The occurrence of any of the foregoing could disrupt or curtail our operations or development activities. These events may also limit our ability to pursue new opportunities, affect the recoverability of our assets or cause us to incur additional costs, particularly due to the long-term nature of many of our projects and the significant capital expenditure required by those projects.

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

A non-United States corporation, such as our company, will be a “passive foreign investment company” (PFIC), for United States federal income tax purposes for any taxable year, if either (a) 75% or more of its gross income for such year consists of certain types of “passive” income or (b) 50% or more of the value of our assets (generally based on the average quarterly value of our assets during the taxable year) produce or are held for the production of passive income. Depending upon the value of our assets, which may be determined based, in part, on the market price of our securities, and the nature of our assets and income over time, we could be classified as a PFIC for United States federal income tax purposes. Based on our income and assets and the market price of our securities, we do not believe that we were a PFIC for the taxable year ended December 31, 2022 and do not anticipate becoming a PFIC in the current taxable year or in the foreseeable future. Because PFIC status is a factual determination made annually after the close of each taxable year on the basis of the composition of our income and the value of our active versus passive assets for that year, there can be no assurance that we will not be a PFIC for any future taxable year. The overall level of our passive assets will be affected by how, and how quickly, we expend our liquid assets. Under circumstances where gross income from activities that produce passive income significantly increase relative to our gross income from activities that produce non-passive income or where we determine not to deploy significant amounts of cash for active purposes, our risk of becoming classified as a PFIC may substantially increase. If we were to be or become classified as a PFIC, a US Holder (as defined in “Item 10. Additional Information—E. Taxation—United States Federal Income Tax Considerations”) may incur significantly increased United States income tax on gains recognized on the sale or other disposition of our securities and on the receipt of distributions on our securities to the extent such gains or distributions are treated as an “excess distribution” under the United States federal income tax rules. For more information see “Item 10. Additional Information—E. Taxation—United States Federal Income Tax Considerations.”

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

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

COVID-19 pandemic could materially and adversely affect our business.

In 2022, the global pandemic of COVID-19 continues to spread. With the spread and dominance of the highly contagious Omicron strains, the Company has been affected by multiple rounds of clustered and large-scale infections, which have had an impact on the procurement of raw and auxiliary materials, production and operation, as well as demand for our end products. Our work arrangements, business operations, financial conditions, and business performance have all been negatively affected to varying degrees, and there have been infection cases among our employees. There remains uncertainty as to the future impact of the virus. The extent to which the COVID-19 pandemic impacts our long-term results will depend on future developments which are highly uncertain, unpredictable and beyond our control, including the appearance of new variants, the effectiveness of efforts to contain or treat cases, and future actions that may be taken in response to these developments. Consequently, the COVID-19 pandemic may continue to materially and adversely affect our business, financial condition and results of operations in the current and future years. We are closely monitoring the impacts of COVID-19 pandemic on us.

Risks Relating to Our Industry

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

Our results of operations are materially affected by economic conditions in China and elsewhere around the world. There are some uncertainty and instability in the current global economy and pandemic control, such as the protracted conflict between Russia and Ukraine, the intensification of the comprehensively competitive status between China and the United States and its impacts on the international politics and economies, significant fluctuations in international oil prices, and the continuous increase in inflationary pressures. The Chinese economy has exited from the COVID-19 pandemic and has been steadily recovering and entering a new stage of development, progressing towards high quality development, guided by its “carbon peak” and “carbon neutrality” strategic objectives, which have been progressively implemented. Our operations may also be adversely affected by factors such as trade protection policies adopted by other countries and increase in import activities facilitated by regional trade agreements.

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

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

We face strong competition from domestic and foreign competitors.

Among our competitors, some are major integrated petroleum and petrochemical companies within and outside China, which have recently become more significant participants in the petroleum and petrochemical industry in China. The PRC government has accelerated the removal of restrictions on the right to use imported crude oil and tightened the export quota for refined oil products. This development may lead to excessive refining capacity in China and intensify competition among local refineries. The Chinese crude oil and refined oil product markets are becoming increasingly dynamic and internationalized with implementation of tariff concessions and relaxation of market restrictions. As the wholesale market of refined oil products previously dominated by PetroChina Company Limited and us opens up, we are facing stronger competition from new players and imported products. Our market share of chemical products is also under stronger competitive pressure due to the increasingly active participation of diversified new market players including multinational petroleum and petrochemical companies and domestic private enterprises. We are also expected to face competition in both domestic and overseas refined oil products and petrochemical product market as a result of our domestic and international competitors' increasing production capacity. In addition, the competition among market participants on overseas premium resources, construction of LNG stations and pipeline and storage facilities, development of high-end markets and construction of terminal projects have intensified since PipeChina started its business operation and after the market of natural gas pipeline network, LNG station and gas storage facilities opened up. Increased competition may have a material adverse effect on our financial condition and results of operations.

ITEM 4. INFORMATION ON THE COMPANY

A. HISTORY AND DEVELOPMENT OF THE COMPANY

Our legal and commercial name is China Petroleum & Chemical Corporation. Our head office is located at 22 Chaoyangmen North Street, Chaoyang District, Beijing 100728, the People's Republic of China, our telephone number is (8610) 5996-0028 and our fax number is (8610) 5996-0386. We have appointed our representative office in the North America, located at 3050 Post Oak Blvd, Suite 800, Houston, 77056, with telephone number of +1 (713) 544 8888 and fax number of +1 (713) 544 8878, as our agent for service of processes for actions brought under the U.S. securities laws. The SEC maintains an Internet website that contains reports, proxy and information statements, and other information regarding us that have been filed electronically with the SEC, which can be accessed at <https://www.sec.gov>. Information about the Company and documents the Company submitted to the SEC are available on our investor relations website: http://www.sinopec.com/listco/en/investor_centre/corporate_governance/.

We were established as a joint stock limited company on February 25, 2000 under the Company Law of the PRC with Sinopec Group Company as the sole shareholder at our inception. Our principal businesses include:

- exploration for, development, production and marketing of crude oil and natural gas;
- refining of crude oil and marketing and distribution of refined oil products, including transportation, storage, trading, import and export of petroleum products;
- production and sales of petrochemical products;
- the operation in relation to hydrogen, the production, storage, transportation and sales of hydrogen, production and sales of hydrogen production, hydrogen refueling and hydrogen storage facilities and other hydrogen energy business and related services; and
- power supply business, vehicle battery charging and swapping, solar energy, wind energy and other new energy power generation, operation of new energy vehicle charging facilities, battery sales, sales of new energy vehicle battery swap facilities and other electric energy businesses and related services.

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

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

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

From July 8, 2015 to July 7, 2016, Sinopec Group Company increased its shareholding in the Company through acquisitions of our ordinary shares on the stock market in its own name or through other concerting parties, by way of acquiring 72,000,000 A shares. Immediately following the shareholding increase, Sinopec Group Company directly and indirectly held 86,345,821,101 shares of the Company. From December 1, 2021 to November 30, 2022, Sinopec Group Company, in its own name or through other concerting parties, acquired 214,766,000 H shares, immediately following which Sinopec Group Company directly and indirectly held 83,477,143,393 shares of the Company.

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

On August 2, 2016, our board of directors unanimously approved the proposal to introduce capitals from potential investors to invest in Sichuan-to-East China gas pipeline project, through our indirectly wholly-owned subsidiary Sinopec Sichuan-to-East China Natural Gas Pipeline Co., Ltd. ("Sichuan-to-East China Pipeline Co."). On December 12, 2016, Sinopec Natural Gas Limited Company, our wholly-owned subsidiary ("Natural Gas Company"), China Life Insurance Co., Ltd. ("China Life") and SDIC Communications Holding Co., Ltd. ("SDIC Communications") entered into the Capital Injection Agreement in relation to Sichuan-to-East China Pipeline Co. and agreed to collectively subscribe for 50% equity interest in Sichuan-to-East China Pipeline Co. for an aggregate amount of RMB22.8 billion in cash. Upon completion of the capital injection, China Life, SDIC Communications and the Natural Gas Company held 43.86%, 6.14% and 50% equity interest in Sichuan-to-East China Pipeline Co., respectively.

On April 27, 2017, our board of directors unanimously approved the proposal of the acquisition of equity interest in Shanghai SECCO Petrochemical Company Limited ("Shanghai SECCO") by Gaoqiao. On October 26, 2017, Gaoqiao purchased 50% equity interest in Shanghai SECCO from BP Chemicals East China Investment Limited with a cash consideration of RMB10,135 million. Before the acquisition, we and one of our subsidiaries held 30% and 20% equity interest in Shanghai SECCO, respectively. Upon completion of the acquisition, we, together with our subsidiaries, hold 100% equity interest of Shanghai SECCO, which became a subsidiary of us.

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

In July 2020, we and certain of our subsidiaries entered into transactions with PipeChina to sell the ownership of certain oil and gas pipeline assets and other facilities to PipeChina in exchange for approximately 14% of registered capital of, and cash paid by, PipeChina as consideration (the “Pipeline Transactions”). The Pipeline Transactions closed on September 30, 2020. In accordance with the arrangements of the Pipeline Transactions, we and PipeChina have entered into agreements for the continuous use of relevant oil and gas pipelines and other facilities in the future on the terms and subject to conditions set forth therein.

On July 28, 2022, the 10th meeting of the 8th session of our board of directors reviewed and approved the proposal on certain transactions with INEOS Limited (“INEOS”), and Sinopec and its subsidiary Gaoqiao, entered into a share transfer agreement with INEOS Investment (Shanghai) Co., Ltd. (“INEOS Shanghai”), pursuant to which INEOS Shanghai acquired 15% and 35% of equity interest in Shanghai SECCO held by Sinopec and Gaoqiao, respectively. Immediately after the completion of the acquisition in December 2022, Shanghai SECCO was held 50% by INEOS Shanghai, 15% by Gaoqiao, 20% by Sinopec Shanghai Petrochemical Company Ltd. and 15% by Sinopec, and Shanghai Secco ceased being a consolidated subsidiary of Sinopec.

We voluntarily delisted our ADSs from the NYSE in September 2022 and we terminated our ADR program in December 2022.

B. BUSINESS OVERVIEW

Exploration and Production

Overview

We currently explore for, develop and produce crude oil and natural gas in a number of areas in China and overseas. As of December 31, 2022, we held 351 production licenses in China, with an aggregate acreage of 38,937 square kilometers and with terms ranging from 10 to 80 years. Our production licenses may be renewed upon our application at least 30 days prior to the expiration date, which are renewable for unlimited times. During the term of our production license, we pay an annual production license fee of RMB1,000 per square kilometer.

During the reporting period of this annual report, we have no expiring proved and undeveloped fields in gross acreage or net acreage, both domestically and overseas.

As of December 31, 2022, we held 188 exploration licenses in China for various blocks in which we engaged in exploration activities, with an aggregate acreage of approximately 370 thousand square kilometers.

As of December 31, 2022, our overseas subsidiary held one production license, with an acreage of 322.57 square kilometers. It currently does not have exploration licenses. Our overseas equity-accounted investments held 74 production licenses, with an aggregate acreage of 5,357.2 square kilometers, and no exploration license.

Properties

We currently operate 251 oil and gas producing fields and blocks.

Shengli production field is our most important crude oil production field. It consists of 76 producing blocks of various sizes extending over an area of 2,597 square kilometers in northern Shandong province, all of which are our net developed acreage. Most of Shengli’s blocks are located in the Jiyang through with various oil producing layers. In 2022, Shengli production field produced approximately 166 million barrels of crude oil and 28.35 billion cubic feet of natural gas, with an average daily production of 468.17 thousand BOE.

As of December 31, 2022, the total acreage of our oil and gas producing fields and blocks in China was 17,633 square kilometers, including 10,420 square kilometers of developed acreage, all of which were net developed acreage; and 7,213 square kilometers of gross undeveloped acreage, all of which were net undeveloped acreage.

As of December 31, 2022, the total acreage of our oil and gas producing fields and blocks of our overseas subsidiary was 322.57 square kilometers, including 234.71 square kilometers of developed acreage, of which 234.71 square kilometers were net developed acreage; and 87.86 square kilometers of gross undeveloped acreage, of which 87.86 square kilometers were net undeveloped acreage.

As of December 31, 2022, the total acreage of our oil and gas producing fields and blocks of our overseas equity-accounted investments was 1,675.4 square kilometers, including 1,675.4 square kilometers of developed acreage, of which 1,675.4 square kilometers were net developed acreage; and none was gross undeveloped acreage.

Oil and Natural Gas Reserves

As of December 31, 2022, our estimated proved reserves of crude oil and natural gas in China were 3,108.6 million BOE (including 1,641.7 million barrels of crude oil and 8,801.6 billion cubic feet of natural gas), and our estimated proved reserves of crude oil and natural gas outside of China, which included a share of the estimated proved reserves of our equity-accounted investments, were 320.8 million BOE. Our estimated proved reserves do not include additional quantities recoverable beyond the term of the relevant production licenses, or that may result from extensions of currently proved areas, or from application of improved recovery processes not yet tested and determined to be economical.

We established reasonable certainty of our proved reserves estimates by using the performance methods, the volumetric methods, analogy, or a combination of multiple methods. Performance methods include, but are not limited to, decline curve analysis, material balance and reservoir simulation, which utilize extrapolations of historical production available. The volumetric method, analogy, or a combination of such methods were used where historical performance data was inadequate to establish a definitive trend or where the use of production performance data as the basis for reserves estimates was considered inappropriate. All proved undeveloped reserves were estimated by volumetric method and analogy.

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

Crude Oil Proved Reserves	As of December 31, 2022 (in millions of barrels)
Developed Subsidiaries	
China	1,489
Shengli	1,105
Others	384
Overseas	17
Subtotal	1,506
Equity-accounted investments	
China	—
Overseas	260
Subtotal	260
Total Proved Developed	1,766
Undeveloped Subsidiaries	
China	153
Shengli	41
Others	112
Overseas	—
Subtotal	153
Equity-accounted investments	
China	—
Overseas	43
Subtotal	43
Total Proved Undeveloped	196
Total Crude Oil Proved Reserves	1,962

Natural Gas Proved Reserves	As of December 31, 2022 (in billions of cubic feet)
Developed Subsidiaries	
China	7,135
Puguang	1,417
Fuling	1,632
Others	4,086
Overseas	—
Subtotal	7,135
Equity-accounted investments	
China	—
Overseas	3
Subtotal	3
Total Proved Developed	7,138
Undeveloped Subsidiaries	
China	1,667
Puguang	155
Fuling	99
Others	1,413
Overseas	—
Subtotal	1,667
Equity-accounted investments	
China	—
Overseas	1
Subtotal	1
Total Proved Undeveloped	1,668
Total Natural Gas Proved Reserves	8,806

As of December 31, 2022, approximately 153 million barrels of our crude oil proved reserves and 1,667 billion cubic feet of our natural gas proved reserves were classified as proved undeveloped reserves in China and overseas. 2.2 million barrels of crude oil and 32.6 billion cubic feet natural gas proved reserves in China have been classified as proved undeveloped for more than five years, mainly under Sinopec Shanghai Offshore Petroleum Company, one of our subsidiaries. The reason that such proved reserves had remained undeveloped for more than five years was that offshore oil and gas production sites generally had a longer construction period, which was further protracted due to the COVID-19 pandemic. The Company is currently optimizing the development plan for such reserves. The overseas reserves of the Company are located in Angola in Africa, Russia in Europe, Kazakhstan in Asia and Columbia in South America. As of the date of this report, there is no material concentration of the Company's undeveloped reserves.

During the year of 2022, a total of 350 wells were drilled in China and 101.5 wells were drilled overseas.

During the year of 2022, our proved crude oil reserves and proved crude oil reserves of our equity method investees increased by 211.48 million barrels, as a result of:

- an upward revision of previous estimate by 283.98 million barrels, comprising an upward revision of 140.64 million barrels due to increased crude oil price, an upward revision of 11.28 million barrels due to decrease in cost, an upward revision of 83.54 million barrels due to infill drilling, and an upward revision of 48.52 million barrels due to the changes in production performance;
- an increase of 89.22 million barrels by reason of the adoption of technologies and methods such as gas displacement and chemical displacement;
- an increase of 112.72 million barrels due to extension and new discoveries of crude oil fields; and
- a decrease of 274.44 million barrels due to production activities.

During the year of 2022, our proved natural gas reserves and proved natural gas reserves of our equity method investees increased by 349.17 billion cubic feet, as a result of:

- an upward revision of previous estimate by 806.25 billion cubic feet, comprising an upward revision of 50.95 billion cubic feet of proved natural gas reserves resulting from an increase in gas price, an increase of 14.34 billion cubic feet resulting from decrease in cost, an increase of 32.54 billion cubic feet due to the changes in production performance, an increase of 13.75 billion cubic feet due to the adoption of refracturing and increase of sand addition, and an increase of 694.67 billion cubic feet due to infill drilling;
- an increase of 16.61 billion cubic feet by reason of the adoption of improved recovery techniques;
- an increase of 664.16 billion cubic feet due to extension and new discoveries of gas fields; and
- a decrease of 1,137.85 billion cubic feet due to production activities.

Noteworthy changes in proved undeveloped reserves during the year of 2022 are as follows:

- our proved undeveloped crude oil reserves increased by 23.32 million barrels, resulting from an increase of 72.54 million barrels due to adjustments in our drilling plan, and an increase of 0.14 million barrels due to extension and new discoveries of crude oil fields, partially offset by a conversion of 49.36 million barrels from proved undeveloped crude oil reserves to proved developed crude oil reserves through our production activities; and
- our proved undeveloped natural gas reserves decreased by 48.43 billion cubic feet, resulting from a conversion of 588.78 billion cubic feet from proved undeveloped natural gas reserves to proved developed natural gas reserves through our productions activities, partially offset by an increase of 540.35 billion cubic feet due to adjustments in our drilling plan.

Total capital expenditure incurred in converting proved undeveloped reserves into proved developed reserves amounted to RMB13.29 billion, including RMB12.8 billion and RMB0.49 billion incurred in connection with our operations in China and overseas, respectively, in 2022.

During the year of 2021, our proved crude oil reserves and proved crude oil reserves of our equity method investees increased by 207.96 million barrels, as a result of:

- an upward revision of previous estimate by 241.83 million barrels, comprising an upward revision of 297.16 million barrels due to increased crude oil price, an upward revision of 14.99 million barrels due to infill drilling, an upward revision of 25.61 million barrels due to the extension of our existing licenses, and an upward revision of 6.60 million barrels due to improved production performance, partially offset by a downward revision of 102.53 million barrels due to the increase in cost;
- an increase of 127.76 million barrels by reason of the adoption of technologies and methods such as gas displacement and chemical displacement;
- an increase of 111.66 million barrels due to the extension of and new discoveries in the Chengdao oil field and Shunbei oil and gas field; and
- a decrease of 273.29 million barrels due to production activities.

During the year of 2021, our proved natural gas reserves and proved natural gas reserves of our equity method investees increased by 265.62 billion cubic feet, as a result of:

- a decrease of 1,111.21 billion cubic feet due to production activities;

- an upward revision of previous estimate by 662.30 billion cubic feet of proved natural gas reserves, comprising an increase of 149.59 billion cubic feet resulting from an increase in oil and gas price, an increase of 227.67 billion cubic feet due to improved production performance, an increase of 56.65 billion cubic feet due to the addition of compression for gas wells, an increase of 120.01 billion cubic feet due to the adoption of refracturing, and an increase of 155.45 billion cubic feet due to infill drilling, partially offset by a decrease of 47.07 billion cubic feet due to increase in cost;
- an increase of 36.28 billion cubic feet by reason of the adoption of improved recovery techniques; and
- an increase of 678.25 billion cubic feet due to the extension and new discoveries in Puguang gas field, Weirong gas field and Yongchuan gas field.

During the year of 2020, our proved crude oil reserves and proved crude oil reserves of our equity method investees decreased by 198.35 million barrels, as a result of:

- a downward revision of previous estimate by 149.36 million barrels due to a downward revision of 293.19 million barrels due to reduced crude oil price, partially offset by an upward revision of 62.54 million barrels due to cost control, an upward revision of 8.87 million barrels due to infill drilling, an upward revision of 66.08 million barrels due to improved production performance, and an upward revision of 6.35 million barrels due to the extension of overseas licenses;
- an increase of 100.33 million barrels resulting from the application of improved recovery techniques such as gas displacement and chemical displacement;
- an increase of 130.90 million barrels due to the extensions and new discoveries in Tahe oil field, Shunbei oil and gas field, Chunfeng oil field, Angola oil field, etc.; and
- a decrease of 280.22 million barrels due to production activities.

During the year of 2020, our proved natural gas reserves and proved natural gas reserves of our equity method investees increased by 965.58 billion cubic feet, as a result of:

- an upward revision of previous estimate by 835.26 billion cubic feet, comprising an upward revision of 40.94 billion cubic feet due to cost control, an upward revision of 168.96 billion cubic feet due to improved production performance, an upward revision of 59.61 billion cubic feet due to the application of techniques such as adding compression for gas wells, an upward revision of 127.55 billion cubic feet due to the application of techniques such as re-fracturing, an upward revision of 474.23 billion cubic feet due to infill drilling, and an upward revision of 1.73 billion cubic feet due to the extension of overseas licenses, partially offset by a downward revision of 37.76 billion cubic feet due to the decrease in gas price;
- an increase of 31.69 billion cubic feet resulting from the application of improved recovery techniques;
- an increase of 1,170.96 billion cubic feet due to the extension and new discoveries in Chuanxi gas field, Dongsheng gas field, Weirong gas field and others; and
- a decrease of 1,072.33 billion cubic feet due to production activities.

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

Our RMC consists of our senior managements, the senior management of related divisions at our headquarters level, our exploration and production institution and our Branches in each oil field. The current Chairman of our RMC, Mr. Liu Hongbin, Senior Vice President of the company, has over 30 years of experience in the oil and gas industry. A majority of our RMC members hold doctor's or master's degrees and our RMC members have an average of 20 years of technical experience in relevant industry fields, such as geology, development and economics.

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

Oil and Natural Gas Production

In 2022, we produced an average of 1,255.7 thousand BOE per day in China, of which approximately 54.72% was crude oil and 45.28% was natural gas. We produced an average of 84.24 thousand BOE per day overseas, of which 97.8% was crude oil and 2.2% was natural gas.

The following tables set forth our average daily production of crude oil and natural gas for the years ended December 31, 2020, 2021 and 2022. The production of crude oil includes condensate.

	Year Ended December 31,		
	2020 ⁽¹⁾	2021 ⁽²⁾	2022 ⁽³⁾
	(in thousands of barrels)		
Average Daily Crude Oil Production			
China	682	684	687
Subsidiaries	682	684	687
Shengli	454	455	455
Others	228	229	232
Overseas	84	83	82
Subsidiary	17	14	14
Equity-accounted investments	67	69	68
Total Crude Oil Production	766	767	769

Note:

(1) Includes 0.48 thousand BOE of crude oil consumed in the production.

(2) Includes 0.49 thousand BOE of crude oil consumed in the production.

(3) Includes 0.44 thousand BOE of crude oil consumed in the production.

	Year Ended December 31,		
	2020 ⁽¹⁾	2021 ⁽²⁾	2022 ⁽³⁾
	(in millions of cubic feet)		
Average Daily Natural Gas Production			
China	2,921	3,277	3,412
Subsidiaries	2,921	3,277	3,412
Puguang	598	651	617
Fuling	647	695	696
Others	1,676	1,931	2,099
Overseas	9	9	10
Equity-accounted investments	9	9	10
Total Natural Gas Production	2,930	3,286	3,422

Note :

(1) Includes 145.82 million cubic feet of natural gas consumed in the production.

(2) Includes 163.59 million cubic feet of natural gas consumed in the production.

(3) Includes 222.27 million cubic feet of natural gas consumed in the production.

Lifting Cost & Realized Prices

The following table sets forth our average lifting costs per BOE of crude oil produced, average sales prices per barrel of crude oil and average sales prices per thousand cubic meters of natural gas for the years ended December 31, 2020, 2021 and 2022.

	Weighted Average	China (RMB)	Overseas ⁽¹⁾
For the year ended December 31, 2022			
Average petroleum lifting cost per BOE	112.80	107.72	188.56
Average realized sales price			
Per barrel of crude oil	613.35	605.72	676.97
Per thousand cubic feet of natural gas	44.72	44.72	—
For the year ended December 31, 2021			
Average petroleum lifting cost per BOE	113.91	108.42	193.94
Average realized sales price			
Per barrel of crude oil	415.85	411.93	448.4
Per thousand cubic feet of natural gas	40.61	40.61	—
For the year ended December 31, 2020			
Average petroleum lifting cost per BOE	105.28	101.67	154.41
Average realized sales price			
Per barrel of crude oil	269.85	266.86	294.12
Per thousand cubic feet of natural gas	37.33	37.33	—

(1) The exchange rates we used for overseas data in this table were exchange rates for each year ended December 31, 2020, 2021 and 2022, which were RMB6.90 to US\$ 1.00, RMB6.45 to US\$ 1.00 and RMB6.73 to US\$1.00, respectively.

Exploration and Development Activities

In 2022, focusing on exploration for large-scale quality reserves, we pressed ahead with high quality exploration and profit-oriented development, made considerable efforts to advance technology innovation and project guarantee, and achieved significant improvement on reserves, production and efficiency.

The following table sets forth the number of our exploratory and development wells, including a breakdown of productive wells and dry wells we drilled during the years ended December 31, 2020, 2021 and 2022.

Number of Drilled Well ⁽¹⁾	As of December 31,											
	2020				2021				2022			
	Exploratory		Development		Exploratory		Development		Exploratory		Development	
	Productive	Dry	Productive	Dry	Productive	Dry	Productive	Dry	Productive	Dry	Productive	Dry
China	383	136	2,015	3	363	129	1,828	4	364	111	1,958	3
Subsidiaries	383	136	2,015	3	363	129	1,828	4	364	111	1,958	3
Shengli	204	64	1,080	2	170	58	944	2	159	48	1,029	2
Others	179	72	935	1	193	71	884	2	205	63	929	1
Overseas	2	—	100	—	2	1	114	—	5	1	200	—
Subsidiaries	—	—	4	—	—	—	2	—	—	—	—	—
Equity-accounted investments	2	—	96	—	2	1	112	—	5	1	200	—
Total	385	136	2,115	3	365	130	1,942	4	369	112	2,158	3

(1) Number of net wells.

The following table sets forth the number of wells being drilled by us as of December 31, 2020, 2021 and 2022:

Number of Drilling Well	As of December 31,											
	2020				2021				2022			
	Gross		Net		Gross		Net		Gross		Net	
	Exploratory	Development	Exploratory	Development	Exploratory	Development	Exploratory	Development	Exploratory	Development	Exploratory	Development
China	92	212	92	212	108	201	108	201	103	207	103	207
Subsidiaries	92	212	92	212	108	201	108	201	103	207	103	207
Shengli	29	52	29	52	33	55	33	55	29	61	29	61
Others	63	160	63	160	75	146	75	146	74	146	74	146
Overseas	2	—	2	—	—	123	—	62	—	2	—	1
Subsidiaries	—	—	—	—	—	3	—	1	—	—	—	—
Equity-accounted investments	2	—	2	—	—	120	—	61	—	2	—	1
Total	94	212	94	212	108	324	108	263	103	209	103	208

The following tables set forth the number of our productive wells for crude oil and natural gas as of December 31, 2022, as compared to December 31, 2021 and 2020:

Productive Wells for Crude Oil	As of December 31,					
	2020		2021		2022	
	Gross	Net	Gross	Net	Gross	Net
China	53,240	53,240	53,851	53,851	54,089	54,089
Subsidiaries	53,240	53,240	53,851	53,851	54,089	54,089
Shengli	34,572	34,572	34,991	34,991	35,171	35,171
Others	18,668	18,668	18,860	18,860	18,918	18,918
Overseas	7,055	2,752	5,534	2,372	5,460	2,313
Subsidiaries	28	10	30	11	30	11
Equity-accounted investments	7,027	2,742	5,504	2,361	5,430	2,302
Total	60,295	55,992	59,385	56,223	59,549	56,402

Productive Wells for Natural Gas	As of December 31,					
	2020		2021		2022	
	Gross	Net	Gross	Net	Gross	Net
China	6,976	6,928	7,539	7,489	7,779	7,719
Subsidiaries	6,976	6,928	7,539	7,489	7,779	7,719
Puguang	67	67	79	79	82	82
Fuling	632	632	779	779	886	886
Others	6,277	6,229	6,681	6,631	6,811	6,751
Total	6,976	6,928	7,539	7,489	7,779	7,719

Refining

Overview

In 2022, our refinery throughputs were approximately 242.27 million tonnes. We produce a full range of refined oil products. The production of our principal refined oil products for the years ended December 31, 2020, 2021 and 2022 is as follows:

	Year Ended December 31,		
	2020	2021	2022
	(in million tonnes)		
Gasoline	57.91	65.21	59.05
Diesel	63.21	59.85	63.09
Kerosene	20.38	21.15	18.01
Light chemical feedstock	40.22	45.41	42.65
Liquefied petroleum gas	11.61	12.72	12.33
Fuel oil	7.71	11.31	11.66

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

Refining Facilities

Currently we operate 29 refineries in China. As of December 31, 2022, our comprehensive processing capacity of oil refining was 287.25 million tonnes per annum.

The following table sets forth our comprehensive processing capacity of oil refining as of and for the years ended December 31, 2020, 2021 and 2022.

	As of and for the year ended December 31,		
	2020	2021	2022
Comprehensive processing capacity of oil refining (million tonnes per annum) ⁽¹⁾	283.25	287.25	287.25
Refinery throughputs (million tonnes) ⁽²⁾	236.91	255.28	242.27

(1) The comprehensive processing capacity of oil refining and refinery throughputs of joint ventures are fully included in our statistics.

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

In 2022, our gasoline yield was 24.37%, diesel yield was 26.04%, kerosene yield was 7.43%, and light chemical feedstock yield was 17.60%. For the years ended December 31, 2020, 2021 and 2022, our overall yield for all refined oil products at our refineries was 94.77%, 94.65% and 94.96%, respectively.

The following table sets forth the comprehensive processing capacity per annum as of December 31, 2022 of each of our refineries with the comprehensive supporting of 8 million tonnes or more per annum.

Refinery	Comprehensive Processing Capacity of oil refining as of December 31, 2022 (in million tonnes per annum)
Zhenhai	27
Maoming	20
Jinling	18
Shanghai	16
Zhongke	15
Fujian	14
Yangzi	13.5
Qilu	13
Guangzhou	12.75
Tianjin	12.5
Qingdao Refining & Chemical	12
Gaoqiao	11.3
Yanshan	10
Luoyang	10
Hainan	9.2
Changling	8
Shijiazhuang	8
Jiujiang	8
Anqing	8

No new comprehensive processing capacity of oil refining was put in operation in 2022.

Source of crude oil

In 2022, approximately 89% of the crude oil required for our refinery business was imported.

Marketing of Refined Oil Products

Overview

We operate the largest sales and distribution network for refined oil products in China. In 2022, we distributed and sold approximately 162.55 million tonnes of gasoline, diesel and kerosene domestically. Most of the refined oil products sold by us are produced internally. In 2022, approximately 72.61% of gasoline sold by us and approximately 79.41% of diesel sold by us were produced internally.

The table below sets forth a summary of key data in the marketing and sales of refined oil products in the years of 2020, 2021 and 2022.

	As of December 31,		
	2020	2021	2022
Total sales volume of refined oil products (in million tonnes)*	217.91	220.79	206.74
Domestic sales volume of refined oil products (in million tonnes)	167.99	171.31	162.55
Retail	113.19	114.30	106.91
Wholesale and Distribution	54.80	57.01	55.65
Average annual throughput of service stations (in tonnes per station)	3,686	3,720	3,470
Total number of service stations under Sinopec brand	30,713	30,725	30,808
Self-operated service stations	30,707	30,725	30,808

* The total sales volume of refined oil products includes the amount of refined oil marketing and trading sales volume.

Retail

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

In 2022, we sold approximately 106.91 million tonnes of gasoline, diesel and kerosene through our retail network, representing approximately 65.77% of our total domestic gasoline, diesel, jet fuel and kerosene sales volume. Our retail network mainly consists of service stations that are wholly-owned and operated by us, and jointly-owned and generally operated or leased by us, all of which are operated under the Sinopec brand.

Wholesale and Distribution

In 2022, we sold approximately 55.65 million tonnes of refined oil products, including 12.75 million tonnes of gasoline, 32.33 million tonnes of diesel and 10.57 million tonnes of kerosene, through wholesale and distribution to independent distributors such as domestic industrial enterprises, hotels, restaurants and agricultural producers and long-term large-scale end users such as railways, airlines, shipping and public utilities.

We operate 318 storage facilities with a total capacity of approximately 18.62 million cubic meters, substantially all of which are wholly-owned by us. These storage facilities and our wholesale centers are connected to our refineries by railway, waterway and pipelines. We also own some dedicated railways, oil wharfs and oil barges, as well as a number of rail tankers and oil trucks.

Chemicals

Overview

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

Products

Intermediate Petrochemicals

We are the largest ethylene producer in China. Our rated ethylene capacity as of December 31, 2022 was 14.75 million tonnes per annum. In 2022, we produced 13.44 million tonnes of ethylene. Nearly all of our olefins production is used as feedstock for our petrochemical operations.

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

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

The following table sets forth our rated capacity per annum, production volume and major plants of production as of or for the year ended December 31, 2022 for our principal intermediate chemical products.

	Our Rated Capacity (thousand tonnes per annum)	Our Production (thousand tonnes)	Major Plants of Production
Ethylene	14,748	13,437	Yanshan, Great Wall EC*, Tianjin, Sinopec Sabic*, Shanghai, Shanghai SECCO*, Yangzi, BASF-YPC*, Zhenhai, Zhenhai R&C*, Fujian*, Gulei*, Qilu, Zhongyuan, Sino-Korean*, Guangzhou, Maoming and Zhongke
Propylene	13,021	11,879	Shengli, Yanshan, Great Wall EC*, Tianjin, Sinopec Sabic*, Shijiazhuang, Cangzhou, Shanghai, Gaoqiao, Shanghai SECCO*, Jinling, Yangzi, Qingjiang, BASF-YPC*, Zhenhai, Zhenhai R&C*, Anqing, Fujian*, Gulei*, Jiujiang, Jinan, Qilu, Qingdao R&C, Qingdao, Luoyang, Zhongyuan, Sino-Korean*, Jingmen, Baling, Changling, Guangzhou, Maoming, Beihai, Zhongke and Hainan
Benzene	6,230	4,596	Yanshan, Tianjin, Shijiazhuang, Cangzou, Shanghai, Shanghai Gaoqiao, Shanghai SECCO*, Jinling, Yangzi, BASF-YPC*, Zhenhai, Zhenhai R&C*, Anqing, Fujian*, Gulei*, Jiujiang, Jinan, Qilu, Qingdao R&C, Qingdao, Luoyang, Zhongyuan, Sino-Korean*, Jingmen, Changling, Guangzhou, Maoming, Beihai, Zhongke and Hainan
Styrene	3,650	2,806	Yanshan, Sinopec Sabic*, Shanghai SECCO*, BASF-YPC*, Zhenhai, Anqing, Gulei*, Jiujiang, Qilu, Qingdao R&C, Sino-Korean*, Baling, Guangzhou, Maoming, Zhongke and Hainan.
Para-xylene	6,924	4,721	Shanghai, Yangzi, Tianjin, Luoyang, Zhenhai, Jinling, Fujian*, Hainan and Jiujiang
Phenol	758	785	Yanshan, Gaoqiao and Sinopec Sabic*

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

Synthetic Resins

We are the largest producer of synthetic resins products in China.

The following table sets forth our rated capacity per annum, production volumes and major plants of production for each of our principal synthetic resins as of or for the year ended December 31, 2022.

	<u>Our Rated Capacity</u> (thousand tonnes per annum)	<u>Our Production</u> (thousand tonnes)	<u>Major Plants of Production</u>
Polyethylene	9,279	7,712	Yanshan, Great Wall EC*, Tianjin, Sinopec Sabic*, Shanghai, Shanghai SECCO*, Yangzi, BASF-YPC*, Zhenhai, Zhenhai R&C*, Fujian*, Qilu, Zhongyuan, Sino-Korean*, Guangzhou, Maoming and Zhongke.
Polypropylene	9,537	8,933	Yanshan, Great Wall EC*, Tianjin, Sinopec Sabic*, Shijiazhuang, Cangzhou, Shanghai, Shanghai SECCO*, Yangzi, Qingjiang, Zhenhai, Zhenhai R&C*, Fujian*, Gulei*, Jiujiang, Jinan, Qilu, Qingdao R&C*, Qingdao, Luoyang, Zhongyuan, Sino-Korean*, Jingmen, Baling, Changling, Guangzhou, Maoming, Beihai, Zhongke and Hainan.
Polyvinyl chloride	600	325	Qilu
Polystyrene	698	594	Maoming, Guangzhou, Shanghai SECCO* and BASF-YPC*
Acrylonitrile butadiene styrene	200	198	Gaoqiao

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

Synthetic Fiber Monomers and Polymers

Our principal synthetic fiber monomers and polymers are purified terephthalic acid, ethylene glycol, acrylonitrile, caprolactam, polyester, polyethylene glycol and polyamide fiber.

The following table sets forth our rated capacity per annum, our production volume and major plants of production as of or for the year ended December 31, 2022 for each type of our principal synthetic fiber monomers and polymers.

	<u>Our Rated Capacity</u> (thousand tonnes per annum)	<u>Our Production</u> (thousand tonnes)	<u>Major Plants of Production</u>
Purified terephthalic acid	2,819	1,367	Shanghai, Yangzi, Yizheng and Luoyang
Ethylene glycol	4,999	3,234	Yanshan, Tianjin, Sinopec Sabic*, Shanghai, Yangzi, BASF-YPC*, Zhenhai, Zhenhai R&C*, Fujian*, Gulei*, Sino-Korean*, Maoming and Zhongke
Acrylonitrile	990	832	Anqing, Qilu and Shanghai SECCO*
Caprolactam	909	709	Baling
Polyester	3,378	2,426	Shanghai, Yizheng, Tianjin and Luoyang

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

Synthetic Fibers

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

The following table sets forth our rated capacity per annum, production volume and major plants of production for each type of our principal synthetic fibers as of or for the year ended December 31, 2022.

	Our Rated Capacity (thousand tonnes per annum)	Our Production (thousand tonnes)	Major Plants of Production
Polyester fiber	1,531	1,016	Yizheng, Shanghai, Tianjin and Luoyang
Acrylic fiber	218	90	Shanghai, Anqing and Qilu

Synthetic Rubbers

We are the largest manufacturer of synthetic rubbers in China. Our principal synthetic rubbers products are cis-polybutadiene rubber, styrene butadiene rubber, or SBR, styreneic block copolymers (SBCs) thermoplastic elastomer, isobutadiene isoprene rubber, or IIR (brominated IIR included), and ethylene propylene rubber.

The following table sets forth our rated capacity per annum, production volume and major plants of production as of or for the year ended December 31, 2022 for each of our principal synthetic rubbers.

	Our Rated Capacity (thousand tonnes per annum)	Our Production (thousand tonnes)	Major Plants of Production
Cis-polybutadiene	450	363	Yanshan, Qilu, Maoming, Yangzi and Gaoqiao
Styrene butadiene rubber	460	388	Qilu, Yangzi, Gaoqiao, Yanshan and Baling
Styrene-butadiene-styrene thermoplastic elastomers	440	290	Yanshan, Maoming, Baling and Gulei*
Isobutylene isoprene rubber	125	5	Yanshan
Ethylene propylene rubber	75	67	Gaoqiao

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

Marketing and Sales of Petrochemicals

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

The prices of petrochemical products in China have become market-oriented. Our principal sales channels consist of (i) direct sales to domestic and foreign large- and medium-sized manufacturing enterprises, which account for more than 74.6% of our direct sales, (ii) sales to distributors, who are responsible for sales and distribution to a portion of our smaller and scattered customers or specific customers, and (iii) sales of chemical products through our e-commerce platform “Chem E-Mall,” which effectively launched an e-commerce channel of petrochemical products and improved customer experience.

Competition

Pursuant to the Anti-Monopoly Law of the PRC which became effective on August 1, 2008, as amended by the Decision on Amending the Anti-Monopoly Law of the People’s Republic of China of the Standing Committee of the National People’s Congress on June 24, 2022, when market concentration by business carriers through merger, acquisition of control through shares or assets acquisition, or acquisition of control or the ability to exercise decisive influence over other business carriers by contract or by other means reaches a threshold of declaration level prescribed by the State Council, the business carriers shall declare in advance to the Anti-monopoly Law enforcement agency, otherwise, the business carriers shall not implement such market concentration.

Refining and Marketing of Refined Oil Products

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

Chemicals

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

Patents and Trademarks

In 2022, we were granted 6,289 patents in China and overseas. As of December 31, 2022, we owned a total of 49,852 patents in China and overseas.

In 2022, we had 45 PRC material trademarks and 11 overseas material trademarks approved internally.

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

In 2022, we did not source any of our refinery throughputs of crude oil from Iran. Based on our internal reports and statistics, no revenue or net profit was recorded from trading activity with Iranian companies.

Based on our controlling shareholder, Sinopec Group Company’s response to our inquiries, it engaged in a small amount of business activities in Iran such as providing engineering services and designs in 2022. Sales revenue and profits from these business activities accounted for 0.02% and 0.13% of its total unaudited sales revenue and profits, respectively in 2022.

Regulatory Matters

Overview

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

National Development and Reform Commission (NDRC)

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

- Formulating guidance plan for annual production, import and export amount of crude oil, natural gas and petroleum products nationwide based on its forecast on macro-economic conditions in China;
- Setting the pricing policy for refined oil products; and
- Amending Guiding Catalogue of Petroleum and Chemical Industry Structural Adjustment and Petrochemical Industry Layout Planning Plan and approving certain domestic and overseas resource investment projects which are subject to NDRC’s approval as required by the Catalogue of Investment Projects Approved by the Government in effect.

National Energy Administration (NEA)

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

The Ministry of Commerce (MOFCOM)

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

Ministry of Natural Resources (MNR)

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

To operate business in China, we and all of our PRC subsidiaries are required to register with the State Administration of Market Regulation and obtain a business license with the scope of our/its business set forth therein, and obtain approvals and permits from relevant government authorities for certain specialized business activities. The table below sets forth the permits and approvals we and our PRC subsidiaries need to obtain that are material to our business.

Permits/Approvals	Underlying Business Activities	Regulatory Authorities
Exploration Permit	Exploration of crude oil and natural gas	Authorities of Geology and Mineral Resources (Ministry of Natural Resources and its counterparts)
Mining Permit	Mining, development and production of crude oil, natural gas and geothermal resources	Authorities of Geology and Mineral Resources (Ministry of Natural Resources and its counterparts)
Work Safety Permit for Non-coal Mines	Mining and production (pursuant to relevant work safety requirements) in non-coal mines	Authorities of Work Safe Regulation and Supervision (Ministry of Emergency Managements and its counterparts)
Manufacturing License for Industrial Products	Manufacture of certain industrial products	Authorities of Industrial Products Manufacture Licensing (State Administration of Market Regulation and its counterparts)
Approval for Refined Oil Retailing Business	Retailing business for Refined Oil (for petrol station)	Ministry of Commerce and its counterparts
Gas Business Permits	Gas-related business operation	Gas-regulatory and Supervision Department of Local Government (county level above)
Registration for Manufacturer of Hazardous Chemicals	Manufacture of Hazardous Chemicals	Authorities of Work Safe Regulation and Supervision (Ministry of Emergency Managements and its counterparts)
Registration for Hazardous Chemicals		
Work Safety Permit for Hazardous Chemicals	Operation of business in relation to Hazardous Chemicals (including storage thereof)	Authorities of Work Safe Regulation and Supervision (Ministry of Emergency Managements and its counterparts)
Business Permits for Hazardous Chemicals		
Pollutant Discharge Permit	Emission of pollutant to the environment	Authorities of Environment Protection
Urban Drainage License	Emission of wasted water to urban drainage facilities	Authorities of Urban Drainage (Ministry of Water Resources and its counterparts)

Regulation of Exploration and Production

Exploration and Production Rights

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

Applicants for exploration licenses must first submit applications to the MNR with respect to blocks in which they intend to engage in exploration activities. The holder of an exploration license is obligated to make an annual minimum exploration investment and pay annual exploration license fees, ranging from RMB100 to RMB500 per square kilometer, relating to the exploration blocks in respect of which the license is issued. The maximum term of an oil and gas exploration license is 7 years. Such exploration license may be renewed upon application by the holder at least 30 days prior to expiration date, with each renewal for a maximum two-year term. Under the PRC laws and regulations, we are entitled for reductions and exemptions of exploration license fees for exploration in the western, offshore and northeastern regions of China.

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

The MNR issues full production licenses to applicants on the basis of the reserve reports approved by relevant authorities. The maximum term of a full production license is 30 years unless a special dispensation is given by the State Council. Due to a special dispensation granted to us by the State Council, the maximum term of our full production licenses is 80 years. The full production license is renewable upon application by the holder at least 30 days prior to expiration of the original term. A holder of the full production license has to pay an annual full production right usage fee of RMB1,000 per square kilometer.

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

Incentives for Shale Gas Development

In order to incentivize the exploration, discovery and development of China's shale gas reserves, to increase the supply of natural gas and to relieve the imbalance between supply and demand of natural gas, the Ministry of Finance of China and China National Energy Administration issued the Notice on Subsidy for Shale Gas Development and Utilization (Ministry of Finance No. 847 [2012]), pursuant to which the central government will subsidize shale gas production companies at a rate of RMB0.4 per cubic meter of shale gas produced from 2012 to 2015.

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

In April 2015, to facilitate the development of the shale gas industry, the Ministry of Finance of China and China National Energy Administration issued the Notice on Fiscal Subsidies for Shale Gas Development and Utilization (Ministry of Finance No. 112 [2015]) to further implement the policy of fiscally subsidizing the shale gas industry during the period of the thirteenth “five-year” plan, and the subsidy will be RMB0.3 per cubic meter of shale gas produced and RMB0.2 per cubic meter of shale gas produced from 2016 to 2018 and from 2019 to 2020, respectively.

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

In June 2019, the Ministry of Finance issued the Supplemental Notice on Interim Measures for the Management of Special Funds for Renewable Energy Development (Ministry of Finance No. 298 [2019]), which cancels the fixed-rate subsidy on shale gas industry, and provides that the increased gradient subsidy shall be granted to enterprises if their production of shale gas increases over the last year, while only reduced subsidy shall be granted if the production decreases over the last year. The Notice also provides increased subsidy for the incremental production of unconventional natural gas in winter.

Price Controls on Crude Oil

According to Measures for Administration of Petroleum Products Price issued by NDRC on January 13, 2016, the crude oil price shall be determined by reference to the international market price.

Price Controls on Natural Gas

In recent years, the government has promoted the reform of natural gas pricing towards a market-oriented approach. In April 2015, NDRC unified the stock natural gas and incremental natural gas prices. In November 2015, NDRC further liberalized the pricing of natural gas by replacing the reference ceiling price for city-gate prices of non-residential natural gas with a reference base rate. In August 2017, based on the price of natural gas pipeline transmission and the adjustment of the natural gas value-added tax rate, NDRC decreased the non-residential natural gas reference city-gate prices by RMB0.1 per cubic meter, and clarified that the prices of natural gas openly traded on trading platforms such as the Shanghai Oil and Gas Exchange Center and Chongqing Oil and Gas Exchange Center shall be determined on a market-oriented basis. In May 2018, NDRC further replaced the reference ceiling price for city-gate prices of residential natural gas with a reference base rate, and thus brought the price of residential gas in line with the price of non-residential gas. In March 2019, NDRC issued the Notice on Adjusting the City-Gate Price (NDRC Pricing Circular No. 562 [2019]) to adjust the city-gate price based on adjustments on value-added tax applicable to natural gas with effective date on April 1, 2019.

Regulation of Pipelines Networks

In October 2016, NDRC issued the Interim Provisions for Management Measures of Natural Gas Pipeline Transmission Prices (for Trial Implementation) and the Interim Provisions for Supervision and Review of Natural Gas Pipeline Transmission Cost (for Trial Implementation) (NDRC Pricing Circular 2142[2016]) (the “Trial Provisions”), pursuant to which the transmission prices of 13 natural gas interprovincial pipelines were adjusted after supervision and review in August 2017. In March 2019, the NDRC further adjusted the inter-provincial pipeline transmission price of natural gas based on adjustments on the natural gas value-added tax rate. On October 1, 2020, we sold certain pipeline assets to PipeChina, and negotiated with PipeChina to determine the pipeline transmission service price, pursuant to the oil and gas pipeline transportation service pricing policy specified by the NDRC. In June, 2021, NDRC issued the Interim Provisions for Management Measures of Natural Gas Pipeline Transmission Prices and the Interim Provisions for Supervision and Review of Natural Gas Pipeline Transmission Cost (NDRC Pricing Circular 818[2021]), which took effect on January 1, 2022, under which interprovincial natural gas pipelines are categorized into four pricing regions, namely northwest, southwest, northeast and east-central, based on the market structure and distribution of natural gas in China, and rates for transmission service are determined separately on a region-specific basis.

Regulation of Refining and Marketing of Refined Oil Products

Gasoline and Diesel Prices

Gasoline and diesel prices are government-guided.

In March 2013, NDRC issued Circular on Establishment of Sound Price Formation Mechanism of Refined Oil Products (NDRC Pricing Circular 624[2013]), which specified that a reformed refined oil product price formation mechanism shall include shortening of the refined oil product price adjustment period to 10 working days. If the assessed adjustment in domestic refined oil product prices is less than RMB50 per tonne, the adjustment will be postponed to the next period. In January 2016, NDRC issued Notice on Issues Related to the Improvement of the Pricing Mechanism of Refined Oil Products (NDRC Pricing Circular 64[2016]), which sets a lower limit for price adjustments of refined oil products, and establishes a risk reserve system for oil price adjustments. In June 2022, Ministry of Finance and NDRC jointly issued the Notice on the Implementation of Phased Price Subsidies after the International Oil Prices Hit the Upper Limit (MOF Financial Construction Circular 185[2022]), which stipulates that there will not be any upward adjustment to the price of refined oil for a certain period of time in the event the crude oil price in the international markets exceeds the upper limit US\$130/bbl, and that refinery companies will receive subsidies from the central government.

Jet Fuels Price

The ex-factory price of the jet fuels will be determined by the buyers and the sellers, with reference to the price in the Singapore market.

Regulation of Crude Oil and Refined Oil Products Market

On December 4, 2006, Ministry of Commerce of the PRC promulgated the “Administrative Rules for Crude Oil Market” and “Administrative Rules for Refined Oil Products Market.”

Starting in 2015, qualified refineries has been allowed to use, and conduct business in connection with, imported crude oil. On December 4, 2019, Ministry of Commerce issued the Notice of Reform of “Release-Management-Service” on Crude Oil and Refined Oil Products to further open up the domestic oil and refined oil products market. Ministry of Commerce formally abolished the “Administrative Rules for Crude Oil Market” and “Administrative Rules for Refined Oil Products Market” on July 1, 2020, and promulgated the “Guidelines for the Administration of Petroleum Refined Oil Circulation Industry” on December 31, 2020. In September 2020, the State Council issued the “Decision on the Cancellation and Decentralization of a Batch of Administrative Licensing Items”, clarifying that “the approval of the wholesale and warehousing operation qualifications for petroleum refined oil will be cancelled, and the approval for the retail operation qualification of refined oil products will be delegated to the designated department of the municipal people’s government with local governments to implement territorial supervision responsibilities.” The domestic crude oil and refined oil product markets are increasingly open.

From August 2022 to March 2023, a national campaign aimed at regulating the refined oil industry was launched, focusing on tax evasion and illegal expansion of production capacity. On November 7, 2022, a joint notice was issued by ten governmental departments including the Ministry of Emergency Management to amend the Catalogue of Hazardous Chemicals (2015 Edition) to reintroduce diesel into the catalogue as the hazardous chemicals, and provide that operating entities which do not have warehouse and adequate facilities will not be issued business operation license with respect to hazardous chemicals, be granted access to relevant invoicing system in relation to refined oil products, and not allowed to carry out refined oil products business. This is expected to raise the market entry threshold.

Investment

Overseas investments by central state-owned enterprises involving sensitive countries or regions or sensitive industries shall be submitted to NDRC and MOFCOM for approval, and other overseas investments by central state-owned enterprises will only need to submit a filing with, or report to, NDRC and MOFCOM.

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

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

In accordance with the Administrative Measures for Overseas Investments (MOFCOM Order No. 3 [2014]) issued by MOFCOM, overseas investment shall be subject to approval or filing requirements of MOFCOM or its provincial counterparts based on its investment category. Overseas investments involving sensitive countries (regions) or sensitive industries shall be approved by MOFCOM. All other investments will require only a filing with MOFCOM.

Regulations on Overseas Offering and Listing

On February 17, 2023, the CSRC released the Trial Administrative Measures of Overseas Securities Offering and Listing by Domestic Companies and five supporting guidelines, or, collectively, the Filing Rules, which took effect on March 31, 2023. According to the Filing Rules, domestic companies in mainland China that directly or indirectly offer or list their securities in an overseas market are required to file with the CSRC. In addition, an overseas listed company must also submit the filing with respect to its follow-on offerings, issuance of convertible corporate bonds and exchangeable bonds, and other equivalent offering activities, within a specific time frame requested under the Filing Rules. Therefore, we will be required to file with the CSRC for our overseas offering of equity and equity linked securities in the future within the applicable scope of the Filing Rules.

Taxation, Fees and Royalty

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

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

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

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

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

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

Starting on January 1, 2018, environmental tax has been levied, with the original sewage charges being cancelled.

Starting in April 2019, the value-added tax rate has been further lowered.

[Table of Contents](#)

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

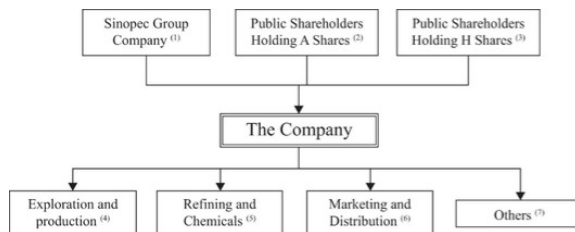
Tax Item	Tax Base	Tax Rate/Fee Rate
Enterprise income tax	Taxable income	25% effective from January 1, 2008.
Value-added tax	Revenue	9% for liquefied petroleum gas, natural gas, low-density polyethylene for production of agricultural film and fertilizers, 13% for other commodities and 6% for the taxable service. On behalf of the tax authorities, we collect value-added tax from users other than the selling price of the products when settling payments with users. The value-added tax paid by us when purchasing raw materials for production, and the payment of drilling and other engineering service fees may be deducted from the value-added tax collected by us from users.
Consumption tax	Aggregate volume sold or self-consumed	Effective from January 13, 2015, RMB1.52 per liter for gasoline, naphtha, solvent oil and lubricant, and RMB1.2 per liter for diesel, fuel oil and jet kerosene.
Import tariff	CIF China price	5% for gasoline, 6% for diesel, 9% for jet kerosene and 6% for fuel oil. In 2017, the applicable tax rate for motor gasoline and aviation gasoline, No. 5-7 fuel oil and diesel is 1%, and 0% for jet kerosene and naphtha.
Resource tax	Aggregate Sales Revenue	Effective from December 1, 2014, for domestic production of crude oil and natural gas, the applicable tax rate is increased from 5% to 6% of the sales revenue, exemption or deduction may apply if qualified.
Resource compensation tax	Sales revenue of crude oil and natural gas	Effective from December 1, 2014, the applicable tax rate is reduced from 1% to zero.
Exploration license fee	Area	RMB100 to RMB500 per square kilometer per annum.
Production license fee	Area	RMB1,000 per square kilometer per annum.
Royalty fee(1)	Production volume	Progressive rate of 0-12.5% for crude oil and 0-3% for natural gas.
City construction tax	Total payment of value-added tax and consumption tax	1%, 5% and 7%.
Education surcharge and local education surcharge	Total payment of value-added tax and consumption tax	3% for education surcharge and 2% for local education surcharge.
Special Oil Income Levy	Any revenue derived from sale of domestically produced crude oil when the realized crude oil price exceeds US\$65 per barrel.	Progressive rate of 20% to 40% for revenues derived from crude oil with realized price in excess of US\$65 per barrel.

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

C. ORGANIZATIONAL STRUCTURE

For a description of our relationship with Sinopec Group Company, see “Item 4. Information on the Company—A. History and Development of the Company” and “Item 7. Major Shareholders and Related Party Transactions.” For a description of our significant subsidiaries, see Note 39 to our consolidated financial statements.

Like many large scale companies with businesses across industries, we conduct our business through a large number of Chinese and foreign operating entities. The chart below summarizes our business segments and identifies our significant subsidiaries, as that term is defined under Section 1-02 of Regulation S-X under the U.S. Securities Act. We combined our refining and chemicals segments in the chart below given that most of our significant subsidiaries conducting the relevant businesses can be categorized under these segments. See Note 39 to our consolidated financial statements.



Notes:

- (1) Sinopec Group Company owns 67.84% of our total issued and outstanding share capital, including 67.20% in the form of A shares and 0.64% in the form of H shares.
- (2) Public shareholders collectively hold 10.35% of our total issued and outstanding share capital in the form of A shares.
- (3) Public shareholders collectively hold 20.03% of our total issued and outstanding share capital in the form of H shares (including H shares represented by ADSs), of which, ADS holders collectively hold, in the form of ADSs, H shares representing 1.18% of our total issued and outstanding share capital.
- (4) Our significant subsidiary under Exploration and Production segment is Sinopec International Petroleum Exploration and Production Limited.
- (5) Our significant subsidiaries under Refining and Chemicals segments are Sinopec Great Wall Energy & Chemical Company Limited, Sinopec Yangzi Petrochemical Company Limited, Sinopec Yizheng Chemical Fibre Limited Liability Company, Sinopec Lubricant Company Limited, Sinopec Qingdao Petrochemical Company Limited, Sinopec Chemical Sales Company Limited, Sinopec Beihai Refining and Chemical Limited Liability Company, ZhongKe (Guangdong) Refinery & Petrochemical Company Limited, Sinopec Qingdao Refining and Chemical Company Limited, Sinopec Hainan Refining and Chemical Company Limited, Sinopec-SK (Wuhan) Petrochemical Company Limited, Gaoqiao Petrochemical Company Limited, Sinopec Baling Petrochemical Co. Ltd, Sinopec Shanghai Petrochemical Company Limited, Fujian Petrochemical Company Limited, Sinopec Tahe Petrochemical Co., Ltd., and Sinopec Zhongyuan Petrol-Chemical Industry Co., Ltd.
- (6) Our significant subsidiary under Marketing and Distribution segment is Sinopec Marketing Company Limited.
- (7) Our significant subsidiaries under Others segment are Sinopec Overseas Investment Holding Limited, China International United Petroleum and Chemical Company Limited, Sinopec Catalyst Company Limited, China Petrochemical International Company Limited, and Sinopec Kantons Holdings Limited, Sinopec Research Institute of Petroleum Engineering Company Limited, Petroleum Exploration and Production Research Institute Company Limited of Sinopec, Sinopec Fushun Research Institute of Petroleum and Petrochemicals Company Limited, Sinopec Research Institute of Petroleum Processing Company Limited, Sinopec Beijing Research Institute of Chemical Industry Company Limited, Sinopec Shanghai Research Institute of Petrochemical Technology Company Limited, Sinopec Qingdao Safety Engineering Institute Company Limited, and Sinopec Geophysical Research Institute Company Limited.

D. PROPERTY, PLANT AND EQUIPMENT

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

Environmental Matters

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

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

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

Prior to undertaking any project with negative impact on the environment, we will file an environmental impact evaluation report to the Ministry of Ecology and Environment or local ecology and environment department for approval in compliance with applicable environmental law. The relevant projects will only commence after we have obtained the necessary approval. When carrying out such projects, the Company strictly abides by the relevant national and local requirements on the “three simultaneous” (simultaneous design, simultaneous construction, and simultaneous operation in connection with the main facility) in relation to environmental protection facilities, and, after the completion of the project, completes the completion of environmental protection acceptance on time, of strict rules and with high quality.

We believe our environmental protection systems and facilities are adequate for us to comply with currently applicable national and local environmental protection laws and regulations. The PRC government, however, may impose stricter regulations which may require additional expenditure on compliance with environmental laws and regulations. In addition, to proactively discharge our social responsibility and to demonstrate our leadership in fulfilling China’s “dual carbon” goals, we intend to embrace the “Green Revolution” and the carbon neutrality objectives, and to build the company with competing edge with respect to green and low carbon operation.

Our environmental protection expenditures were approximately RMB11.4 billion in 2020, RMB11.0 billion in 2021 and RMB16.8 billion in 2022.

Insurance

In respect of our refining, petrochemical production, and marketing and sales operations, we currently maintain with Sinopec Group Company, under the terms of its Safety Production Insurance Fund (SPI Fund), approximately RMB896.6 billion of coverage on our property and plants and approximately RMB94.5 billion of coverage on our inventory. In 2022, we paid an insurance premium of approximately RMB2.47 billion to Sinopec Group Company for such coverage.

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

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

Pursuant to an approval of the Ministry of Finance, Sinopec Group Company entered into an agreement with PICC Property and Casualty Company Limited on January 29, 2002 to purchase a property and casualty policy which would also cover our assets. The policy provides for an annual maximum cumulative claim amount of RMB4 billion and a maximum of RMB2.36 billion per occurrence.

ITEM 4A. UNRESOLVED STAFF COMMENTS

None.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

A. GENERAL

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

Critical Accounting Estimates

We prepare our consolidated financial statements in accordance with IFRS, as issued by IASB. In doing so, we have to make estimates and assumptions. We base our estimates and assumptions on historical experience and various other assumptions that we believe to be reasonable and which form the basis for making judgments about matters that are not readily apparent from other sources. Accordingly, actual results may differ from those estimates as facts, circumstances and conditions change, and we evaluate these estimates on an ongoing basis. The following critical accounting estimates are selected based on uncertainties affecting the application and sensitivity of our consolidated financial statements to changes in conditions and assumptions.

Oil and gas properties and reserves

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

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

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

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

Impairment for long-lived assets

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

Impairment losses recognized for each of the three years ended December 31, 2020, 2021 and 2022 in our consolidated income statements on long-lived assets are summarized as follows:

	Year ended December 31,		
	2020	2021	2022
	(RMB in millions)		
Exploration and production	8,495	2,467	2,891
Refining	1,923	860	2
Marketing and distribution	536	1,211	415
Chemicals	3,675	5,332	1,790
Corporate and others	—	165	571
Total*	14,629	10,035	5,669

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

Depreciation

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

Measurement of expected credit losses

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

	Year ended December 31,		
	2020	2021	2022
	(RMB in millions)		
Balance as of January 1	1,848	3,860	4,033
Impairment losses recognized for the year	2,173	436	417
Reversal of impairment losses	(68)	(127)	(561)
Written off	(23)	(30)	(49)
Others	(70)	(106)	239
Balance as of December 31	3,860	4,033	4,079

Allowance for diminution in value of inventories

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

	Year ended December 31,		
	2020	2021	2022
	(RMB in millions)		
Balance as of January 1	2,597	3,107	4,897
Allowance for the year	11,689	3,148	6,407
Reversal of allowance on disposal	(333)	(18)	(85)
Written off	(10,795)	(1,300)	(4,530)
Others	(51)	(40)	(106)
Balance as of December 31	3,107	4,897	6,583

Recently Pronounced International Financial Reporting Standards

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

Overview of Our Operations

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

- *Exploration and Production Segment*, which consists of our activities related to exploring for and developing, producing and selling crude oil and natural gas;
- *Refining Segment*, which consists of purchasing crude oil from our exploration and production segment and from third parties, processing of crude oil into refined oil products, selling refined oil products principally to our marketing and distribution segment;
- *Marketing and Distribution Segment*, which consists of purchasing refined oil products from our refining segment and third parties, and marketing, selling and distributing refined oil products by wholesale to large customers and independent distributors and retail through our retail network;
- *Chemicals Segment*, which consists of purchasing chemical feedstock principally from the refining segment and producing, marketing, selling and distributing chemical products; and
- *Corporate and Others Segment*, which consists principally of trading activities of the import and export subsidiaries and our research and development activities.

B. CONSOLIDATED RESULTS OF OPERATIONS

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

In 2022, the Company's revenue was RMB3,318.2 billion, increased by 21.1% compared with that of 2021, primarily due to the increase in international crude oil price, which in turn drove up the prices of petroleum and petrochemical products. We optimized operation and production, strived to stabilize business operation and expand market share, further effected structural adjustment to raw materials, products and equipment, and actively responded to unfavorable factors such as decrease in consumption, and realized RMB75.8 billion of operating profit, down by 19.9% year on year.

The following table sets forth major revenue and expense items in the consolidated income statements for the years ended December 31, 2022 and 2021.

	Year Ended December 31,		
	2021 (RMB in millions)	2022 ⁽¹⁾	Change from 2021 to 2022 (%)
Revenue	2,740,884	3,318,168	21.1
Revenues from primary business	2,679,500	3,257,356	21.6
Other operating revenues	61,384	60,812	(0.9)
Operating expenses	(2,646,256)	(3,242,333)	22.5
Purchased crude oil, products and operating supplies and expenses	(2,076,665)	(2,684,756)	29.3
Selling, general and administrative expenses	(54,978)	(55,809)	1.5
Depreciation, depletion and amortization	(115,680)	(109,906)	(5.0)
Exploration expenses, including dry holes	(12,382)	(10,591)	(14.5)
Personnel expenses	(103,492)	(103,585)	0.1
Taxes other than income tax	(259,032)	(263,991)	1.9
Impairment (losses) / reversals on trade and other receivables	(2,311)	1,084	—
Other operating income /(expenses), net	(21,716)	(14,779)	(31.9)
Operating income	94,628	75,835	(19.9)
Net finance costs	(9,010)	(9,974)	10.7
Investment income and share of profits less losses from associates and joint ventures	23,551	28,539	21.2
Earnings before income tax	109,169	94,400	(13.5)
Income tax expense	(23,318)	(18,757)	(19.6)
Net income	85,851	75,643	(11.9)
Attributable to:			
Owners of the Company	71,975	66,153	(8.1)
Non-controlling interests	13,876	9,490	(31.6)

(1) Detailed information relating to the gain on sale of certain business is presented in Note 10 to the consolidated financial statements.

Operating revenues

In 2022, the Company's revenue from primary business was RMB3,257.4 billion, representing an increase of 21.6% over 2021. This was mainly due to the increased price of petroleum and petrochemical products.

The following table sets forth our external sales volume, average realized prices and the respective rates of change from 2021 to 2022 for our major products:

	Sales Volume		Change from 2021 to 2022 (%)	Average Realized Price		Change from 2021 to 2022 (%)
	2021 (thousand tonnes)	2022		2021 (RMB per tonne)	2022	
Crude oil	7,162	8,171	14.1	3,049	4,449	45.9
Natural gas	29,953 ⁽¹⁾	30,845 ⁽¹⁾	3.0	1,606 ⁽²⁾	1,808 ⁽²⁾	12.6
Gasoline	90,836	80,884	(11.0)	7,731	9,319	20.5
Diesel	78,335	81,657	4.2	5,891	7,738	31.4
Kerosene	21,270	17,361	(18.4)	3,772	6,545	73.5
Basic chemical feedstock	36,173	36,053	(0.3)	5,486	6,204	13.1
Monomer and polymer for synthetic fiber	6,955	7,412	6.6	6,537	6,116	(6.4)
Synthetic resins	17,923	17,471	(2.5)	8,325	8,272	(0.6)
Synthetic fiber	1,457	1,193	(18.1)	7,521	8,119	8.0
Synthetic rubber	1,286	1,364	6.1	11,099	11,363	2.4
Chemical fertilizer	976	779	(20.2)	2,807	3,015	7.4

(1) million cubic meters

(2) RMB per thousand cubic meters

Sales of crude oil and natural gas

Most crude oil and a small portion of natural gas produced by the Company were internally used for refining and chemical production, with the remaining sold to external customers. In 2022, the turnover from crude oil, natural gas and other upstream products sold externally amounted to RMB192.3 billion, representing an increase of 23.3% over 2021. The change was mainly due to increases in the prices and sales volume of crude oil and natural gas.

Sales of refined petroleum products

In 2022, petroleum products (mainly consisting of refined oil products and other refined petroleum products) sold by Refining Segment and Marketing and Distribution Segment achieved external sales revenues of RMB1,855.8 billion (accounting for 55.9% of the Company's revenue), representing an increase of 20.9% over 2021, mainly due to the increase in prices of refined oil products, which effectively offsets the impact of the decrease in sales volume. The sales revenue of gasoline, diesel and kerosene was RMB1,499.3 billion, representing an increase of 20.5% over 2021, and accounting for 80.8% of the total sales revenue of petroleum products. Sales revenue of other refined petroleum products was RMB356.5 billion, representing an increase of 22.3% compared with that of 2021, accounting for 19.2% of the total sales revenue of petroleum products.

Sales of chemical products

In 2022, the Company's external sales revenue of chemical products was RMB449.9 billion, representing an increase of 5.9% over 2021, accounting for 13.6% of the Company's total revenue. This was mainly due to the increase in price of certain of our chemical products.

Revenue from corporate and others

In 2022, our corporate and others realized operating revenue of RMB1,790.5 billion, representing an increase of 38.0% over 2021. This was mainly attributable to the increase in the price of crude oil and refined petroleum products.

Operating expenses

In 2022, the Company's operating expenses was RMB3,242.3 billion, increased by 22.5% compared with that of 2021. Among the operating expenses:

Purchased crude oil, products and operating supplies and expenses were RMB2,684.8 billion, representing an increase of 29.3% over the same period of 2021, accounting for 82.8% of the total operating expenses, of which:

- crude oil purchasing expenses was RMB999.7 billion, representing an increase of 45.0% over the same period of 2021. Crude oil purchased externally used for processing in 2022 was 201.98 million tonnes (excluding the volume processed for third parties), representing a decrease of 5.0% over the same period of 2021. The average cost of processing crude oil purchased externally was RMB4,950 per tonne, representing an increase by 52.6% over 2021.
- other purchasing expenses was RMB1,685.0 billion, representing an increase of 21.5% over the same period of 2021. This was mainly attributable to the increased prices in naphtha and other feedstocks and traded crude oil and refined oil products.

Selling, general and administrative expenses totaled RMB55.8 billion, representing an increase of 1.5% over 2021.

Depreciation, depletion and amortization was RMB109.9 billion, representing a decrease of 5.0% over the same period of 2021. This was mainly because the proved reserve increased as result of the increase in international crude oil prices in 2021, and the resultant decrease in depletion ratio of oil and gas assets, which led to a decrease in depreciation and depletion by RMB7.6 billion in 2022.

Exploration expenses were RMB10.6 billion, representing a decrease of 14.5% compared with 2021. This was mainly due to the optimization of drilling of shale gas and other unconventional resources, improved exploration success rate which effectively decrease the expenses in dry holes.

Personnel expenses was RMB103.6 billion, representing an increase of 0.1% over 2021.

Taxes other than income tax was RMB264.0 billion, representing an increase of 1.9% over the same period of 2021. This was mainly because the special oil gain levy increased by RMB12.3 billion resulting from the increased crude oil price, and the consumption tax decreased by RMB7.1 billion resulting from the decreased sales volume of domestic refined oil products in the refining segment.

Impairment reversals on trade and other receivables was RMB1.1 billion. The impairment losses on trade and other receivables decreased by RMB3.4 billion over the same period of 2021, which was mainly due to the reversed provision in the impairment of entrusted loans in 2022.

Other operating expenses, net was RMB14.8 billion, representing a decrease of 31.9% over the same period of 2021. This was mainly due to the decrease of impairment in long-term assets year-on-year.

Operating income

In 2022, our operating income was RMB75.8 billion, representing a decrease of 19.9% over the same period of 2021. This was mainly because the sluggish domestic demand in the petroleum and petrochemical markets and a decrease in the gross margin of domestic refining and petrochemical products due to high oil price.

Earnings before income tax

In 2022, our earnings before income tax was RMB94.4 billion, representing a decrease of 13.5% compared with 2021.

Income tax expense

In 2022, we recognized income tax expense of RMB18.8 billion, representing a decrease of 19.6% year on year. This was mainly due to the reduction in our profit.

Net income attributable to non-controlling interests

In 2022, our net income attributable to non-controlling interests was RMB9.5 billion, representing a decrease of RMB4.4 billion and 31.6% over the same period of 2021.

Net income attributable to owners of the Company

In 2022, our net income attributable to our owners was RMB66.2 billion, representing a year-on-year decrease of 8.1%.

Year Ended December 31, 2021 Compared with Year Ended December 31, 2020

In 2021, the Company's revenue was RMB2,740.9 billion, increased by 30.2% compared with that of 2020. We realized RMB94.6 billion in operating profit, up by 592.3% year on year.

The following table sets forth major revenue and expense items in the consolidated income statements for the years ended December 31, 2020 and 2021.

	Year Ended December 31,		Change from 2020 to 2021 (%)
	2020 ⁽¹⁾ (RMB in millions)	2021	
Revenue	2,104,724	2,740,884	30.2
Revenues from primary business	2,048,654	2,679,500	30.8
Other operating revenues	56,070	61,384	9.5
Operating expenses	(2,091,055)	(2,646,256)	26.6
Purchased crude oil, products and operating supplies and expenses	(1,589,821)	(2,076,665)	30.6
Selling, general and administrative expenses	(53,668)	(54,978)	2.4
Depreciation, depletion and amortization	(107,461)	(115,680)	7.6
Exploration expenses, including dry holes	(9,716)	(12,382)	27.4
Personnel expenses	(87,525)	(103,492)	18.2
Taxes other than income tax	(235,018)	(259,032)	10.2
Other operating income /(expenses), net ⁽²⁾	(7,846)	(24,027)	206.2
Operating income	13,669	94,628	592.3
Net finance costs	(9,510)	(9,010)	(5.3)
Investment income and share of profits less losses from associates and joint ventures	44,456	23,551	(47.0)
Earnings before income tax	48,615	109,169	124.6
Income tax expense	(6,344)	(23,318)	267.6
Net income	42,271	85,851	103.1
Attributable to:			
Owners of the Company	33,443	71,975	115.2
Non-controlling interests	8,828	13,876	57.2

(1) Detailed information relating to the gain on sale of certain business is presented in Note 10 to the consolidated financial statements.

(2) Other operating income /(expenses), net include impairment losses on trade and other receivables of RMB2.3 billion and RMB2.1 billion for the years ended December 31, 2021 and 2020, respectively.

Operating revenues

In 2021, the Company's revenue from primary business was RMB2,679.5 billion, representing an increase of 30.8% over 2020. This was mainly due to the price and sales volume increase in refined oil products and chemical products.

The following table sets forth our external sales volume, average realized prices and the respective rates of change from 2020 to 2021 for our major products:

	Sales Volume		Change from	Average Realized Price		Change from
	2020 (thousand tonnes)	2021	2020 to 2021 (%)	2020 (RMB per tonne)	2021	2020 to 2021 (%)
Crude oil	7,422	7,162	(3.5)	2,029	3,049	50.3
Natural gas	26,280 ⁽¹⁾	29,953 ⁽¹⁾	14.0	1,352 ⁽²⁾	1,606 ⁽²⁾	18.8
Gasoline	86,193	90,836	5.4	6,300	7,731	22.7
Diesel	77,280	78,335	1.4	4,789	5,891	23.0
Kerosene	20,828	21,270	2.1	2,635	3,772	43.1
Basic chemical feedstock	47,109	48,059	2.0	3,569	5,311	48.8
Monomer and polymer for synthetic fiber	9,743	7,010	(28.1)	4,302	6,580	53.0
Synthetic resins	17,124	17,924	4.7	7,150	8,325	16.4
Synthetic fiber	1,403	1,457	3.8	6,407	7,521	17.4
Synthetic rubber	1,364	1,289	(5.5)	7,986	11,104	39.0
Chemical fertilizer	1,181	981	(16.9)	1,950	2,797	43.4

(1) million cubic meters

(2) RMB per thousand cubic meters

Sales of crude oil and natural gas

Most crude oil and a small portion of natural gas produced by the Company were internally used for refining and chemical production, with the remaining sold to external customers. In 2021, the revenue from crude oil, natural gas and other upstream products sold externally amounted to RMB156.0 billion, representing an increase of 49.3% over 2020. The change was mainly due to increases in crude oil and natural gas prices, and the increase of natural gas sales volume.

Sales of refined petroleum products

In 2021, petroleum products (mainly consisting of refined oil products and other refined petroleum products) sold by Refining Segment and Marketing and Distribution Segment achieved external sales revenues of RMB1,535.5 billion (accounting for 56.0% of the Company's revenue), representing an increase of 30.6% over 2020, mainly due to the increase in prices and volume of refined oil products. The sales revenue of gasoline, diesel and kerosene was RMB1,243.9 billion, representing an increase of 28.5% over 2020, and accounting for 81.0% of the total sales revenue of petroleum products. Revenue of other refined petroleum products was RMB291.6 billion, representing an increase of 49.0% compared with that of 2020, accounting for 19.0% of the total sales revenue of petroleum products.

Sales of chemical products

In 2021, the Company's external sales revenue of chemical products was RMB424.8 billion, representing an increase of 31.8% over 2020, accounting for 15.5% of the Company's total revenue. This was mainly due to the increase in price and sales volume of chemical products.

Revenue from corporate and others

In 2021, our corporate and others realized operating revenue of RMB1,297.7 billion, representing an increase of 48.5% over 2020. This was mainly because the sharp increase of the price and trading volume of refined petroleum products.

Operating expenses

In 2021, the Company's operating expenses was RMB2,646.3 billion, increased by 26.6% compared with that of 2020. Among the operating expenses:

Purchased crude oil, products and operating supplies and expenses were RMB2,076.7 billion, representing an increase of 30.6% over the same period of 2020, accounting for 78.5% of the total operating expenses, of which:

- crude oil purchasing expenses was RMB689.5 billion, representing an increase of 43.9% over the same period of 2020. Crude oil purchased externally used for processing in 2021 was 212.55 million tonnes (excluding the volume processed for third parties), representing an increase of 7.9% over the same period of 2020. The average cost of crude oil purchased externally was RMB3,244 per tonne, representing an increase by 33.3% over 2020.
- other purchasing expenses was RMB1,387.2 billion, representing an increase of 24.9% over the same period of 2020. This was mainly attributable to the sharp increase in international bulk raw material prices and purchasing volume increase.

Selling, general and administrative expenses totaled RMB55.0 billion, representing an increase of 2.4% over 2020.

Depreciation, depletion and amortization was RMB115.7 billion, representing an increase of 7.6% over the same period of 2020. This was mainly because that the proved reserve decreased resulting from the decrease of international crude oil prices and appreciation of RMB exchange rate in 2020, thus the depletion ratio of oil and gas assets increased, which led to the depreciation and depletion increased.

Exploration expenses, including dry holes was RMB12.4 billion, representing an increase of 27.4% compared with 2020. This was mainly due to increased investment in exploration and development to improve the quality of oil and gas assets.

Personnel expenses was RMB103.5 billion, representing an increase of 18.2% over 2020. That was due to the government's preferential policy on social insurance during the COVID-19 pandemic in 2020, which was cancelled in 2021, as well as a year-on-year increase in performance-related bonus as a reward for the significant improvement in operating profit.

Taxes other than income tax was RMB259.0 billion, representing an increase of 10.2% over the same period of 2020. This was mainly due to the increase of consumption tax resulting from the increase of production volume in gasoline and diesel.

Other operating expenses, net was RMB21.7 billion, representing an increase of RMB275.7% over the same period of 2020. This was mainly due to impact of the loss on disposal of property, plant, equipment and other non-current assets.

Operating income

In 2021, our operating income was RMB94.6 billion, representing an increase of 592.3% over the same period of 2020. This was mainly because that with the increase of international crude oil prices and steady improvement of market demand, the Company increased its processing volume and sales volumes which led to an increase in the gross profit margin of petrochemical products and significant improvement of the Company's operating results.

Earnings before income tax

In 2021, our earnings before income tax was RMB109.2 billion, representing an increase of 124.6% compared with 2020.

Income tax expense

In 2021, we recognized income tax expense of RMB23.3 billion, representing an increase of 267.6% year on year. This was mainly due to the taxable income increase as a result of good profit the Company achieved in 2021.

Net income attributable to non-controlling interests

In 2021, our net income attributable to non-controlling interests was RMB13.9 billion, representing an increase of RMB5.0 billion and 57.2% over the same period of 2020. This was mainly due to the improvement in the profits of our non-wholly owned subsidiaries.

Net income attributable to owners of the Company

In 2021, our net income attributable to our owners was RMB72.0 billion, representing a year-on-year increase of 115.2%.

C. DISCUSSIONS ON RESULTS OF SEGMENT OPERATIONS

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

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

	Year Ended December 31,			As a Percentage of Consolidated Operating Revenues Before Elimination of Inter-segment Sales		As a Percentage of Consolidated Operating Revenues After Elimination of Inter-segment Sales	
	2020	2021	2022	2021	2022	2021	2022
	(RMB in billions)			(%)	(%)	(%)	(%)
Exploration and production							
External sales ⁽¹⁾	110	163	197	3.4	3.3	5.9	6.0
Inter-segment sales	58	87	122	1.8	2.1		
Total operating revenue	168	250	319	5.2	5.4		
Refining							
External sales ⁽¹⁾	118	173	199	3.6	3.3	6.3	6.0
Inter-segment sales	826	1,212	1,376	24.9	23.3		
Total operating revenue	944	1,386	1,575	28.5	26.6		
Marketing and distribution							
External sales ⁽¹⁾	1,097	1,404	1,700	29.0	28.6	51.2	51.2
Inter-segment sales	5	7	13	0.1	0.2		
Total operating revenue	1,102	1,412	1,714	29.1	28.8		
Chemicals							
External sales ⁽¹⁾	331	435	460	9.0	7.7	16.0	13.8
Inter-segment sales	41	70	80	1.4	1.4		
Total operating revenue	372	506	540	10.4	9.1		
Corporate and others							
External sales ⁽¹⁾	460	565	762	11.7	12.8	20.6	23.0
Inter-segment sales	430	732	1,029	15.1	17.3		
Total operating revenue	890	1,298	1,790	26.8	30.1		
Total operating revenue before inter-segment eliminations	3,476	4,850	5,939	100.0	100.0		
Elimination of inter-segment sales	(1,371)	(2,109)	(2,621)				
Consolidated operating revenues	2,105	2,741	3,318			100.0	100.0

(1) Include other operating revenues

The following table sets forth the operating revenues, operating expenses and operating (loss)/income by each segment before elimination of the inter-segment transactions for the periods indicated, and the changes from 2021 to 2022.

	Year Ended December 31,			Change from
	2020	2021	2022	2021 to 2022
	(RMB in billions)			(%)
Exploration and production				
Total operating revenues	168	250	319	27.8
Total operating expenses	(184)	(245)	(266)	8.3
Total operating (loss)/income	(16)	5	54	1,046.6
Refining				
Total operating revenues	944	1,386	1,575	13.7
Total operating expenses	(950)	(1,320)	(1,563)	18.4
Total operating (loss)/income	(6)	65	12	(81.3)
Marketing and distribution				
Total operating revenues	1,102	1,412	1,714	21.4
Total operating expenses	(1,081)	(1,390)	(1,689)	21.5
Total operating income	21	21	25	15.7
Chemicals				
Total operating revenues	372	506	540	6.9
Total operating expenses	(361)	(494)	(554)	12.1
Total operating income/(loss)	11	11	(14)	—
Corporate and others				
Total operating revenues	890	1,298	1,790	38.0
Total operating expenses	(891)	1,301	(1,789)	37.5
Total operating (loss)/income	(0.39)	(3.23)	1.32	—
Elimination of inter-segment income	4	(4.42)	(1.82)	—

Exploration and Production Segment

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

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

In 2022, the operating revenues of this segment was RMB319.4 billion, representing an increase of 27.8% over 2021. This was mainly attributable to the increase in both the realized price and the sales volume of crude oil and natural gas.

In 2022, the segment sold 34.28 million tonnes of crude oil, representing an increase of 0.6% over 2021. Natural gas sales volume was 31.9 billion cubic meters (bcm), representing an increase of 3.3% over 2021. Regasified LNG sales volume was 21.5 bcm, representing an increase of 12.5% over 2021. LNG sales volume decreased 77.0% from 2021 to 1.42 million tonnes, primarily due to flexible adjustments of sales strategy and structure based on purchase prices and market conditions to reduce sales volume of products with lower margin. Average realized prices of crude oil, natural gas, regasified LNG, and LNG were RMB4,312 per tonne, RMB1,816 per thousand cubic meters, RMB3,535 per thousand cubic meters, and RMB5,710 per tonne, respectively, representing an increase of 47.1%, 13.1%, 66.8%, and 46.1% respectively over 2021.

In 2022, the operating expenses of this segment was RMB265.7 billion, representing an increase of 8.3% over 2021. This was mainly because:

- the special oil income levy and resource tax increased by RMB15.3 billion year on year;
- the procurement cost of LNG increased by RMB12.3 billion year on year;
- the depreciation, depletion and amortization decreased by RMB7.6 billion year on year, as a result of the decrease of depletion ratio; and

- the exploration expense decreased by RMB1.8 billion year on year.

In 2022, the oil and gas lifting cost was RMB773.1 per tonne, representing a year on year decrease of 0.5%.

In 2022, the operating profit of the exploration and production segment was RMB53.7 billion, representing an increase of RMB49.0 billion and 1,046.6% over the same period of 2021, which was mainly attributable to the fact that the segment seized the opportunity of high crude oil prices, improved proved reserve and production volume of oil and gas, enhanced cost control, optimized the operation of natural gas value chain, and achieved a significant increase in profitability.

Year Ended December 31, 2021 Compared with Year Ended December 31, 2020

In 2021, the operating revenues of this segment was RMB250.0 billion, representing an increase of 49.0% over 2020. This was mainly attributed to the increase of realized price in crude oil and natural gas, as well as the sales volume of natural gas increase.

In 2021, the segment sold 34.09 million tonnes of crude oil, representing a decrease of 1.2% over 2020. Natural gas sales volume was 30.8 bcm, representing an increase of 11.1% over 2020. Regasified LNG sales volume was 19.1 bcm, representing an increase of 22.3% over 2020. LNG sales volume was 6.18 million tonnes, representing an increase of 0.1% over 2020. Average realized prices of crude oil, natural gas, Regasified LNG, and LNG were RMB2,932 per tonne, RMB1,605 per thousand cubic meters, RMB2,119 per thousand cubic meters, and RMB3,909 per tonne, respectively, representing an increase of 54.2%, 18.0%, 19.4%, and 53.7% respectively over 2020.

In 2021, the operating expenses of this segment was RMB245.3 billion, representing an increase of 33.2% over 2020. This was mainly due to:

- Procurement cost of LNG increased by RMB45.0 billion year on year;
- Depreciation, depletion and amortization increased by RMB6.6 billion year on year, as a result of the increase of depletion ratio;
- Resource Tax and special oil income levy increased by RMB3.9 billion year on year;
- Exploration expense increased by RMB2.7 billion year on year; and
- Impairment decreased by RMB6.0 billion year on year.

In 2021, the oil and gas lifting cost was RMB776.94 per tonne, representing a year on year increase of 6.5%, mainly attributable to the increase in the cost of purchased material, fuels, and power as the international commodities prices increased, and the increase of personnel expenses.

In 2021, the operating profit of the exploration and production segment was RMB4.7 billion, representing an increase of RMB21.2 billion over the same period of 2020, which was mainly attributable to the fact that the segment promoted high-quality exploration and profitable development, focused on reducing cost, enhanced integrated operation of production, supply, storage and sales.

Refining Segment

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

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

In 2022, the operating revenues of this segment was RMB1,575.1 billion, representing an increase of 13.7% over 2021. This was mainly attributable to the year-on-year increase in the prices of gasoline, diesel, kerosene, naphtha and refining by-products.

The table below sets forth sales volume and average realized prices by product for 2021 and 2022, as well as the percentage changes in sales volume and average realized prices for the periods shown.

	Sales volume		Change from 2021 to 2022 (%)	Average realized prices		Change from 2021 to 2022 (%)
	2021 (thousand tonnes)	2022		2021 (RMB per tonne)	2022	
Gasoline	63,827	57,562	(9.8)	7,208	8,967	24.4
Diesel	58,807	61,169	4.0	5,563	7,376	32.6
Kerosene	17,313	14,782	(14.6)	3,734	6,468	73.2
Chemical feedstock	45,234	41,470	(8.3)	3,989	5,016	25.8
Other refined petroleum products	68,783	65,945	(4.1)	5,061	4,553	(10.0)

In 2022, sales revenue of gasoline was RMB516.2 billion, representing an increase of 12.2% over 2021; the sales revenue of diesel was RMB451.2 billion, representing an increase of 37.9% over 2021; the sales revenue of kerosene was RMB95.6 billion, representing an increase of 47.9% over 2021; the sales revenue of chemical feedstock was RMB208.0 billion, representing an increase of 15.3% over 2021; and the sales revenue of refined petroleum products other than gasoline, diesel, kerosene and chemical feedstock was RMB300.2 billion, representing a decrease of 13.8% over 2021.

In 2022, the segment's operating expenses was RMB1,562.9 billion, representing an increase of 18.4% over 2021. This was mainly attributable to the rising procurement cost resulting from a year on year increase in international crude oil prices.

In 2022, the average processing cost for crude oil was RMB4,962 per tonne, representing an increase of 49.0% over 2021. Total crude oil and other feedstock processed was 247.57 million tonnes (excluding volume processed for third parties), representing a decrease of 6.2% over 2021. The total cost of crude oil processed was RMB1,228.3 billion, representing an increase of 39.8% over 2021.

In 2022, refining margin was RMB344 per tonne, representing a decrease of RMB188 per tonne compared with that of the same period of 2021. This was mainly attributable to the decrease in domestic gasoline and diesel processing margin due to high crude oil prices, and the significant increase in the spread of imported crude and overseas freight and insurance cost year-on-year.

In 2022, the refining unit cash operating cost (defined as operating expenses less the processing cost of crude oil and refining feedstock, depreciation and amortization, taxes other than income tax and other operating expenses, then divided by the throughput of crude oil and refining feedstock) was RMB223 per tonne, representing an increase of 4.6% over 2021, which was mainly attributed to the increase of unit fixed cost resulting from significant increase in the prices of fuels, as well as the decrease of processing volume.

In 2022, the operating income of the segment totaled RMB12.2 billion, representing a decrease of RMB53.1 billion and 81.3% over 2021. This was mainly due to the sharp decrease in refining margin resulting from rising crude procurement cost, weak domestic oil products demand and decreased domestic gross margin of gasoline and diesel due to high crude price, coupled with sluggish demand.

Year Ended December 31, 2021 Compared with Year Ended December 31, 2020

In 2021, the operating revenues of this segment was RMB1,385.6 billion, representing an increase of 46.8% over 2020. This was mainly attributed to the demand recovery and the increases of refined oil products prices and sales volume.

The table below sets forth sales volume and average realized prices by product for 2020 and 2021, as well as the percentage changes in sales volume and average realized prices for the periods shown.

	Sales volume		Change from 2020 to 2021 (%)	Average realized prices		Change from 2020 to 2021 (%)
	2020 (thousand tonnes)	2021		2020 (RMB per tonne)	2021	
Gasoline	56,259	63,827	13.5	5,813	7,208	24.0
Diesel	61,167	58,807	(3.9)	4,354	5,563	27.8
Kerosene	17,309	17,313	0.0	2,673	3,734	39.7
Chemical feedstock	39,872	45,234	13.5	2,596	3,989	53.7
Other refined oil products	65,353	68,783	5.3	3,004	5,061	68.5

In 2021, sales revenue of gasoline was RMB460.1 billion, representing an increase of 40.7% over 2020; the sales revenue of diesel was RMB327.1 billion, representing an increase of 22.8% over 2020; the sales revenue of kerosene was RMB64.6 billion, representing an increase of 39.7% over 2020; the sales revenue of chemical feedstock was RMB180.4 billion, representing an increase of 74.3% over 2020; and the sales revenue of refined petroleum products other than gasoline, diesel, kerosene and chemical feedstock was RMB348.1 billion, representing an increase of 77.3% over 2020.

In 2021, the segment's operating expenses was RMB1,320.3 billion, representing an increase of 39.0% over 2020. This was mainly attributed to the increase in procurement cost of crude oil, and the increase of taxes and surcharges related to sales revenue year on year.

In 2021, the average processing cost for crude oil was RMB3,329 per tonne, representing an increase of 35.6% over 2020. Total crude oil processed was 263.85 million tonnes (excluding volume processed for third parties), representing an increase of 7.3% over 2020. The total cost of crude oil processed was RMB878.4 billion, representing an increase of 45.5% over 2020.

In 2021, refining margin was RMB532 per tonne, representing an increase of RMB292 per tonne compared with that of the same period of 2020. This was mainly attributed to the increase in demand for refined oil products and chemical raw materials, and substantial improvement in gross margin of refined oil products and naphtha, as well as the significant inventory gains of crude oil and refined products.

In 2021, the refining unit cash operating cost (defined as operating expenses less the processing cost of crude oil and refining feedstock, depreciation and amortization, taxes other than income tax and other operating expenses, then divided by the throughput of crude oil and refining feedstock) was RMB213.24 per tonne, representing an increase of 17.5% over 2020, which was mainly attributed to the increased expense of safety, environment protection, and maintenance year on year.

In 2021, the operating income of the segment totaled RMB65.3 billion, representing an increase of RMB70.8 billion compared with that of 2020. This was mainly due to the fact that the segment seized the opportunity of market recovery to increase the utilization rates of facilities and made efforts to optimize the product slate. The inventory gains of crude oil and refined products increased, and the refining margin improved significantly.

Marketing and Distribution Segment

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

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

In 2022, the operating revenues of this segment was RMB1,713.9 billion, up by 21.4% year-on-year. This was mainly attributable to the increase in the sales prices of refined oil products year-on-year. The sales revenues of gasoline totaled RMB754.4 billion, up by 7.4% year-on-year; the sales revenues of diesel was RMB633.9 billion, up by 37.0% year-on-year; the sales revenues of kerosene was RMB114.4 billion, up by 42.4% year-on-year.

The following table sets forth the sales volumes, average realized prices and the respective rates of changes of the four major product categories in 2021 and 2022, including breakdown in retail, wholesale and distribution of gasoline and diesel.

	Sales volume			Average realized prices		Change from
	2021 (thousand tonnes)	2022 (thousand tonnes)	2021 to 2022 (%)	2021 (RMB per tonne)	2022 (RMB per tonne)	2021 to 2022 (%)
Gasoline	90,873	80,957	(10.9)	7,730	9,318	20.5
Retail sale	64,325	56,989	(11.4)	8,223	9,938	20.9
Wholesale and distribution	26,548	23,968	(9.7)	6,537	7,845	20.0
Diesel	78,566	81,932	4.3	5,890	7,737	31.4
Retail sale	33,644	34,481	2.5	6,537	8,176	25.1
Wholesale and distribution	44,923	47,451	5.6	5,406	7,419	37.2
Kerosene	21,296	17,474	(17.9)	3,772	6,546	73.5
Fuel oil	25,847	26,162	1.2	3,437	4,817	40.1

In 2022, the operating expenses of the segment were RMB1,689.3 billion, up by RMB299.0 billion and 21.5% year-on-year. This was mainly due to the rising oil product price, and consequently the increase in procurement costs resulting from the increase of crude price.

In 2022, the segment's marketing expense (defined as the operating expenses less the purchase costs, taxes other than income tax, depreciation and amortization, divided by sales volume) was RMB208.6 per tonne, up by 5.5% year on year, primarily due to the sluggish domestic demand for oil products, and increase in unit fixed cost due to reduced total operating volume.

In 2022, the operating revenues of nonfuel business was RMB38.1 billion, up by RMB2.7 billion year-on-year and the profit of non-fuel business was RMB4.3 billion, up by RMB0.2 billion.

In 2022, to counter the weak domestic demand in the refined oil market, this segment brought integrated and network advantages into full play, coordinated internal and external resources, and expanded sales efforts to counter the sluggish demand in the oil market. This segment realized an operating profit of RMB24.5 billion, representing an increase of RMB3.3 billion or 15.7% year on year.

Year Ended December 31, 2021 Compared with Year Ended December 31, 2020

In 2021, the operating revenues of this segment was RMB1,411.5 billion, up by 28.1% year-on-year. This was mainly attributed to the recovery of market demand and thus the increase in the sales volume and price of refined oil products. The sales revenues of gasoline totaled RMB702.5 billion, up by 27.9% year-on-year; the sales revenues of diesel was RMB462.8 billion, up by 22.7% year-on-year; the sales revenues of kerosene was RMB80.3 billion, up by 46.4% year-on-year.

The following table sets forth the sales volumes, average realized prices and the respective rates of changes of the four major product categories in 2020 and 2021, including breakdown in retail, wholesale and distribution of gasoline and diesel.

	Sales volume		2020 to 2021 (%)	Average realized prices		Change from 2020 to 2021 (%)
	2020 (thousand tonnes)	2021		2020 (RMB per tonne)	2021	
Gasoline	86,216	90,873	5.4	6,370	7,730	21.4
Retail sale	61,446	64,325	4.7	6,940	8,223	18.5
Wholesale and distribution	24,770	26,548	7.2	4,955	6,537	31.9
Diesel	77,507	78,566	1.4	4,865	5,890	21.1
Retail sale	36,757	33,644	(8.5)	5,351	6,537	22.2
Wholesale and distribution	40,750	44,923	10.2	4,426	5,406	22.1
Kerosene	20,828	21,296	2.2	2,634	3,772	43.2
Fuel oil	23,331	25,847	10.8	2,536	3,437	35.6

In 2021, the operating expenses of the segment were RMB1,390.3 billion, up by 28.6% year-on-year. This was mainly due to the increase of sales volumes and prices of refined oil products, and thus the increase of procurement costs.

In 2021, the segment's marketing expense (defined as the operating expenses less the purchase costs, taxes other than income tax, depreciation and amortization, divided by sales volume) was RMB197.66 per tonne, up by 4.11% year on year.

In 2021, the operating revenues of nonfuel business was RMB35.4 billion, up by RMB1.5 billion year-on-year and the profit of non-fuel business was RMB4.1 billion, up by RMB0.4 billion. This was mainly because the Company vigorously promoted company-owned brands and actively explored emerging business models to maintain the increase of volume and profit of non-fuel business.

In 2021, the segment seized the favorable opportunity of market recovery, brought synergy advantages of industrial chain into full play, coordinated internal and external resources, expanded market and increased sales, and continuously expand business volume. Operating profit was RMB21.2 billion, representing an increase of RMB0.4 billion or 1.8% year on year.

Chemicals Segment

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

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

In 2022, the operating revenues of this segment was RMB540.2 billion, up by 6.9% year-on-year. This was mainly due to the significant increase in prices of basic organic chemicals, synthetic fibers, synthetic rubbers and other products.

In 2022, the sales revenue generated by the segment's six major categories of chemical products (namely basic organic chemicals, synthetic resin, synthetic fiber monomer and polymer, synthetic fiber, synthetic rubber and chemical fertilizer) was RMB509.1 billion, up by 6.4%, accounting for 94.2% of the operating revenues of the segment.

The following table sets forth the sales volume, average realized price and the respective rates of changes for each of these six categories of chemical products of this segment from 2021 to 2022.

	Sales volume			Average realized prices		Change from
	2021 (thousand tonnes)	2022 (thousand tonnes)	2021 to 2022 (%)	2021 (RMB per tonne)	2022 (RMB per tonne)	2021 to 2022 (%)
Basic organic chemicals	48,059	46,972	(2.3)	5,311	6,192	16.6
Synthetic fiber monomers and polymers	7,010	7,496	6.9	6,580	6,140	(6.7)
Synthetic resin	17,924	17,475	(2.5)	8,325	8,272	(0.6)
Synthetic fiber	1,457	1,193	(18.1)	7,521	8,122	8.0
Synthetic rubber	1,289	1,367	6.0	11,104	11,369	2.4
Chemical fertilizer	981	812	(17.2)	2,797	2,988	6.9

In 2022, the operating expenses of the chemicals segment was RMB554.3 billion, representing an increase of 12.1% over 2021, mainly because of the increase in the price of raw materials such as naphtha and fuels such as coal.

In 2022, the price increase of petrochemical products was significantly lower than the price increase of naphtha and other raw materials, due to the increase in raw material prices, the decline in the rate by which downstream market participants resumed operation as well as market downturn, resulting in a decrease in the overall level of gross profit of this segment. The operating loss of this segment was RMB14.1 billion, representing a decrease of RMB25.2 billion in profit as compared with 2021.

Year Ended December 31, 2021 Compared with Year Ended December 31, 2020

In 2021, the operating revenues of this segment was RMB505.5 billion, up by 36.0% year-on-year. This was mainly due to the steady growth of domestic economy, and the fact that the demand for chemical products still maintained a high level, and the product prices increased year on year.

In 2021, the sales revenue generated by the segment's six major categories of chemical products (namely basic organic chemicals, synthetic resin, synthetic fiber monomer and polymer, synthetic fiber, synthetic rubber, and chemical fertilizer) was RMB478.6 billion, up by 34.9%, accounting for 94.7% of the operating revenues of the segment.

The following table sets forth the sales volume, average realized price and the respective rates of changes for each of these six categories of chemical products of this segment from 2020 to 2021.

	Sales volume		2020 to 2021 (%)	Average realized prices		Change from
	2020 (thousand tonnes)	2021 (thousand tonnes)		2020 (RMB per tonne)	2021 (RMB per tonne)	2020 to 2021 (%)
Basic organic chemicals	47,109	48,059	2.0	3,569	5,311	48.8
Synthetic fiber monomers and polymers	9,743	7,010	(28.1)	4,302	6,580	53.0
Synthetic resin	17,124	17,924	4.7	7,150	8,325	16.4
Synthetic fiber	1,403	1,457	3.8	6,407	7,521	17.4
Synthetic rubber	1,364	1,289	(5.5)	7,986	11,104	39.0
Chemical fertilizer	1,181	981	(16.9)	1,950	2,797	43.4

In 2021, the operating expenses of the chemicals segment was RMB494.4 billion, representing an increase of 37.0% over 2020, mainly because of the increase in the price of externally procured raw materials as a result of crude oil price increase.

In 2021, the Company seized the favorable opportunities of economy recovery and high realized prices of chemical products, continuously optimized the structures of feedstock, product and facilities, and achieved growing profits with increased margins of petrochemicals. The operating profit of this segment was RMB11.1 billion, representing an increase of 2.7% over 2020.

Corporate and Others

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

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

In 2022, the operating revenue generated from corporate and others was approximately RMB1,790.5 billion, representing an increase of 38.0% over 2021. This was mainly attributable to the increase in the trading prices of crude oil and refined oil products.

In 2022, the operating expenses of corporate and others was RMB1,789.2 billion, representing an increase of 37.5% over 2021.

In 2022, the operating profit from corporate and others was RMB1.3 billion, representing an increase of RMB4.5 billion over the same period of 2021. This was mainly attributable to the fact that the provision for bad debts from last year was partially reversed in 2022 and the fact that this segment seized market opportunity and realized increase in profit.

Year Ended December 31, 2021 Compared with Year Ended December 31, 2020

In 2021, the operating revenue generated from corporate and others was approximately RMB1,297.7 billion, representing an increase of 45.8% over 2020. This was mainly attributed to the great increase in the trading prices of crude oil and refined oil products.

In 2021, the operating expenses of corporate and others was RMB1,300.9 billion, representing an increase of 46.1% over 2020.

In 2021, the operating loss from corporate and others was RMB3.2 billion, representing an increase in loss of RMB2.8 billion over the same period of 2020. This was mainly attributed to the expansion of research and development investment scale which led to increase in research and development expenses and the increase of personnel expenses, and the cancellation of the government's preferential treatment granted in 2020 with respect to social insurance during the COVID-19 pandemic.

D. LIQUIDITY AND CAPITAL RESOURCES

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

The following table sets forth a summary of our consolidated statements of cash flow data for the years ended December 31, 2020, 2021 and 2022.

Statement of cash flow data	Year Ended December 31,		
	2020	2021 (RMB in millions)	2022
Net cash generated from operating activities	168,520	225,174	116,269
Net cash used in investing activities	(102,650)	(145,198)	(95,010)
Net cash used in financing activities	(37,510)	(57,942)	(39,699)
Net increase/(decrease) in cash and cash equivalents	28,360	22,034	(18,440)

In 2022, the net cash generated from operating activities of the Company was RMB116.3 billion, representing a decrease of RMB108.9 billion from 2021. This was mainly due to the payment of taxes deferred from the fourth quarter of 2021, and the decrease in operating profit.

In 2021, the net cash generated from operating activities of the Company was RMB225.2 billion, representing an increase of RMB56.7 billion year on year. This was mainly due to the increase of RMB60.6 billion in earnings before income tax.

In 2022, the net cash used in investing activities was RMB95.0 billion, representing a decrease of cash outflow of RMB50.2 billion from 2021, of which, withdrawal of matured deposits with maturity over three months increased by RMB59.2 billion, deposits with maturity over three months decreased by RMB19.2 billion and capital expenses increased by RMB25.8 billion.

In 2021, the net cash used in investing activities was RMB145.2 billion, representing an increase of cash outflow RMB42.5 billion over 2020, of which: proceeds from disposal of investments and investments in associates increased by RMB44.8 billion, capital expenditure increased by RMB9.6 billion, exploratory wells expenditure increased by RMB3.6 billion, purchasing investment and associates and joint ventures investments decreased by RMB1.1 billion, and cash outflow from changes in time deposit with maturities over three months decreased by RMB13.2 billion.

In 2022, the net cash used in the Company's financing activities was RMB39.7 billion, representing a decrease of cash outflow by RMB18.2 billion over 2021. This was mainly due to an increase of RMB44.9 billion in proceeds from interest-bearing debts and an increase of RMB21.8 billion in cash paid for dividends.

In 2021, the net cash used in the Company's financing activities was RMB57.9 billion, representing an increase of cash outflow by RMB20.4 billion over 2020. This was mainly due to a decrease of RMB3.2 billion in investments from non-controlling shareholders, increase of RMB3.6 billion in cash paid for dividends, increase of RMB3.2 billion in dividends allocated to non-controlling shareholders by subsidiaries, and increase of RMB7.1 billion in acquisition of non-controlling equity interests, and increase in repayment for lease liabilities of RMB4.1 billion.

In respect of our cash flow situation of 2022, we responded actively to high oil prices, reduced funds employed for inventory, endeavored to further reduce capital precipitation, accelerated capital turnover, strengthened the centralized management of funds, strictly controlled the scale of monetary funds and interest-bearing debts and stabilized our operating cash flow situation.

In respect of our debts and borrowings in 2022, we increased our debts to RMB174.3 billion at the end of 2022 from RMB130.1 billion at the beginning of 2022 to stabilize our cash flow, among which, our short-term debts increased by RMB23.8 billion as compared to the beginning of 2022, primarily due to the increase in short-term borrowings by our listed entity, representing an increase in short-term debt as a percentage of the overall financing debts from 27.09% at the beginning of 2022 to 33.87% at the end of 2022. Our long-term debts increased by RMB7.4 billion from the beginning of 2022, primarily because of the increase in long-term borrowings by our listed entity, representing an increase in long-term debt as a percentage of the overall financing debts from 60.18% at the beginning of 2022 to 49.17% at the end of 2022. Our short-term debts consist of revolving loans borrowed pursuant to our business plan and operation needs and overdraft agreements entered into on the corporate bank account with our strategic-alliance banks to meet our intra-day payment requirements.

Contractual Obligations and Commercial Commitments

The following table sets forth our obligations and commitments to make future payments under contracts and commercial commitments as of December 31, 2022.

	As of December 31, 2022		
	Total	less than 1 year (RMB in millions)	More than 1 year
Contractual obligations⁽¹⁾			
Short-term debt	83,922	83,922	—
Long-term debt	119,596	2,571	117,025
Total contractual obligations	203,518	86,493	117,025
Other commercial commitments			
Capital commitments	261,914	167,507	94,407
Exploration and production licenses	1,701	369	1,332
Guarantees ⁽²⁾	8,927	8,927	—
Total commercial commitments	272,542	176,803	95,739

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

- (2) Guarantee is not limited by time, therefore specific payment due period is not applicable. As of December 31, 2022, except for guarantees in relation to banking facilities granted to certain parties, we have not entered into any off-balance sheet arrangements. As of December 31, 2022, the maximum amount of potential future payments under the guarantees was RMB8.9 billion. As of December 31, 2021, the maximum amount of potential future payments under the guarantees was RMB14.9 billion. See Note 34 to the consolidated financial statements for further information of the guarantees.

Historical and Planned Capital Expenditure

The following table sets forth our capital expenditure by segment for the years of 2020, 2021 and 2022, and the capital expenditure in each segment as a percentage of our total capital expenditure for such year.

	2020		2021		2022		Total	
	RMB	Percent	RMB	Percent	RMB	Percent	RMB	Percent
			(in billions, except percentage data)					
Exploration and production	56.4	41 %	68.1	41 %	83.3	44 %	207.8	42 %
Refining	24.8	18 %	22.5	13 %	22.9	12 %	70.2	14 %
Marketing and distribution	25.4	18 %	21.9	13 %	19.1	10 %	66.4	13 %
Chemicals	28.2	21 %	51.6	31 %	58.6	31 %	138.4	28 %
Corporate and others	2.3	2 %	3.8	2 %	5.2	3 %	11.3	2 %
Capital Expenditure	137.1	100 %	167.9	100 %	189.1	100 %	494.1	100 %

In 2022, focusing on investment quality and return, the Company continued to optimize investment management. The capital expenditures for the whole year were RMB189.1 billion, among which:

- *Exploration and production.* RMB83.3 billion, mainly used for crude production capacity construction in Shunbei Oilfield, Tahe Oilfield and Shengli Offshore Oilfield, natural gas production capacity construction in Western Sichuan, Fuling and Weirong, and the development and testing and the construction of storage and transmission facilities for the Shengli Jiyang Shale Oil National Demonstration Zone.
- *Refining.* RMB22.9 billion, mainly used for the expansion of Zhenhai refinery, structural adjustment of Anqing and Yangzi refineries, and the construction of a hydrogen energy supply center.
- *Marketing and distribution.* RMB19.1 billion, mainly used for network development for oil-gas-hydrogen integrated energy stations, upgrading of current end sales network, and non-petrol projects.
- *Chemicals.* RMB58.6 billion, mainly used for Zhenhai, Sinopec-SK, Hainan and Tianjin Nangang ethylene projects, Jiujiang and Zhenhai aromatics projects, Shanghai large-tow carbon fiber project, Yizheng PTA project, and the relocation of Baling caprolactam project.
- *Corporate and others.* RMB5.2 billion, mainly for research and development facilities and information technology projects.

Capital expenditures for the year 2023 are budgeted at RMB165.8 billion, among which:

- *Exploration and production.* The planned capital expenditure in 2023 for this segment is approximately RMB74.4 billion, with focuses on the construction of crude oil production capacity in Jiyang and Tahe oilfields and natural gas production capacity in Western Sichuan, as well as the construction of oil and gas storage and transmission facilities.
- *Refining.* The planned capital expenditure in 2023 for this segment is RMB22.7 billion, mainly on the Yangzi refinery structural adjustment projects and the expansion of the Zhenhai refinery.
- *Marketing and distribution.* The planned capital expenditure in 2023 for this segment is RMB16.6 billion to be mainly utilized for network development for oil-gas-hydrogen integrated energy stations, restructuring upgrading of current end sales network, and non-petrol products projects.

- *Chemicals.* The planned capital expenditure in 2023 for this segment is RMB46.6 billion, which will be mainly utilized for Zhenhai, Hainan, Tianjin Nangang and Maoming ethylene projects, Yizheng PTA project, and the relocation of Baling caprolactam project.
- *Corporate and others.* The planned capital expenditure in 2023 for this segment is RMB5.5 billion, to be mainly utilized for the construction of research and development facilities and information technology projects.

Research and Development

Our expenditures for research and development were RMB15.2 billion in 2020, RMB21.1 billion in 2021 and RMB22.5 billion in 2022, among which the research expenses were RMB10.1 billion, RMB11.5 billion and RMB12.8 billion for 2020, 2021 and 2022, respectively.

Cash and Asset Transfer among the Company and its Subsidiaries

All cash transfers among the Company and its subsidiaries have been eliminated in the Company's consolidated statement of cash flows. For efficient use of cash among the Company and its subsidiaries, certain cash transfers were made among the Company and its subsidiaries in 2022 to satisfy actual funding requirements of the Company and its subsidiaries:

- In 2022, the Company received loan repayments from its subsidiaries totaling RMB7.2 billion, obtained loans with an aggregate principal amount of RMB4.1 billion from its subsidiaries, received cash dividend distributions totaling RMB18.9 billion from its subsidiaries.
- In 2022, the Company provided loans in the aggregate principal amount of RMB10.2 billion to its subsidiaries and made additional capital contributions to its subsidiaries in the aggregate amount of RMB15.6 billion. During the same year, the Company's repayment of outstanding loans owed to its subsidiaries totaled RMB3.6 billion.
- There was no non-cash asset transfer among the Company and its subsidiaries in 2022 that were of significant value.

Consumer Price Index

According to the data provided by the National Bureau of Statistics, the consumer price index (CPI) in the PRC increased by 2.0% in 2022 over 2021 (CPI increased by 0.9% in 2021) and increased by 2.9% over 2020.

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

A. DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

DIRECTORS

The table and discussion below set forth certain information concerning our directors. The current term for all of our directors of the seventh session of the Board of Directors will expire in May 2024.

Name	Age	Position with the Company
Ma Yongsheng	61	Chairman, Non-executive Director
Zhao Dong	52	Non-executive Director
Yu Baocai	58	Executive Director, President
Li Yonglin	56	Executive Director, Senior Vice President
Liu Hongbin	60	Executive Director, Senior Vice President
Cai Hongbin	55	Independent Non-executive Director
Ng, Kar Ling Johnny	62	Independent Non-executive Director
Shi Dan	61	Independent Non-executive Director
Bi Mingjian	67	Independent Non-executive Director

Ma Yongsheng, aged 61, Chairman of the Board of Sinopec Corp. Mr. Ma is a professor level senior engineer with a Ph.D. degree. Mr. Ma is a member of the 13th and 14th National Committee of Chinese People's Political Consultative Conference (CPPCC) and an academician of the Chinese Academy of Engineering. In April 2002, he was appointed as Chief Geologist of Sinopec Southern Exploration and Production Company; in April 2006, he was appointed as Executive Deputy Manager (in charge of overall management), Chief Geologist of Sinopec Southern Exploration and Production Company; in January 2007, he was appointed as General Manager and Party Secretary of CPC Committee of Sinopec Southern Exploration and Production Company; in March 2007, he served as General Manager and Deputy Party Secretary of CPC Committee of Sinopec Exploration Company; in May 2007, he was appointed as Deputy Commander of Sichuan-East China Gas Pipeline Project Headquarter of Sinopec Corp.; in May 2008, he was appointed as Deputy Director General of Exploration and Production Department of Sinopec Corp. (Director General Level); in July 2010, he served as Deputy Chief Geologist of Sinopec Corp.; in August 2013, he was appointed as Chief Geologist of Sinopec Corp.; in December 2015, he served as Vice President of China Petrochemical Corporation and was appointed as Senior Vice President of Sinopec Corp.; in January 2017, he was appointed as Member of the Leading Party Member Group of China Petrochemical Corporation; in October 2018, he was appointed as President of Sinopec Corp; in April 2019, he was appointed as Director, President and Vice Secretary of the Leading Party Member Group of China Petrochemical Corporation; in November 2021, he was appointed as Chairman and Secretary of the Leading Party Member Group of China Petrochemical Corporation. Mr. Ma was elected as Director of Sinopec Corp. in February 2016, and was elected as the Chairman of the Board of Sinopec Corp. in November 2021.

Zhao Dong, aged 52, Director of Sinopec Corp. Mr. Zhao is a professor level senior accountant with a Ph.D. degree. Mr. Zhao is an alternate member of the 20th Central Committee of the Party. In July 2002, he was appointed as Chief Accountant and General Manager of Financial Assets Department of CNPC International (Nile) Ltd.; in January 2005, he was appointed as Deputy Chief Accountant and Executive Deputy Director of Financial and Capital Operation Department of China National Oil and Gas Exploration and Development Corporation; in April 2005, he was appointed as Deputy Chief Accountant and General Manager of Financial and Capital Operation Department of China National Oil and Gas Exploration and Development Corporation; in June 2008, he was appointed as Chief Accountant of China National Oil and Gas Exploration and Development Corporation; in October 2009, he was appointed as Chief Accountant of China National Oil and Gas Exploration and Development Corporation and Chief Financial Officer of PetroChina International Investment Company Limited; in September 2012, he was appointed as Deputy General Manager of CNPC Nile Company; in August 2013, he was appointed as General Manager of CNPC Nile Company; in November 2015, he was appointed as Chief Financial Officer of PetroChina Company Limited. In November 2016, he was appointed as a Member of the Leading Party Member Group and Chief Accountant of China Petrochemical Corporation; in May 2020, he was appointed as Director and Deputy Secretary of the Leading Party Member Group of China Petrochemical Corporation; in June 2022, he was appointed as Director, President and Vice Secretary of the Leading Party Member Group of China Petrochemical Corporation. In June 2017, he was elected as Chairman of Board of Supervisors of Sinopec Corp.; in May 2021, he was elected as Director of Sinopec Corp.

Yu Baocai, aged 58, Director and President of Sinopec Corp. Mr. Yu is a senior engineer with a master's degree in economics. In September 1999, Mr. Yu was appointed as Deputy General Manager of Daqing Petrochemical Company; in December 2001, he was appointed as General Manager and Deputy Secretary of CPC Committee of Daqing Petrochemical Company; in September 2003, he was appointed as General Manager and Secretary of CPC Committee of Lanzhou Petrochemical Company; in June 2007, he was appointed as General Manager and Deputy Secretary of CPC Committee of Lanzhou Petrochemical Company and General Manager of Lanzhou Petroleum & Chemical Company; in September 2008, he was appointed as a member of the Leading Party Member Group and Deputy General Manager of China National Petroleum Corporation (CNPC) and since May 2011, he acted concurrently as Director of PetroChina Company Limited; in June 2018, he was appointed as a Member of the Leading Party Member Group and Vice President of China Petrochemical Corporation; in September 2020, he was appointed as Senior Vice President of Sinopec Corp. Mr. Yu was elected as Director of Sinopec Corp. in October 2018, and was appointed as President of Sinopec Corp. in November 2021.

Li Yonglin, aged 56, Director and Senior Vice President of Sinopec Corp. Mr. Li is a professor level senior engineer with a Ph.D. degree. Mr. Li is a member of the 13th National Committee of CPPCC. He was appointed as Vice General Manager of Sinopec Maoming Company in March 2003; in July 2009, he was appointed as Chief of Preparatory Group for the Beihai Refining Off-Site Reconstruction Project; in November 2011, he was appointed as General Manager and Deputy Secretary of CPC Committee of Sinopec Beihai Refining & Chemical Co., Ltd.; in March 2015, he was appointed as Vice Director General of Refining Division of Sinopec Corp. (Director General Level); in December 2016 he was appointed as General Manager and Deputy Secretary of CPC Committee of Sinopec Tianjin Petrochemical Company, General Manager of Sinopec Tianjin Company and Vice Chairman of SINOPEC SABIC Tianjin Petrochemical Co., Ltd.; in October 2019, he was appointed as Secretary of CPC Committee of Sinopec Tianjin Petrochemical Company and Corporate Representative of Sinopec Tianjin Company; in July 2020, he was appointed as Assistant to the President of China Petrochemical Corporation, concurrently serving as General Manager of Human Resources Department and Head of Organizational Department of the Leading Party Member Group; in November 2020, he was appointed as a member of Leading Party Member Group and Vice President of China Petrochemical Corporation.; in May 2021, he was elected as Director of Sinopec Corp. and was appointed as Senior Vice President of Sinopec Corp.

Liu Hongbin, aged 60, Director and Senior Vice President of Sinopec Corp. Mr. Liu is a senior engineer with a bachelor's degree. In June 1995, he was appointed as Chief Engineer of Tuha Petroleum Exploration & Development Headquarters; in July 1999, he was appointed as Deputy General Manager of PetroChina Tuha Oilfield Company; in July 2000, he was appointed as Commander and Deputy Secretary of CPC Committee of Tuha Petroleum Exploration & Development Headquarters; in March 2002, he served as General Manager of the Planning Department of PetroChina Company Limited; in September 2005, he served as Director of the Planning Department of CNPC; in June 2007, he was appointed as Vice President of PetroChina Company Limited, and in November 2007, he served concurrently as General Manager and Secretary of CPC Committee of the Marketing Branch of PetroChina Company Limited; in June 2009, he served concurrently as General Manager and Deputy Secretary of CPC Committee of the Marketing Branch of PetroChina Company Limited; in July 2013, he was appointed as Member of the Leading Party Member Group and Deputy General Manager of CNPC and in August 2013, he served concurrently as an Executive Director and General Manager of Daqing Oilfield Company Limited, Head of enterprise Coordination in Heilongjiang Province, Director of Daqing Petroleum Administration Bureau and Deputy Secretary of CPC Committee of Daqing Oilfield; in May 2014, he served concurrently as Director of PetroChina Company Limited; in November 2019, he was appointed as a member of the Leading Party Member Group of China Petrochemical Corporation; in December 2019, he was appointed as Vice President of China Petrochemical Corporation. In March 2020, he was appointed as Senior Vice President of Sinopec Corp. In May 2020, he was elected as Director of Sinopec Corp.

Cai Hongbin, aged 55, Independent Director of Sinopec Corp. Mr. Cai is Dean of Faculty of Business and Economics and Professor of Economics of the University of Hong Kong. Mr. Cai has a Ph.D. degree in Economics. From 1997 to 2005, Mr. Cai taught at the University of California, Los Angeles. Since 2005, he served as a professor and Ph.D. supervisor in Applied Economics Department at Guanghua School of Management at Peking University, and he once served as Director, Assistant to the Dean and Vice Dean of the Applied Economics Department. From December 2010 to January 2017, he served as Dean of Guanghua School of Management at Peking University. In June 2017, he joined the Faculty of Business and Economics of the University of Hong Kong. Mr. Cai once served as a member of the 12th National People's Congress, a member of Beijing Municipal Committee of CPPCC, a member of the 11th Central Committee of China Democratic League, Deputy Chairman of Beijing Municipal Committee of China Democratic League and a Special Auditor of the National Audit Office. He currently serves as an Independent Director of CCB International (Holdings) Limited, China Merchants Finance Holdings Company Limited and Ping An Bank Co., Ltd. In May 2018, he was elected as Independent Director of Sinopec Corp.

Ng, Kar Ling Johnny, aged 62, Independent Director of Sinopec Corp. Mr. Ng currently is a practicing Certified Public Accountant in Hong Kong, a practicing auditor and accountant in Macau, a Fellow of the Hong Kong Institute of Certified Public Accountants (FCPA), a Fellow of the Association of Chartered Certified Accountant (FCCA), and a Fellow of the Institute of Chartered Accountants in England and Wales (FCA). Mr. Ng obtained a bachelor's degree and a master's degree in business administration from the Chinese University of Hong Kong in 1984 and 1999, respectively. Mr. Ng joined KPMG (Hong Kong) in 1984 and became a Partner in 1996. He acted as a Managing Partner from June 2000 to September 2015 and Vice Chairman of KPMG China from October 2015 to March 2016. Mr. Ng currently serves as Independent Non-executive Director of China Vanke Co., Ltd., Metallurgical Corporation of China Ltd and China Telecom Corporation Limited. In May 2018, he was elected as Independent Director of Sinopec Corp.

Shi Dan, aged 61, Independent Director of Sinopec Corp. Ms. Shi is the legal representative and Chairman of China Industrial Economics Society, a member of Expert Advisory Committee of the National Energy Commission and a member of National Expert Committee on Climate Change and enjoys special government subsidies from the State Council. Ms. Shi obtained bachelor's degree in engineering, master's degree in economics, master's degree of development economics and Ph.D. degree in management from Changchun University of Technology, Renmin University of China, Australian National University and Huazhong University of Science and Technology respectively. In October 1993, Ms. Shi was appointed as Research Fellow and Assistant to the Dean of the Institute of Industrial Economics of Chinese Academy of Social Sciences; in August 2010, Ms. Shi was appointed as a Research Fellow and Deputy Dean of National Academy of Economic Strategy, Chinese Academy of Social Sciences; in November 2013, she was appointed as a Research Fellow and Secretary of CPC Committee (Deputy Dean) of the Institute of Industrial Economics of Chinese Academy of Social Sciences; from November 2017 to August 2021, she served concurrently as External Director of China Energy Investment Corporation Limited. In March 2019, she was appointed as Dean of Institute of Industrial Economics of Chinese Academy of Social Sciences. In May 2021, she was elected as Independent Director of Sinopec Corp.

Bi Mingjian, aged 67, Independent Director of Sinopec Corp. Mr. Bi obtained the certificate of diploma majoring in English from East China Normal University in 1982 and master's degree in business administration from George Mason University in the United States of America in 1993 respectively. Mr. Bi served as a cadre at Shanghai Subei Haifeng Farm from April 1977 to April 1979; he studied at the External Training Program of the Cadre School of the Ministry of State Farms and Land Reclamation, and subsequently he studied at a farm in Saskatchewan Province of Canada from April 1979 to November 1980; he served as a cadre at the Foreign Affairs Bureau of the Ministry of State Farms and Land Reclamation from November 1980 to December 1983; he served successively as clerk and Deputy Division Chief of the State Farms and Land Reclamation Bureau of the Ministry of Agriculture from January 1984 to December 1985; he served as Operation Officer of the World Bank Representative Office in China from December 1985 to June 1988; he served as Deputy Director of the project office of China Rural Trust and Investment Corporation from June 1988 to October 1988; he served as Project Economist and Advisor of the World Bank from October 1988 to January 1994; he served as a cadre at People's Construction Bank of China from January 1994 to July 1995; he served successively as Senior Manager, Deputy Chief Executive Officer, member and Acting Chairman of the Management Committee, Co-Chief Operating Officer and Co-Head of the Investment Banking Department of China International Capital Corporation Limited (CICC) from August 1995 to February 2006; he served as a Senior Advisor to CICC from March 2006 to November 2012; he served as a Managing Partner of HOPU Investment Management Co., Ltd. from November 2012 to March 2015; he served as a non-executive director for China Investment Securities Co., Ltd. (currently known as China CICC Wealth Management Securities Company Limited) from March 2017 to January 2020; from March 2015 to December 2019, he served as Chief Executive Officer and Chairman of Management Committee of CICC; from May 2015 to February 2020, he served as Executive Director of CICC. In May 2021, he was elected as Independent Director of Sinopec Corp.

Supervisors

The table and discussion below set forth certain information concerning our supervisors. The current term for all of our supervisors of the seventh session of the Board of Supervisors will expire in May 2024.

Name	Age	Position with the Company
Zhang Shaofeng	51	Chairman of the Board of Supervisors
Qiu Fasen	57	Supervisor
Zhang Zhiguo	60	Supervisor
Wu Bo	49	Supervisor
Zhai Yalin	59	Supervisor
Guo Hongjin	57	Employee Representative Supervisor
Yin Zhaolin	57	Employee Representative Supervisor
Chen Yaohuan	59	Employee Representative Supervisor

Zhang Shaofeng, aged 51, Chairman of Board of Supervisors of Sinopec Corp. Mr. Zhang is a professor level senior accountant with a master's degree in business administration. In December 2008, he was appointed as Chief Accountant and Member of the CPC Committee of Trans-Asia Gas Pipeline Company Limited of China National Petroleum Corporation (CNPC); in July 2017, he was appointed as General Manager of Finance Department of CNPC (PetroChina Company Limited), and served concurrently as General Manager of Finance Department of PetroChina Company Limited; in December 2017, he was appointed as General Manager of Finance Department of CNPC (PetroChina Company Limited), and served concurrently as General Manager of Finance Department of PetroChina Company Limited; in July 2020, he was appointed as Member of the Leading Party Member Group and Chief Accountant of China Petrochemical Corporation. In September 2020, he was elected as Director of Sinopec Corp.; in May 2021, he was elected as Chairman of Board of Supervisors of Sinopec Corp.

Qiu Fasen, aged 57, Supervisor of Sinopec Corp. Mr. Qiu is a professor level senior auditor with a master's degree. In December 2001, he was appointed as the Deputy Director General of Audit Bureau of China Petrochemical Corporation and Deputy Director General of Audit Department of Sinopec Corp.; in January 2007, he was appointed as the Director General of Beijing branch of Audit Bureau (Department) of China Petrochemical Corporation; in November 2010, he was appointed as the Deputy Director General of Audit Bureau of China Petrochemical Corporation; in May 2014, he was appointed as Secretary of CPC Committee and Deputy General Manager of Sinopec Xinjiang Oil Products Company; in March 2015, he was appointed as General Manager and Deputy Secretary of CPC Committee of Sinopec Xinjiang Oil Products Company; in December 2018, he was appointed as Director General of Mineral Acreage (Community) Management Department of China Petrochemical Corporation; in December 2019, he was appointed as Vice President of Audit Department of Sinopec Corp. and Deputy Director General (Director General Level) of the Office of Audit Committee of Leading Party Member Group of China Petrochemical Corporation; in April 2021, he was appointed as President of Audit Department of Sinopec Corp. and Director General of the Office of Audit Committee of Leading Party Member Group of China Petrochemical Corporation; in July 2021, he was appointed as Secretary of the CPC Committee of the Audit Center of China Petrochemical Corporation. In May 2022, he was appointed as Chief Auditor of China Petrochemical Corporation. In May 2022, he was elected as Supervisor of Sinopec Corp.

Zhang Zhiguo, aged 60, Supervisor of Sinopec Corp. Mr. Zhang is a professor level senior administration engineer with a master's degree. In September 2009, he was appointed as Deputy Director General of Corporate Office of China Petrochemical Corporation (Sinopec President's office); in March 2015, he was appointed as Secretary of CPC Committee of Sinopec Management Institute (Sinopec Communist Party School); in December 2018, he was appointed as Director General of the Office of Leading Party Member Group Inspection Work of China Petrochemical Corporation; in December 2019, he was appointed as Director General of the General Management Department and Director of Leading Party Member Group Office of China Petrochemical Corporation. In May 2021, he was elected as Supervisor of Sinopec Corp.

Wu Bo, aged 49, Supervisor of Sinopec Corp. Mr. Wu is a senior economist with a bachelor's degree. In May 2012, he was appointed as Chief Accountant of Sinopec Hainan Refining and Chemical Company Limited; in August 2017, he was appointed as Deputy General Manager and Chief Accountant of Sinopec Chemical Sales Company Limited; in December 2018, he was appointed as Deputy General Manager and Chief Accountant of China International United Petroleum and Chemical Company Limited; in December 2019, he was appointed as General Manager of Finance Department of China Petrochemical Corporation; in July 2021, he was also appointed as Chairman of Sinopec Century Bright Capital Investment Limited. In May 2022, he was elected as Supervisor of Sinopec Corp.

Zhai Yalin, aged 59, Supervisor of Sinopec Corp. Mr. Zhai is a professor level senior economist with a bachelor's degree. In December 2001, he was appointed as Deputy Director General of Audit Bureau of China Petrochemical Corporation and Deputy Director General of Audit Department of Sinopec Corp.; in April 2018, he was appointed as Director General of the Inspection Team of Leading Party Member Group and Deputy Director General of Audit Bureau of China Petrochemical Corporation and Deputy Director General of Audit Department of Sinopec Corp.; in October 2020, he was appointed as Executive Director and Secretary of the CPC Committee of Sinopec Baichuan Economic and Trade Co., Ltd.; in May 2022, he was appointed as General Manager of Sinopec Logistics Service Center. In May 2022, he was elected as Supervisor of Sinopec Corp.

Guo Hongjin, aged 57, Employee's Representative Supervisor of Sinopec Corp. Mr. Guo is a professor level senior engineer with a Ph.D. degree. In July 2013, he was appointed as Deputy General Manager of Sinopec Shengli Oilfield Company; in March 2018, he was appointed as General Manager and Deputy Secretary of CPC Committee of Sinopec Shengli Petroleum Administrative Bureau Co., Ltd. and General Manager of Sinopec Shengli Oilfield Company; in December 2018, he was appointed as Executive Director, General Manager and Deputy Secretary of CPC Committee of Sinopec Jiangnan Petroleum Administrative Bureau Co., Ltd. and General Manager of Sinopec Jiangnan Oilfield Company; in July 2019, he was appointed as Executive Director and Secretary of CPC Committee of Sinopec Jiangnan Petroleum Administrative Bureau Co., Ltd. and the representative of Sinopec Jiangnan Oilfield Company; in April 2020, he was appointed as General Manager of the Petroleum Exploration & Development Department of Sinopec Corp; in May 2021, he was elected as Supervisor of Sinopec Corp. In May 2022, he was elected as Employee's Representative Supervisor of Sinopec Corp.

Yin Zhaolin, aged 57, Employee's Representative Supervisor of Sinopec Corp. Mr. Yin is a professor level senior engineer with a master's degree in engineering. In April 2010, he was appointed as Deputy General Manager of Sinopec Maoming Company; in January 2017, he was appointed as Executive Deputy General Manager of Sinopec Maoming Company (administrated as a General Manager of a Level-I Large-scale Enterprise); in April 2017, he was appointed as General Manager and Deputy Secretary of CPC Committee of Sinopec Maoming Petrochemical Company and General Manager of Sinopec Maoming Company; in July 2017, he was appointed to serve a temporary position as a member of the Standing Committee of the CPC Maoming Municipal Committee; in October 2020, he was appointed as Executive Director and Secretary of CPC Committee of the Sinopec Maoming Petrochemical Company and the representative of the Sinopec Maoming Company, head of Maoming-Zhanjiang Integration Leading Group; in May 2021, he was elected as Supervisor of Sinopec Corp. In May 2022, he was elected as Employee's Representative Supervisor of Sinopec Corp.

Chen Yaohuan, aged 59, Employee's Representative Supervisor of Sinopec Corp. Mr. Chen is a professor level senior engineer with a Master's degree awarded by Central Party School of the CPC. In October 2008, he was appointed as Deputy Director General of Refining Department of Sinopec Corp.; in March 2015, he was appointed as Executive Director, General Manager and Deputy Secretary of the CPC Committee of Sinopec Beihai Refining and Chemical Limited Liability Company; in May 2015, he was appointed as a member of the Standing Committee of the CPC Beihai Municipal Committee; in June 2018, he was appointed as General Manager and Deputy Secretary of the CPC Committee of Guangzhou Branch of Sinopec Corp. and General Manager of Guangzhou Branch of Sinopec Assets Management Corporation; in July 2019, he was appointed as Deputy Director General (Director General Level) and Chief Engineer of Refining Department of Sinopec Corp.; in October 2019, he was appointed concurrently as Chairman of Sinopec Kantons International Limited and Sinopec Kantons Holdings Limited; in December 2019, he was appointed concurrently as General Manager of Refining Department of Sinopec Corp., Vice Chairman and Chairman of Audit Committee of Yanbu Aramco Sinopec Refining Company Ltd.; in August 2020, he was appointed concurrently as Executive Director and Secretary of CPC Committee of Sinopec Petroleum Marketing Company Limited and Chairman of Sinopec Petroleum Storage and Reserve Limited. In January 2021, he was elected as Employee's Representative Supervisor of Sinopec Corp.

Other Executive Officers

Name	Age	Positions with Sinopec Corp.
Lv Lianggong	57	Senior Vice President
Shou Donghua	54	CFO
Zhao Rifeng	60	Vice President
Huang Wensheng	56	Vice President/Secretary to the Board of Directors

Lv Lianggong, aged 57, Senior Vice President of Sinopec Corp. Mr. Lv is a professor level senior engineer with a master's degree. In December 2001, he was appointed as Deputy Manager of Sinopec Jinan Company; in August 2008, he was appointed as Manager and Deputy Secretary of the CPC Committee of Sinopec Jinan Company; in December 2008, he was appointed as General Manager and Deputy Secretary of the CPC Committee of Sinopec Jinan Company; in December 2016, he was appointed as General Manager and Deputy Secretary of the CPC Committee of Anqing Petrochemical General Plant of China Petrochemical Corporation, and General Manager of Sinopec Anqing Company; in July 2017, he was appointed to serve a temporary position as a member of the Standing Committee of the CPC Anqing Municipal Committee; in September 2018, he was appointed as the General Manager and Deputy Secretary of the CPC Committee of Sinopec Zhenhai Refining & Chemical Company; in December 2019, he was appointed as Representative and Secretary of the CPC Committee of Sinopec Zhenhai Refining & Chemical Company; in December 2020, he was appointed as Deputy Chief Economist, Director General of Organization Department of Leading Party Member Group of China Petrochemical Corporation and President of Human Resource Department of Sinopec Corp.; in June 2021, he was appointed as Director General of the Office of the Organizational Structure Establishment Committee of Leading Party Member Group of China Petrochemical Corporation; in August 2022, he was appointed as a Member of the Leading Party Member Group and Deputy General Manager of China Petrochemical Corporation. In May 2022, he was elected as Supervisor of Sinopec Corp., and in October 2022, he was appointed as Senior Vice President of Sinopec Corp.

Shou Donghua, aged 54, Chief Financial Officer of Sinopec Corp. Ms. Shou is a professor level senior accountant with a Master's degree of business administration. In July 2010, she was appointed as the Chief Financial Officer of Sinopec Zhenhai Refining & Chemical Company; in October 2014, she was appointed as Deputy Director General of Human Resource Department of Sinopec Corp.; in August 2017, she was appointed as the Secretary of CPC Committee of Sinopec Zhenhai Refining & Chemical Company and Deputy General Manager of Sinopec Zhenhai Refining & Chemical Company; in August 2018, she was appointed as the Director General of Finance Department of China Petrochemical Corporation and concurrently served as the Chairman of Sinopec Century Bright Capital Investment Limited; in December 2019, she was appointed as General Manager of Finance Department of Sinopec Corp. and concurrently served as the Chairman of Sinopec Century Bright Capital Investment Limited; in January 2020, she was appointed as Chief Financial Officer of Sinopec Corp.

Zhao Rifeng, aged 60, Vice President of Sinopec Corp. Mr. Zhao is a professor level Senior Engineer with a Master's degree. In July 2000, he was appointed as Deputy General Manager of Sinopec Jinling Petrochemical Co., Ltd. and Deputy Manager of Sinopec Jinling Company; in October 2004, he was appointed as General Manager of Sinopec Jinling Company; in October 2006, he was appointed as Vice Chairman and General Manager of Sinopec Jinling Petrochemical Co., Ltd.; in November 2010, he was appointed as Chairman, General Manager, Deputy Secretary of CPC Committee of Sinopec Jinling Petrochemical Co., Ltd.; in August 2013, he was appointed as Director General of Refining Department of Sinopec Corp.; in December 2017, he was appointed as the Director General of the Marketing Department of Sinopec Corp. and Chairman and Secretary of CPC Committee of Sinopec Marketing Company Limited; in December 2019, he was appointed as the President of the Marketing Department of Sinopec Corp. and Chairman and Secretary of CPC Committee of Sinopec Marketing Company Limited. In February 2018, he was appointed as Vice President of Sinopec Corp.

Huang Wensheng, aged 56, Vice President of Sinopec Corp., Secretary to the Board of Directors. Mr. Huang is a professor level senior economist with a university diploma. In March 2003, he was appointed as Deputy Director General of the Board Secretariat of Sinopec Corp.; in May 2006, he was appointed as Representative on Securities Matters of Sinopec Corp.; in August 2009, he was appointed as the Deputy Director General of President's office of Sinopec Corp.; in September 2009, he was appointed as Director General of the Board Secretariat of Sinopec Corp.; in June 2018, he was appointed concurrently as Director General of Department of Capital Management and Financial Services of Sinopec Corp.; in July 2018, he was appointed concurrently as Chairman and Secretary of CPC Committee of Sinopec Capital Co., Ltd.; in December 2019, he was appointed as President of Department of Capital Management and Financial Services of Sinopec Corp.. In May 2012, he was appointed as Secretary to the Board of Directors of Sinopec Corp; in May 2014, he was appointed as Vice President of Sinopec Corp.

B. COMPENSATION

Salaries of Directors, Supervisors and Members of the Senior Management

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

The following table sets forth the compensation on individual basis for our directors, supervisors and executive officers who received compensation from us in 2022.

Name	Position with the Company	Remuneration paid by the Company in 2022 (RMB in ten thousands before tax)
<i>Directors</i>		
Ma Yongsheng	Chairman, Non-executive Director	—
Zhao Dong	Non-executive Director	—
Yu Baocai	Executive Director, President	170.48
Li Yonglin	Executive Director, Senior Vice President	—
Liu Hongbin	Executive Director, Senior Vice President	141.68
Cai Hongbin	Independent Non-executive Director	45.00
Ng, Kar Ling Johnny	Independent Non-executive Director	45.00
Shi Dan	Independent Non-executive Director	45.00
Bi Mingjian	Independent Non-executive Director	45.00
Ling Yiqun ⁽¹⁾	Former Executive Director, Senior Vice President	—
<i>Supervisors</i>		
Zhang Shaofeng	Chairman of the Board of Supervisors	—
Qiu Fasen ⁽²⁾	Supervisor	—
Zhang Zhiguo	Supervisor	—
Wu Bo ⁽³⁾	Supervisor	—
Zhai Yalin ⁽⁴⁾	Supervisor	—
Guo Hongjin	Employee Representative Supervisor	158.81
Yin Zhaolin	Employee Representative Supervisor	43.49
Chen Yaohuan	Employee Representative Supervisor	168.42
Jiang Zhenying ⁽⁵⁾	Former Supervisor	—
Lv Lianggong ⁽⁶⁾	Former Supervisor	—
Li Defang ⁽⁷⁾	Former Employee Representative Supervisor	105.66
Lv Dapeng ⁽⁸⁾	Former Employee Representative Supervisor	17.97
<i>Other Executive officers</i>		
Lv Lianggong ⁽⁹⁾	Senior Vice President	—
Shou Donghua	CFO	178.56
Zhao Rifeng	Vice President	181.23
Huang Wensheng	Vice President/Secretary to the Board of Directors	178.38
Chen Ge ⁽¹⁰⁾	Former Senior Vice President	175.76
Yu Xizhi ⁽¹¹⁾	Former Vice President	180.46

Note:

(1) Mr. Ling Yiqun resigned as a Director on April 6, 2023.

- (2) Mr. Qiu Fasen was elected as a Supervisor on May 18, 2022.
- (3) Mr. Wu Bo was elected as a Supervisor on May 18, 2022.
- (4) Mr. Zhai Yalin was elected as a supervisor on May 18, 2022.
- (5) Mr. Jiang Zhenying resigned as a Supervisor on May 18, 2022.
- (6) Mr. Lv Lianggong resigned as a Supervisor on October 17, 2022.
- (7) Mr. Li Defang resigned as an Employee Representative Supervisor on May 18, 2022.
- (8) Mr. Lv Dapeng resigned as an Employee Representative Supervisor on May 18, 2022.
- (9) Mr. Lv Lianggong was appointed as a Senior Vice President on October 28, 2022.
- (10) Mr. Chen Ge resigned as a Senior Vice President on July 20, 2022.
- (11) Mr. Yu Xizhi resigned as a Vice President on 9 March, 2023.

C. BOARD PRACTICE

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

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

The members of our strategy committee are Ma Yongsheng (as the chairperson), Yu Baocai, Li Yonglin, Liu Hongbin, Cai Hongbin, Shi Dan and Bi Mingjian.

The main responsibilities of the audit committee include:

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

The members of our audit committee are Ng, Kar Ling Johnny (as the chairperson), Cai Hongbin, Shi Dan and Bi Mingjian, all of whom are our Independent Non-executive Directors. Our Board has determined that Ng, Kar Ling Johnny qualifies as an audit committee financial expert.

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

- to review evaluation standards on the performance of directors and senior management, to conduct their evaluations and make suggestions to the Board; and
- to review compensation policies and scheme in respect of the remuneration of directors, supervisors and executive officers, and make suggestions to the Board.

The members of our remuneration committee are Bi Mingjian (as the chairperson), Ma Yongsheng and Ng, Kar Ling Johnny. The main responsibilities of the nominating committee include:

- to advise the Board on the size and composition of the Board based on the company's business activities, asset size and shareholding structure;
- to review the selection criteria and procedures for directors and senior management, and to make suggestions to the Board; and

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

The members of nominating committee are Shi Dan (as the chairperson), Ma Yongsheng and Ng, Kar Ling Johnny.

The main responsibilities of the sustainable development committee include:

- make recommendations to the Board on major decisions related to the Company's sustainable development (including environmental, social and governance, etc.);
- supervise the implementation and progress of the Company's sustainable development strategies and plans;
- supervise the Company's commitment and performance on key issues such as climate change, safeguarding health and safety, and fulfilling social responsibilities, and make recommendations to the Board;
- pay attention to important information on sustainable development matters related to the Company's business, study the company's sustainable development-related matters, and make recommendations to the Board;
- review the Company's annual sustainable development report and make recommendations to the board of directors; and
- other matters authorized by the Board.

The members of sustainable development committee are Ma Yongsheng (as the chairperson), Zhao Dong, Li Yonglin and Cai Hongbin.

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

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

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

- to review the Company's financial affairs;
- to supervise directors and executive officers when they perform their duties, and to propose to our shareholders the dismissal of any director or executive officer who has violated our articles of association and relevant laws and regulation;
- to demand directors or executive officers to rectify their conducts that conflict with our interests;
- to propose the call of any extraordinary general meeting of shareholders to the Board, and to convene and preside over such shareholders' meeting if the Board fails to do so; and
- to initiate legal proceedings against directors and executive officers on behalf of the Company.

Our board of supervisors currently consists of eight supervisors including three employee representative supervisors. In 2022, the supervisors attended the Company's shareholders' meetings and presented at certain of the Company's board meetings, reviewed and supervised the making of the Company's major decisions, and made assessment on the work of the Board. The supervisors attended the Dedicated Training Course for Directors/Supervisors of listed companies held by the Listed Company Association of Beijing and strengthened their ability to perform their supervisory roles.

D. EMPLOYEES

As of December 31, 2020, 2021 and 2022, we had approximately 384,065, 385,691 and 374,791 employees, respectively. The following tables set forth the number of our employees by our business segments, their scope of work and their education as of December 31, 2022.

By Segment	Number of Employees	Percentage of Total Number of Employees (%)
Exploration and production	122,813	33
Refining	55,945	15
Marketing and distribution	117,393	31
Chemicals	67,393	18
Research and Development	6,354	2
Corporate and other	4,893	1
Total	374,791	100

By Employee's Scope of Work	Number of Employees	Percentage of Total Number of Employees (%)
Production	140,429	37
Technical	87,368	23
Sales	106,856	29
Finance	8,379	2
Administration	29,983	8
Others	1,776	1
Total	374,791	100

By Education	Number of Employees	Percentage of Total Number of Employees (%)
Master's degree and above	23,780	6
University	111,793	30
Junior college	86,375	23
Technical secondary school	28,041	8
Senior high school and technical school degree or below	124,802	33
Total	374,791	100

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

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

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

E. SHARE OWNERSHIP

As of December 31, 2022, none of our directors, supervisors and executive officers beneficially own any of our shares.

ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS**A. MAJOR SHAREHOLDERS**

The following table sets forth information regarding our 5% or more shareholders as of April 15, 2023.

Shareholder	Number of Shares Owned (in millions)	Percentage of Ownership (%)
Sinopec Group Company ⁽¹⁾⁽²⁾	81,340	67.84

(1) Inclusive of 767,916,000 H shares held by Sinopec Century Bright Capital Investment Ltd. (overseas wholly-owned subsidiary of Sinopec Group Company) under HKSCC Nominees Limited.

(2) Sinopec Group Company is controlled by the State-owned Assets Supervision and Administration Commission of the State Council of China.

Our ADR program, with Citibank, N.A. as the depository, terminated on December 5, 2022. Citibank, N.A. has advised us that, as of April 15, 2023, 17,118,502 ADSs, representing 1,711,850,200 H shares, were held of record by Cede & Co. and 22 other registered shareholders domiciled in and outside of the United States. We have no further information as to our shares held, or beneficially owned, by U.S. persons.

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

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

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

Sinopec Group Company is controlled by the State-owned Assets Supervision and Administration Commission of the State Council of China.

B. RELATED PARTY TRANSACTIONS

Sinopec Group Company owned 67.84% of our outstanding equity as of April 15, 2023. Sinopec Group Company is able to exercise all the rights of a controlling shareholder, including the election of directors and voting in respect of amendments to our articles of association. Sinopec Group Company, as our controlling shareholder, is subject to certain non-controlling shareholder protection provisions under our articles of association.

We have engaged from time to time and will continue to engage in a variety of transactions with Sinopec Group Company, which provide a number of services to us, including ancillary supply, transport, educational and community services. The nature of our transactions with Sinopec Group Company is governed by a number of service and other contracts between Sinopec Group Company and us. A discussion of these agreements and arrangements is set forth under the heading “Item 7. Major Shareholders and Related Party Transactions—B. Related Party Transactions” in our annual report on Form 20-F filed with the Securities and Exchange Commission on October 10, 2000, April 13, 2007, May 20, 2009, April 30, 2010, April 11, 2013, April 16, 2014, April 10, 2015, April 20, 2016, April 24, 2017, April 27, 2018, April 29, 2019, April 10, 2020, April 20, 2021, and April 28, 2022, respectively.

On July 9, 2018, we entered into the Articles of Association of Sinopec Capital Co., Ltd., or Sinopec Capital, with Sinopec Group Company, pursuant to which, we will establish Sinopec Capital with Sinopec Group Company with a registered capital of RMB10 billion, of which, we will subscribe capital contribution of RMB4.9 billion by cash, representing 49% of the registered capital of Sinopec Capital, and Sinopec Group will subscribe capital contribution of RMB5.1 billion by cash, representing 51% of the registered capital of Sinopec Capital. Upon the establishment of Sinopec Capital, its investments will focus on strategic emerging industries, including new energy, new material, energy conservation and environmental protection, and intelligence manufacturing in relation to the industry chain. In respect of the investment projects which are related to our principal business, we will have the right of first refusal to acquire such projects.

On August 27, 2021, we entered into the Continuing Connected Transaction Sixth Supplemental Agreement with Sinopec Group Company, pursuant to which amendments were made to the terms of Connected Transactions Agreement, and the new term is from January 1, 2022 to December 31, 2024. On October 20, 2021, the First Extraordinary General Meeting of 2021 of the Company approved the Continuing Connected Transactions for the three years ending December 31, 2024. See Exhibit 4.15.5 herewith for details of the continuing Connected Transactions. In 2022, our related connected transactions occurred in accordance with the abovementioned Continuing Connected Transaction Agreements amounted to RMB380.056 billion, among which, our purchase amounted to RMB244.360 billion, accounting for 7.31% of the amount of similar transactions, including products and services (purchasing, storage and transportation, exploration and development services, and production-related services) of RMB231.831 billion, house rental payment of RMB0.938 billion, land rental payment of RMB11.046 billion, and the interest expense of RMB0.545 billion. The amount of our sales was RMB135.696 billion, accounting for 3.95% of the transaction amount of similar transactions, including revenues from primary business of RMB134.345 billion, agency commission income of RMB0.144 billion and interest income of RMB1.207 billion. In addition, we provided entrusted loans to our related subsidiaries in the amount of RMB0.550 billion in 2022.

On April 29, 2020, Zhongke (Guangdong) Refining and Petrochemical Co., Ltd. (“Zhongke Refining”), a wholly-owned subsidiary of the Company, entered into a merger agreement with Sinopec Zhanjiang Dongxing Petrochemical Company Limited (“Zhanjiang Dongxing”), and the Company entered into a joint venture contract with Sinopec Century Bright Capital Investment Ltd. (“Century Bright Company”), pursuant to which, Zhongke Refining shall absorb and merge Zhanjiang Dongxing and, upon the completion of such transaction, Zhongke Refining will become the owner of all assets and liabilities of Zhanjiang Dongxing and will assume the existing businesses and personnel of Zhanjiang Dongxing with the Company and Century Bright Company holding 90.3% and 9.7% equity interest in Zhongke Refining, respectively.

On October 28, 2020, our board of directors approved the capital increase in Sinopec Baling Petrochemical Company Limited (“Baling Petrochemical”) by the Company with the Sinopec Group Asset Management Co., Ltd. (“Assets Company”) on a pro rata basis. The capital increase in Baling Petrochemical will be contributed by the Company and the Assets Company with an aggregate amount of approximately RMB6.3 billion, of which, the Company will contribute approximately RMB3.5 billion by injecting the relevant assets of the Company. Baling Branch and cash, and the Assets Company will contribute approximately RMB2.8 billion by injecting the relevant assets of Assets Company Baling Branch. Pursuant to the capital increase agreement, the registered capital of Baling Petrochemical will be increased from RMB100 million to RMB3 billion. Upon completion of the capital increase, the shareholders of Baling Petrochemical and their respective shareholdings will remain unchanged, while the Company and the Assets Company will continue to hold 55% and 45% equity interest in Baling Petrochemical, respectively. Baling Petrochemical will remain a subsidiary of the Company.

On March 26, 2021, (i) Sinopec Overseas Investment Holding Limited (“Overseas Investment Company”), a subsidiary of the Company, and Century Bright Company entered into the Agreement on Purchasing Equity Interest in Sinopec Hainan Refining and Chemical Company Limited, pursuant to which Overseas Investment Company proposed to purchase the 25% equity interest in Sinopec Hainan Refining and Chemical Company Limited held by Century Bright Company at a consideration of RMB5,769 million; (ii) the Company and Assets Company entered into the Agreement on Purchasing Equity Interest in Cangzhou Toray Fine Chemical Co., Ltd., pursuant to which the Company proposed to purchase the 40% equity interest in Cangzhou Toray held by Assets Company at a consideration of RMB20 million; (iii) the Company and Assets Company entered into the Agreement on Purchasing the Polypropylene and Utility Business Assets, pursuant to which the Company proposed to purchase the non-equity assets held by Assets Company, including the polypropylene and utility business assets of Cangzhou branch of Assets Company, at a consideration of RMB138 million; (iv) the Company and Beijing Orient Petrochemical Industry Co., Ltd. (“Orient Petrochemical”) entered into the Agreement on Purchasing Equipment and Relevant Assets, pursuant to which the Company proposed to purchase the non-equity assets held by Orient Petrochemical, including inventory and equipment, at a consideration of RMB715 million; and (v) Sinopec Beihai Refining and Chemical Limited Liability Company (“Beihai Refining and Chemical”), a subsidiary of the Company, and Beihai Petrochemical Limited Liability Company of Sinopec Group (“Beihai Petrochemical”) entered into the Agreement on Purchasing Assets of Beihai Petrochemical related to Pier Business, pursuant to which Beihai Refining and Chemical proposed to purchase the non-equity assets held by Beihai Petrochemical, including the pier operation platform, at a consideration of RMB149 million.

On September 7, 2021, Shanghai Petrochemical, a subsidiary of the Company, entered into a Joint Venture Agreement with Sinopec Baling Petrochemical Company Limited, pursuant to which both parties will jointly establish a joint venture and each shall make a cash contribution in the amount of RMB400 million.

On November 29, 2021, (i) the Company and Sinopec Group Asset Management Co., Ltd. (the “Assets Company”) entered into the Assets Company Agreement, pursuant to which it was agreed that Sinopec Corp. shall purchase the equity assets, non-equity assets and liabilities of the production and operating business held by the Assets Company at the price of RMB4,432.2570 million; (ii) Yizheng Chemical Fibre, a subsidiary of the Company, and Assets Company entered into the Yizheng Chemical Fibre Agreement, pursuant to which it was agreed that Yizheng Chemical Fibre shall purchase the equity assets, non-equity assets and liabilities of the production and operating business held by the Assets Company at the price of RMB1,142.9952 million; (iii) Sinopec Corp. and Group Yanshan entered into the Group Yanshan Agreement, pursuant to which it was agreed that Sinopec Corp. shall purchase the non-equity assets and liabilities of the production and operating business held by Group Yanshan at the price of RMB 1,473.6977 million.

On July 28, 2022, the Company and certain subsidiaries of INEOS entered into an agreement with respect to Shanghai SECCO, according to which, the Company conditionally agreed to sell, and INEOS Investment (Shanghai) Company Limited conditionally agreed to purchase, 50% equity interest in Shanghai SECCO. Further, the Company agreed to purchase, and INEOS Styrolution APAC Pte Limited agreed to sell, 50% equity interest in Ningbo Styrolution and the Company agreed to provide (or procure its affiliates to provide) corresponding shareholders’ loans to Ningbo Styrolution. The Company and INEOS Tianjin also agreed to form the HDPE JV on a 50:50 basis, for the construction of a 500,000 tonnes/year High Density Polyethylene (HDPE) project in Tianjin. The transaction with respect to Shanghai SECCO has been closed and Shanghai SECCO is no longer a subsidiary of the Company.

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

C. INTERESTS OF EXPERTS AND COUNSEL

Not applicable.

ITEM 8. FINANCIAL INFORMATION

A. CONSOLIDATED STATEMENTS AND OTHER FINANCIAL INFORMATION

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

Legal Proceedings

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

Dividend Distribution Policy

In 2012, we amended our dividend distribution policy in articles of association. Our dividend distribution policy was amended. According to our amended articles of association:

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

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

The Company may distribute dividends in the following forms: cash, shares or other forms provided by laws, administrative rules, regulations of competent authorities and regulatory provisions in the place where the Company's shares are listed. The Company shall give priority to the distribution of dividends in cash. The Company may make interim dividends distribution. The Company shall distribute cash dividends when the Company's net profit and retained earnings, in separate financial statement, are positive and the Company has adequate cash inflows over the requirements of cash outflows of operation and sustainable development. The cash dividends per annum should not be less than thirty percent of the net profit of the Company in the current year. The Company will be required to, pursuant to applicable PRC laws and regulations, withhold 10-20% dividend tax (based on the status of the shareholder) for dividends paid to holders of H shares (including ADSs representing such H shares), and make filing pursuant to applicable foreign exchange control procedures for the payment of such dividends. See "Item 10. Additional Information — D. Exchange Controls" and "Item 10. Additional Information — E. Taxation." In addition, ADS holders will be required to pay applicable service fees in relation to the distribution of cash dividends pursuant to the Deposit Agreement for China Petroleum & Chemical Corporation's American Depositary Shares. See "Item 12. Description of Securities other than Equity Securities — D. American Depositary Shares."

At the 15th meeting of the eighth session of our board, our board approved the proposal to distribute a final cash dividend of RMB0.195 (including tax) per share, combining with an interim distributed dividend of RMB0.16 (including tax) per share, the total dividend for 2022 is RMB0.355 (including tax) per share. The proposal is subject to the shareholder's approval at the annual general meeting.

In 2022, the Company declared and paid, out of its available funds, final cash dividends for the year of 2021 in the amount of RMB0.31 (including tax) per share as well as interim cash dividends for the year of 2022 in the amount of RMB0.16 (including tax) per share. For the financial year ended December 31, 2022, the Company declared and paid dividends totaling RMB0.47 (including tax) per share. For holders of our H-share (including ADSs representing our H shares), cash dividends are declared in RMB and paid in Hong Kong dollar.

The depositary of our ADSs, upon receipt of the dividend payments, will convert such proceeds into US dollar and distribute the same (with taxes and fees withheld as discussed below) to holders of our ADSs. In accordance with applicable PRC laws and regulations, the Company is required to withhold and pay a 10% dividend tax on dividends distributed through the depositary to our ADS holders. In addition, our ADS holders are required to pay applicable service fees in relation to the distribution of cash dividends pursuant to the Deposit Agreement. See "Item 12. Description of Securities other than Equity Securities — D. American Depositary Shares." Our ADS holders are entitled to a dividend of US\$6.96 per ADS (each representing 100 H shares) for the year of 2022, and receive US\$6.23 per ADS net of the 10% dividend withholding tax and a service fee of US\$0.02 per ADS charged (twice in 2022) by the depositary. For the year of 2022, the Company paid US\$58 million in total to ADS holders through the depositary.

B. SIGNIFICANT CHANGES

None.

ITEM 9. THE OFFER AND LISTING

A. OFFER AND LISTING DETAILS

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

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

On 14 February 2013, we issued 2,845,234,000 listed H shares with a par value of RMB1.00 each at the price of HKD 8.45 per share. The aggregate gross proceeds from the placing amounted to approximately HKD 24.0 billion.

On January 26, 2015, the conditional redemption of the 2011 convertible bonds amounting to RMB23 billion, was triggered. As of February 11, 2015 (the redemption registration date), the cumulative conversion of the 2011 convertible bonds to listed A shares is 4,623,769,047 shares, and the balance of registered 2011 convertible bonds is RMB52,766,000. On February 17, 2015, we redeemed the balance plus interests payable at the aggregate amount of RMB53,348,948.28. The 2011 convertible bonds were delisted from the Shanghai Stock Exchange.

We have voluntarily applied for the termination of the trading of our ADSs at the New York Stock Exchange, and our ADSs has been delisted from the New York Stock Exchange since September 8, 2022.

ITEM 10. ADDITIONAL INFORMATION

A. SHARE CAPITAL

Not applicable.

B. MEMORANDUM AND ARTICLES OF ASSOCIATION

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

Objectives and Purposes

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

Directors

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

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

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

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

The board of directors shall examine and approve the amount of the long-term loans for the current year according to the annual investment plan as approved by the shareholders' general meeting. The chairman of the board of directors is authorized to make adjustments of no more than 10% of the total amount of the long-term loans as approved by the board of directors for the current year. Within the total amount of the long-term loans as approved by the board of directors, the chairman of the board of directors is authorized to approve and execute individual long-term loan agreement with the loan amount exceeding RMB1 billion, and the president is authorized to approve and execute individual long-term loan agreement with the loan amount not exceeding RMB1 billion. Within the total amount of the working capital loans for the current year as approved by the board of directors, the chairman of the board of directors is authorized to execute the overall short-term loan facility agreement for raising working capitals as we need.

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

Dividends

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

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

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

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

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

Dividend payments may be subject to PRC withholding tax.

Voting Rights and Shareholders' Meetings

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

- where the number of directors is less than the number stipulated in the PRC Company Law or two-thirds of the number specified in our articles of association;
- where our unrecovered losses reach one-third of the total amount of our actually paid-in share capital;

- where shareholder(s) holding 10% or more of our issued and outstanding voting shares request(s) in writing the convening of an extraordinary general meeting;
- whenever our board deems necessary or our board of supervisors so requests; or
- circumstances provided in the articles of association.

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

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

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

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

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

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

The following decisions must be adopted by special resolution:

- an increase or reduction of our share capital or the issue of shares, including stock distributions, of any class, warrants and other similar securities;
- issuance of debentures;
- our division, merger, dissolution and liquidation; (Shareholders who object to a proposed division or merger are entitled to demand that either we or the shareholders who approved the merger purchase their shares at a fair price.)
- amendments to our articles of association and its appendices;
- change of our company form;
- acquisition or disposal of material assets or provision of material guarantee within one year, with the value exceeding 30% of our latest audited total assets;
- any stock incentive plan;
- any other matters required by laws and regulations or our articles of association and its appendices or considered by the shareholders in a general meeting and which they have resolved by way of an ordinary resolution to be of a nature which may have a material impact on us and should be adopted by special resolution.

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

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

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

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

Liquidation Rights

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

Further Capital Call

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

Increases in Share Capital and Preemptive Rights

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

- we issue domestic ordinary shares and/or overseas-listed foreign-invested shares, either separately or concurrently, in numbers not exceeding 20% of the number of domestic ordinary shares and overseas-listed foreign-invested shares then in issue, respectively, in any 12-month period, as approved by a special resolution of the shareholders; or
- if our plans for issuing domestic ordinary shares and overseas-listed foreign-invested shares upon our establishment are implemented within fifteen months of the date of approval by the China Securities Regulatory Commission.

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

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

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

Restrictions on Large or Controlling Shareholders

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

- to relieve a director or supervisor from his or her duty to act honestly in our best interests;
- to approve the expropriation by a director or supervisor (for his or her own benefit or for the benefit of another person) of our assets in any way, including, without limitation, opportunities which may benefit us; or
- to approve the expropriation by a director or supervisor (for his or her own benefit or for the benefit of another person) of the individual rights of other shareholders, including, without limitation, rights to distributions and voting rights (save according to a restructuring of our company which has been submitted for approval by the shareholders in a general meeting in accordance with our articles of association and its appendices).

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

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

- is in a position to elect half or more of the board of directors;
- has the power to exercise, or to control the exercise of, 30% or more of our voting rights;
- acting separately or in concert with others, holds 30% or more of our issued and outstanding shares; or
- acting separately or in concert with others, has de facto control of us in any other way.

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

Disclosure

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

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

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

Sources of Shareholders' Rights

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

- Shareholders holding 10 percent or more of the shares of the Company are entitled to petition the court to dissolve the Company if (i) the Company is in serious operational difficulties; (ii) its continuing existence will seriously prejudice the interests of the shareholders; and (iii) such difficulties cannot be resolved through any other means;
- Shareholders holding 1 percent or more of the shares of the Company for more than 180 consecutive days are entitled to request the board of supervisors (in terms of directors and senior management) or the board of directors (in terms of supervisors) to bring legal proceedings, or bring legal proceedings in their own name on behalf of the Company where it is in emergency and the Company will be subject to irreparable loss if not to do so, against directors, supervisors or senior management who fail to comply with the laws and regulations or the Company's articles of association in the course of performing their duties and cause loss to the Company;
- Shareholders who oppose the Company's decision on merger or separation are entitled to request the Company to repurchase their shares; and
- Shareholders holding 10 percent or more of the voting rights of the Company are entitled to convene a shareholders' meeting.

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

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

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

Enforceability of Shareholders' Rights

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

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

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

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

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

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

We have appointed our representative office, located 3050 Post Oak Blvd, Suite 800, Houston, Texas, 77056, as our agent to receive service of process with respect to any action brought against us in certain courts in New York under the United States federal and New York State's securities laws. However, as the PRC does not have treaties providing for the reciprocal recognition and enforcement of judgments of courts within the United States, the United Kingdom, Japan or most other the Organization for Economic Cooperation and Development countries, administrative actions brought by regulatory authorities, such as the Commission, and other actions which result in foreign court judgments, could (assuming such actions are not required by PRC law and the articles of association to be arbitrated) only be enforced in the PRC on a reciprocal basis or according to relevant international treaty to which China is a party if such judgments or rulings do not violate the basic principles of the law of the PRC or the sovereignty, security and public interest of the society of the PRC, as determined by a People's Court of the PRC which has the jurisdiction for recognition and enforcement of judgments. We have been advised by our PRC counsel, Haiwen & Partners, that there is certain doubt as to the enforceability in the PRC of actions to enforce judgments of United States courts arising out of or based on the ownership of H shares or ADSs, including judgments arising out of or based on the civil liability provisions of United States federal or state securities laws.

Restrictions on Transferability and the Share Register

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

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

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

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

C. MATERIAL CONTRACTS

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

D. EXCHANGE CONTROLS

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

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

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

E. TAXATION

PRC Taxation

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

Taxation of Dividends

Individual Investors

According to the PRC Individual Income Tax Law, as amended, dividends paid by Chinese companies are ordinarily subject to a Chinese withholding tax levied at a flat rate of 20%. For a foreign individual who has no domicile and does not stay in the territory of China or who has no domicile but has stayed in the territory of China for less than 183 days, the receipt of dividends from a company in China is normally subject to a withholding tax of 20% unless reduced or exempted by an applicable tax treaties.

Foreign Enterprises

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

Tax Treaties

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

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

Taxation of Capital Gains

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

PRC Stamp Tax Considerations

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

United States Federal Income Tax Considerations

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

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

- an individual who is a citizen or resident of the United States;
- a corporation created in or organized under the laws of, the United States or any State thereof or the District of Columbia;
- an estate the income of which is includible in gross income for United States federal income tax purposes regardless of its source; or
- a trust (a) the administration of which is subject to the primary supervision of a United States court and which has one or more United States persons who have the authority to control all substantial decisions of the trust or (b) that has otherwise elected to be treated as a United States person under the Code.

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

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

Passive Foreign Investment Company Considerations

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

We do not believe that we were classified as a PFIC for the taxable year ended December 31, 2022 and we do not expect to be classified as a PFIC for the current taxable year or for the foreseeable future. The determination of whether we will be or become a PFIC will depend, in part, upon the composition of our income and our assets (which are subject to change from year to year) and the market price of our H shares or ADSs (which may be volatile). Although we do not expect that our business plans will change in a manner that will affect our PFIC status, no assurance can be given in this regard. Because there are uncertainties in the application of the relevant rules and PFIC status is a fact-intensive determination made on an annual basis, no assurance can be given that we will not be classified as a PFIC for any taxable year.

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

Dividends

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

A non-U.S. corporation (other than a corporation that is classified as a PFIC for the taxable year in which the dividend is paid or the preceding taxable year) generally will be considered to be a qualified foreign corporation (i) if it is eligible for the benefits of a comprehensive tax treaty with the United States which the Secretary of Treasury of the United States determines is satisfactory for purposes of this provision and which includes an exchange of information program or (ii) with respect to any dividend it pays on stock which is readily tradable on an established securities market in the United States. There is currently a tax treaty in effect between the United States and the People’s Republic of China (U.S.-PRC Treaty) which the Secretary of Treasury of the United States determined is satisfactory for these purposes and we believe that we are eligible for the benefits of such treaty.

Although we presently believe that we are a qualified foreign corporation for purposes of the reduced tax rate, no assurance can be given that we will continue to be treated as a qualified foreign corporation in the future. US Holders should consult their tax advisors regarding the availability of the reduced tax rate on dividends under their particular circumstances. Dividends received on H shares or ADSs will not be eligible for the dividends received deduction allowed to corporations.

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

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

Sale or Other Disposition of H shares or ADSs

A US Holder will recognize capital gain or loss upon the sale or other disposition of H shares or ADSs in an amount equal to the difference between the amount realized upon the disposition and the US Holder's adjusted tax basis in such H shares or ADSs. The gain or loss will generally be capital gain or loss. Individuals and other non-corporate US Holders who have held the H shares or ADSs for more than one year will generally be eligible for reduced tax rates. Any capital gain or loss will be long-term if the H shares or ADSs have been held for more than one year and will generally be United States source gain or loss for United States foreign tax credit purposes, which will generally limit the availability of foreign tax credits. The deductibility of a capital loss may be subject to limitations.

As described in "Item 10. Additional Information—E. Taxation—PRC Taxation," if we are deemed to be a PRC resident enterprise under the Enterprise Income Tax Law, gains from the disposition of H shares or ADSs, may be subject to PRC income tax and will generally be United States source, which may limit the ability to receive a foreign tax credit. If a US Holder is eligible for the benefits of the U.S.-PRC Treaty, such holder may be able to elect to treat such gain as PRC-source income under the U.S.-PRC Treaty. Pursuant to recently issued United States Treasury regulations, however, if a US Holder is not eligible for the benefits of the U.S.-PRC Treaty or does not elect to apply the U.S.-PRC Treaty, then such holder may not be able to claim a foreign tax credit arising from any PRC tax imposed on the disposition of H shares or ADSs. The rules regarding foreign tax credits and deduction of foreign taxes are complex. US Holders should consult their tax advisors regarding the availability of a foreign tax credit or deduction in light of their particular circumstances, including their eligibility for benefits under the U.S.-PRC Treaty, and the potential impact of the recently issued United States Treasury Regulations.

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

Passive Foreign Investment Company Rules

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

As an alternative to the foregoing rules, a US Holder of “marketable stock” in a PFIC may make a mark-to-market election with respect to such stock. The mark-to-market election is available only for stock that is regularly traded on a qualified exchange or other market, which for these purposes generally means a national securities exchange that is registered with the SEC, or a foreign exchange or market that the IRS determines is a qualified exchange that has rules sufficient to ensure that the market price represents a legitimate and sound fair market value. Our ADSs were listed on the New York Stock Exchange, which is an established securities market in the US, from October 2000 to September 2022. On September 8, 2022, our ADSs were delisted from the NYSE and subsequently quoted on the OTC markets, which are not considered established securities markets in the US for these purposes. Consequently, if our ADSs remain delisted from the New York Stock exchange and are not otherwise listed on a qualified exchange or other market, as described above, our ADSs would not be treated as “marketable stock” for these purpose and a US Holder would not be eligible to make a mark-to-market election with respect to our ADSs.

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

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

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

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

F. DIVIDENDS AND PAYING AGENTS

Not applicable.

G. STATEMENT BY EXPERTS

Not applicable.

H. DOCUMENTS ON DISPLAY

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

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

I. SUBSIDIARY INFORMATION

Not applicable.

ITEM 11. QUALITATIVE AND QUANTITATIVE DISCLOSURES ABOUT MARKET RISK

Our primary market risk exposures are to fluctuations in oil and gas prices, exchange rates and interest rates. Please also refer to Note 40 to the consolidated financial statements included elsewhere in this annual report for a detailed discussion of other market risks that we have exposure to.

Commodity Price Risk

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

As of December 31, 2022, we had certain commodity contracts of crude oil, refined oil products and chemical products designated as qualified cash flow hedges and economic hedges. As of December 31, 2022, the fair value of such derivative hedging financial instruments is derivative financial assets of RMB19,328 million (2021: RMB18,359 million) and derivative financial liabilities of RMB7,235 million (2021: RMB3,214 million).

As of December 31, 2022, it is estimated that a general increase/decrease of USD10 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 increase/decrease our net income for the year by approximately RMB5,104 million (2021: decrease/increase RMB2,996 million), and increase/decrease our other comprehensive income by approximately RMB192 million (2021: decrease/increase RMB1,160 million). This sensitivity analysis has been determined assuming that the change in prices had occurred at the balance sheet date and the change was applied to our derivative financial instruments at that date with exposure to commodity price risk. The analysis is performed on the same basis for 2021.

Foreign Exchange Rate Risk

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

The following presents various market risk information regarding market-sensitive financial instruments that we held or issued as of December 31, 2021 and 2022. We conduct our business primarily in Renminbi, which is also our functional and reporting currency.

The following tables provide information regarding instruments that are sensitive to foreign exchange rates as of December 31, 2021 and 2022. For debt obligations, the table presents cash flows and related weighted average rates by expected maturity dates.

	As of December 31, 2022							
			Expected Maturity Date					
	2023	2024	2025	2026	2027	Thereafter	Total carrying amount	Fair Value
	(RMB equivalent in millions, except interest rate)							
Assets								
Cash and cash equivalents								
In US Dollar	49,565	—	—	—	—	—	49,565	49,565
In HK Dollar	2,012	—	—	—	—	—	2,012	2,012
In Japanese Yen	19	—	—	—	—	—	19	19
In Euro	420	—	—	—	—	—	420	420
Others	1,304	—	—	—	—	—	1,304	1,304
Time deposits with financial institutions								
In US Dollar	7,017	—	—	—	—	—	7,017	7,017
Liabilities								
Debts in US Dollar								
Fixed rate	8,727	1	1	1	1	3,507	12,238	11,172
Average interest rate	3.26 %	3.94 %	3.94 %	3.94 %	3.94 %	3.94 %	—	—
Variable rate	1,021	—	—	—	—	—	1,021	1,021
Average interest rate ⁽¹⁾	5.12 %	—	—	—	—	—	—	—
Debts in HK Dollar								
Fixed rate	—	—	—	—	—	—	—	—
Average interest rate	—	—	—	—	—	—	—	—
Variable rate	—	—	—	—	—	—	—	—
Average interest rate ⁽¹⁾	—	—	—	—	—	—	—	—
Debts in Euro								
Fixed rate	—	—	—	—	—	—	—	—
Average interest rate	—	—	—	—	—	—	—	—
Variable rate	35	—	—	—	—	—	35	35
Average interest rate ⁽¹⁾	2.93 %	—	—	—	—	—	—	—

(1) The average interest rates for variable rate debts are calculated based on the rates reported as of December 31, 2022.

	As of December 31, 2021							
	Expected Maturity Date						Total carrying amount	Fair Value
	2022	2023	2024	2025	2026	Thereafter		
	(RMB equivalent in millions, except interest rate)							
Assets								
Cash and cash equivalents								
In US Dollar	46,087	—	—	—	—	—	46,087	46,087
In HK Dollar	4,006	—	—	—	—	—	4,006	4,006
In Japanese Yen	37	—	—	—	—	—	37	37
In Euro	502	—	—	—	—	—	502	502
Others	200	—	—	—	—	—	200	200
Time deposits with financial institutions								
In US Dollar	11,103	—	—	—	—	—	11,103	11,103
Liabilities								
Debts in US Dollar								
Fixed rate	583	7,962	1	1	1	4,382	12,930	11,603
Average interest rate	3.01 %	3.11 %	3.31 %	1.53 %	3.32 %	3.32 %	—	—
Variable rate	362	—	—	—	—	—	362	362
Average interest rate ⁽¹⁾	0.57 %	—	—	—	—	—	—	—
Debts in HK Dollar								
Fixed rate	—	—	—	—	—	—	—	—
Average interest rate	—	—	—	—	—	—	—	—
Variable rate	—	—	—	—	—	—	—	—
Average interest rate ⁽¹⁾	—	—	—	—	—	—	—	—
Debts in Euro								
Fixed rate	152	—	—	—	—	—	152	152
Average interest rate	1.00 %	—	—	—	—	—	—	—
Variable rate	—	—	—	—	—	—	—	—
Average interest rate ⁽¹⁾	—	—	—	—	—	—	—	—

(1) The average interest rates for variable rate debts are calculated based on the rates reported as of December 31, 2021.

Interest Rate Risk

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

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

The following tables present principal cash flows and related weighted average interest rates by expected maturity dates of our interest rate sensitive financial instruments as of December 31, 2021 and 2022.

	As of December 31, 2022							
	Expected Maturity Date						Total carrying	Fair
	2023	2024	2025	2026	2027	Thereafter	amount	Value
	(RMB equivalent in millions, except interest rate)							
Assets								
Cash and cash equivalents								
In RMB	40,118	—	—	—	—	—	40,118	40,118
In US Dollar	49,565	—	—	—	—	—	49,565	49,565
In HK Dollar	2,012	—	—	—	—	—	2,012	2,012
In Japanese Yen	19	—	—	—	—	—	19	19
In Euro	420	—	—	—	—	—	420	420
Others	1,304	—	—	—	—	—	1,304	1,304
Time deposits with financial institutions								
In RMB	41,856	—	—	—	—	—	41,856	41,856
In US Dollar	7,017	—	—	—	—	—	7,017	7,017
Liabilities								
Debts in RMB								
Fixed rate	40,009	11,976	35,267	6,003	307	517	94,079	80,953
Average interest rate	2.48 %	2.44 %	2.48 %	3.05 %	1.68 %	0.36 %		
Variable rate	16,541	3,421	29,629	3,330	3,839	10,159	66,919	66,919
Average interest rate ⁽¹⁾	2.52 %	2.53 %	2.55 %	3.13 %	3.16 %	3.89 %		
Debts in US Dollar								
Fixed rate	8,727	1	1	1	1	3,507	12,238	11,172
Average interest rate	3.26 %	3.94 %	3.94 %	3.94 %	3.94 %	3.94 %		
Variable rate	1,021	—	—	—	—	—	1,021	1,021
Average interest rate ⁽¹⁾	5.12 %	—	—	—	—	—		
Debts in HK Dollar								
Fixed rate	—	—	—	—	—	—	—	—
Average interest rate	—	—	—	—	—	—	—	—
Variable rate	—	—	—	—	—	—	—	—
Average interest rate ⁽¹⁾	—	—	—	—	—	—	—	—
Debts in Euro								
Fixed rate	—	—	—	—	—	—	—	—
Average interest rate	—	—	—	—	—	—	—	—
Variable rate	35	—	—	—	—	—	35	35
Average interest rate ⁽¹⁾	2.93 %	—	—	—	—	—	—	—

(1) The average interest rates for variable rate debts are calculated based on the rates reported as of December 31, 2022.

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

	As of December 31, 2021							
	Expected Maturity Date						Total carrying amount	Fair Value
	2022	2023	2024	2025	2026	Thereafter		
	(RMB equivalent in millions, except interest rate)							
Assets								
Cash and cash equivalents								
In RMB	57,757	—	—	—	—	—	57,757	57,757
In US Dollar	46,087	—	—	—	—	—	46,087	46,087
In HK Dollar	4,006	—	—	—	—	—	4,006	4,006
In Japanese Yen	37	—	—	—	—	—	37	37
In Euro	502	—	—	—	—	—	502	502
Others	200	—	—	—	—	—	200	200
Time deposits with financial institutions								
In RMB	102,296	—	—	—	—	—	102,296	102,296
In US Dollar	11,103	—	—	—	—	—	11,103	11,103
Liabilities								
Debts in RMB								
Fixed rate	25,447	30,233	8,815	12,207	5,991	523	83,216	76,899
Average interest rate	2.79 %	2.54 %	2.56 %	2.28 %	3.02 %	0.59 %		
Variable rate	11,581	8,126	9,967	858	326	2,595	33,453	33,453
Average interest rate ⁽¹⁾	2.68 %	2.60 %	2.56 %	3.84 %	3.74 %	3.72 %		
Debts in US Dollar								
Fixed rate	583	7,962	1	1	1	4,382	12,930	11,603
Average interest rate	3.01 %	3.11 %	3.31 %	1.53 %	3.32 %	3.32 %		
Variable rate	363	—	—	—	—	—	363	363
Average interest rate ⁽¹⁾	0.57 %	—	—	—	—	—	—	—
Debts in HK Dollar								
Fixed rate	—	—	—	—	—	—	—	—
Average interest rate	—	—	—	—	—	—	—	—
Variable rate	—	—	—	—	—	—	—	—
Average interest rate ⁽¹⁾	—	—	—	—	—	—	—	—
Debts in Euro								
Fixed rate	153	—	—	—	—	—	153	153
Average interest rate	1.00 %	—	—	—	—	—	—	—
Variable rate	—	—	—	—	—	—	—	—
Average interest rate ⁽¹⁾	—	—	—	—	—	—	—	—

(1) The average interest rates for variable rate debts are calculated based on the rates reported as of December 31, 2021.

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

ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

A. DEBT SECURITIES

Not applicable.

B. WARRANTS AND RIGHTS

Not applicable.

C. OTHER SECURITIES

Not applicable.

D. AMERICAN DEPOSITARY SHARES

Depository Fees and Charges

Our ADR program terminated on December 5, 2022. ADS holders have the right to return their ADSs to Citibank, N.A. in accordance with the terms and conditions of the Deposit Agreement before June 5, 2023 (U.S. Eastern Time) to Citibank, in exchange for the H shares of the Company. Prior to the termination of our ADR program, Citibank directly charged investors who surrendered ADRs the ADS cancellation fees set forth in the table below. Holders of ADS shall pay a fee for returning the ADSs to Citibank. For more information on the termination of the ADR Program, please refer to the “Frequently Asked Questions about Sinopec’s American Depositary Receipt Program” published on the company’s website (<http://www.sinopec.com/listco/en/Resource/Pdf/2022110201.pdf>). Information provided in or accessible through our website does not form part of, and is not incorporated into, this annual report.

Pursuant to the terms of the Deposit Agreement, an ADS holder may have to pay the following services fees to the depository:

Services	Fees
Cancellation of ADSs	US\$5.00 (or less) per 100 ADSs (or portion of 100 ADSs) canceled
Distribution of cash dividends or other cash distributions	US\$2.00 (or less) per 100 ADSs (or portion of 100 ADSs) held

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

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

Depository Payments for the Year 2022

In 2022, Citibank, N.A., the depository for our ADR program, provided reimbursement net of applicable withholding taxes for our expenses related to the listing and investor’ relations activities as follows:

- reimbursement of application fees: US\$97,994.25
- reimbursement of data infrastructure fees: US\$7,096.67
- reimbursement of proxy procedure fees: US\$44,758.25
- reimbursement of investor relations expenses (including expenses related to non-deal road show, investor meeting and investor relations agency): US\$36,219.91
- the accounting committee and accounting standard committee of public company: US\$69,971.39
- Total: US\$256,040.47

In connection with the termination of our ADR program, we have paid Citibank, N.A. ADR program termination fees in the amount of US\$1,293,028 in January 2023.

ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

None.

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

A. MATERIAL MODIFICATIONS TO THE RIGHTS TO SECURITIES HOLDERS

None.

B. USE OF PROCEEDS

Not applicable.

ITEM 15. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure the information required to be disclosed in reports filed by us under the U.S. Securities Exchange Act of 1934 (Exchange Act), as amended, is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and that such information is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate, to allow for timely decisions regarding required disclosure. Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of December 31, 2022 (Evaluation Date), the end of the fiscal year covered by this annual report. Based on this evaluation, our principal executive officer and principal financial officer have concluded that, as of the Evaluation Date, our disclosure controls and procedures were effective.

Management's Annual Report on Internal Control over Financial Reporting

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

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

Our management assessed the effectiveness of our internal control over financial reporting based upon the criteria established in *Internal Control — Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission as of December 31, 2022. Based on that evaluation, our management has concluded that our internal control over financial reporting was effective as of December 31, 2022 based on these criteria.

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

Report of Independent Registered Public Accounting Firm

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

Opinion on Internal Control Over Financial Reporting

We have audited China Petroleum & Chemical Corporation and subsidiaries' (the "Company") 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. 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 Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated statements of financial position of the Company as at December 31, 2022 and 2021, the related consolidated income statements, consolidated statements of comprehensive income, cash flows and changes in equity for the years then ended, and the related notes (collectively, the consolidated financial statements), and our report dated April 28, 2023 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible 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. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 effective internal control over financial reporting was maintained in all material respects. 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

/s/ KPMG Huazhen LLP
Beijing, China
April 28, 2023

Changes in Internal Control over Financial Reporting

During the year ended December 31, 2022, there have been no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 16. RESERVED

[Reserved]

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

The board of directors has determined that Mr. Ng, Kar Ling Johnny qualifies as an audit committee financial expert in accordance with the terms of Item 16A. of Form 20-F. Mr. Ng was appointed as an independent non-executive director and a manager of the audit committee of the eighth board of our company in 2021. For Mr. Ng's biographical information, see "Item 6 Directors, Senior Management and Employees—A. Directors, Supervisors and Senior Management."

ITEM 16B. CODE OF ETHICS

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

ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

KPMG Huazhen LLP served as our independent accountant for the fiscal year of 2021 and 2022.

The following table presents the aggregate fees paid by us (not including our subsidiaries) for professional audit services, tax and other services rendered by KPMG Huazhen LLP to us for the year ended December 31, 2021.

	<u>Audit Fees</u>	<u>Audit-Related Fees</u>	<u>Tax Fees</u>	<u>Other Fees</u>
2021	RMB59.10 million	—	—	RMB8.11 million

The following table presents the aggregate fees paid by us (not including our subsidiaries) for professional audit services, tax and other services rendered by KPMG Huazhen LLP to us for the year ended December 31, 2022.

	<u>Audit Fees</u>	<u>Audit-Related Fees</u>	<u>Tax Fees</u>	<u>Other Fees</u>
2022	RMB66.39 million	—	—	RMB2.98 million

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

ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES NOT APPLICABLE.

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

	Total Number of Shares Purchased ⁽¹⁾	Average Price Paid Per Share (RMB) ⁽²⁾	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs
September 21, 2022 to September 27, 2022	54,414,000	3.099	—	—
October 31, 2022	63,000,000	2.803	—	—
November 1, 2022 to November 30, 2022	535,822,000	3.040	—	—
December 1, 2022 to December 19, 2022	79,266,000	3.260	—	—

Note:

- (1) On May 18, 2022, the Company's 2021 Annual General Meeting of Shareholders and the 2022 First H Shareholders' Class Meeting reviewed and approved the proposal to grant to the board of director a general mandate to buy back A shares and/or H shares of the Company, authorizing the board of directors (or a director authorized by the board of directors) to repurchase no more than 10% of the Company's issued and outstanding H shares, or 2,551,343,860 H shares, and to formulate and implement a repurchase plan. The number of shares repurchased in the table above represents repurchases in the open market conducted on the Hong Kong Stock Exchange pursuant to the aforementioned general mandate (rather than any public repurchase program).
- (2) Based on RMB0.89327 to HK\$1.00, the average of mid-point exchange rates of Renminbi as published by the PRC State Administration of Foreign Exchange (SAFE) on December 30, 2022.

ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT

None.

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

Not applicable.

ITEM 16H. MINE SAFETY DISCLOSURE

Not applicable.

ITEM 16L. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

In May 2022, we were conclusively listed by the SEC as a Commission-Identified Issuer under the HFCAA following the filing of our annual report on Form 20-F for the fiscal year ended December 31, 2021. Our auditor, a registered public accounting firm headquartered in China which the PCAOB was unable to inspect or investigate completely in 2021 because of a position taken by an authority in China, issued the audit report for us for the fiscal year ended December 31, 2021. On December 15, 2022, the PCAOB issued a report that vacated its December 16, 2021 determination and removed mainland China and Hong Kong from the list of jurisdictions where it is unable to inspect or investigate completely registered public accounting firms. For this reason, we do not expect to be identified as a Commission-Identified Issuer under the HFCAA after we file this annual report on Form 20-F.

Our controlling shareholder is Sinopec Group Company, which is in turn controlled by the State-owned Assets Supervision and Administration Commission of the State Council of China. For more details of the Sinopec Group Company, see “Item 4 Information on the Company – C. Organizational Structure.”

Certain directors and supervisors of the Company are officials of the Communist Party of China, see “Item 6A Directors, Supervisors and Senior Management” for more details.

Our currently effective articles of association (or equivalent organizing document) do not contain any charter of the Chinese Communist Party. Our currently effective articles of association contain provisions relating to committees of the Communist Party of China. For more details, please refer to our articles of association incorporated into this annual report by reference.

ITEM 17. FINANCIAL STATEMENTS

Not applicable.

ITEM 18. FINANCIAL STATEMENTS

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

ITEM 19. EXHIBITS

- 1 [Articles of Association of the Registrant, amended and adopted by the shareholders' meeting on October 20, 2021, incorporated by reference to Exhibit 1 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 28, 2022.](#)
- 2.1 [Description of rights of each class of securities registered under Section 12 of the Securities Exchange Act of 1934, incorporated by reference to Exhibit 2.1 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 10, 2020 \(File Number: 001-15138\).](#)
- 4.1 [Forms of Director Service Contracts adopted by the Company on May 11, 2012 \(English translation\), incorporated by reference to Exhibit 4.1 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 11, 2013 \(File Number: 001-15138\).](#)
- 4.2 [Forms of Supervisor Service Contracts adopted by the Company on May 11, 2012 \(English translation\), incorporated by reference to Exhibit 4.2 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 11, 2013 \(File Number: 001-15138\).](#)
- 4.3 Agreement for Mutual Provision of Products and Ancillary Services between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 (including English translation), incorporated by reference to Exhibit 10.3 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
- 4.4 Agreement for Provision of Cultural, Educational, Hygiene and Community Services between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 (including English translation), incorporated by reference to Exhibit 10.4 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
- 4.5 Trademark License Agreement between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 (including English translation), incorporated by reference to Exhibit 10.6 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
- 4.6 Patents and Proprietary Technology License Contract between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 (including English translation), incorporated by reference to Exhibit 10.7 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
- 4.7 Computer Software License Contract between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 (including English translation), incorporated by reference to Exhibit 10.8 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
- 4.8 Land Use Rights Leasing Contract between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 (including English translation), incorporated by reference to Exhibit 10.10 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
- 4.9 Property Leasing Contract between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 (including English translation), incorporated by reference to Exhibit 10.11 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).
- 4.10 Loan Transfer and Adjustment Contract between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 16, 2000 (including English translation), incorporated by reference to Exhibit 10.18 to our Registration Statement on Form F-1 filed with the Securities and Exchange Commission on October 10, 2000 (File Number: 333-12502).

- 4.11 [Agreement on Adjustment to Related Party Transactions between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 11, 2001 \(English translation\), incorporated by reference to Exhibit 4.15 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 13, 2007 \(File Number: 001-15138\).](#)
- 4.12 [Land Use Right Leasing Agreement between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 22, 2003 \(English translation\), incorporated by reference to Exhibit 4.16 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 13, 2007 \(File Number: 001-15138\).](#)
- 4.13 [2004 Agreement on Adjustment to Related Party Transactions between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated October 31, 2004 \(English translation\), incorporated by reference to Exhibit 4.17 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 13, 2007 \(File Number: 001-15138\).](#)
- 4.14 [Memorandum on Adjustment of Rent of Land Use Rights between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated March 31, 2006 \(English translation\), incorporated by reference to Exhibit 4.18 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 13, 2007 \(File Number: 001-15138\).](#)
- 4.14.1 [Memorandum on Adjustment of Rent of Land Use Rights between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 22, 2008 \(English Translation\), incorporated by reference to Exhibit 4.20 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on May 20, 2009 \(File Number: 001-15138\).](#)
- 4.14.2 [Land Use Rights Leasing Agreement Third Amendment Memo between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 24, 2012 \(English Translation\), incorporated by reference to Exhibit 4.20.1 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 11, 2013 \(File Number: 001-15138\).](#)
- 4.15 [Supplemental Agreement on Related Party Transactions between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated March 31, 2006 \(English translation\), incorporated by reference to Exhibit 4.19 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 13, 2007 \(File Number: 001-15138\).](#)
- 4.15.1 [Continuing Connected Transactions Second Supplemental Agreement between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 21, 2009 \(English translation\), incorporated by reference to Exhibit 4.21 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 30, 2010 \(File Number: 001-15138\).](#)
- 4.15.2 [Continuing Connected Transactions Third Supplemental Agreement between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 24, 2012 \(English translation\), incorporated by reference to Exhibit 4.19.2 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 11, 2013 \(File Number: 001-15138\).](#)
- 4.15.3 [Continuing Connected Transactions Fourth Supplemental Agreement Between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 26, 2015 \(English translation\), incorporated by reference to Exhibit 4.22 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 20, 2016 \(File Number: 001-15138\).](#)
- 4.15.4 [Continuing Connected Transactions Fifth Supplemental Agreement Between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 24, 2018 \(English translation\), incorporated by reference to Exhibit 4.15.4 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 29, 2019](#)
- 4.15.5 [Continuing Connected Transaction Sixth Supplemental Agreement Between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated August 27, 2021 \(English translation\), incorporated by reference to Exhibit 4.15.5 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 28, 2022](#)
- 4.16 [Non-Compete Agreement Between China Petrochemical Corporation and China Petroleum & Chemical Corporation dated June 3, 2000 and its related Undertakings \(English translation\), incorporated by reference to Exhibit 4.21 to our Annual Report on Form 20-F/A filed with the Securities and Exchange Commission on September 26, 2013 \(File Number: 001-15138\).](#)

[Table of Contents](#)

4.16.1	Undertakings from China Petrochemical Corporation Regarding Further Avoiding Competition with China Petroleum & Chemical Corporation dated April 28, 2014 (English translation), incorporated by reference to Exhibit 4.21.1 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 10, 2015 (File Number: 001-15138).
4.17	Agreement on Additional Issuance of Equity to Purchase Relevant Oil and Gas Pipeline Assets, dated July 23, 2020, between China Oil & Gas Pipeline Network Corporation and China Petroleum & Chemical Corporation (English Translation), incorporated by reference to Exhibit 4.17 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 28, 2022 (File Number: 001-15138).
4.17.1	Agreement on Additional Issuance of Equity and Cash Payment to Purchase Relevant Oil and Gas Pipeline Assets, dated July 23, 2020, between China Oil & Gas Pipeline Network Corporation and Sinopec Natural Gas Limited Company (English Translation), incorporated by reference to Exhibit 4.17.1 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 28, 2022 (File Number: 001-15138).
4.17.2	Agreement on Cash Payment to Purchase Relevant Oil and Gas Pipeline Assets, dated July 23, 2020, between China Oil & Gas Pipeline Network Corporation and Sinopec Marketing Co., Limited (English Translation), incorporated by reference to Exhibit 4.17.2 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 28, 2022 (File Number: 001-15138).
4.17.3	Agreement on Cash Payment to Purchase 100% Equity in Sinopec Yu Ji Company, dated July 21, 2020, between China Oil & Gas Pipeline Network Corporation and Sinomart KTS Development Limited (English Translation), incorporated by reference to Exhibit 4.17.3 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 28, 2022 (File Number: 001-15138).
4.18	Framework Agreement regarding Production and Operation of Oil and Gas Pipeline Facilities, dated August 13, 2020, between China Petroleum & Chemical Corporation and China Oil & Gas Pipeline Network Corporation (English Translation), incorporated by reference to Exhibit 4.18 to our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 28, 2022 (File Number: 001-15138).
8.1*	A list of the Registrant's subsidiaries.
12.1*	Certification of Principal Executive Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as amended.
12.2*	Certification of Principal Executive Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as amended.
12.3*	Certification of Principal Financial Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as amended.
13**	Certification of CEO and CFO pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, and Rule 13a-14(b) under the Securities Exchange Act of 1934, as amended.
101.INS*	Inline XBRL Instance Document -this instance document does not appear in the Interactive Data File because its XBRL tags 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

104* Cover Page Interactive Data File (embedded within the Inline XBRL document)

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

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

SIGNATURE

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

China Petroleum & Chemical Corporation

By: /s/ Huang Wensheng

Name: Huang Wensheng

Title: Vice President and Secretary to the Board of Directors

Date: April 28, 2023

CHINA PETROLEUM & CHEMICAL CORPORATION
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

	<u>Page</u>
Report of independent registered public accounting firm – (KPMG Huazhen LLP, Beijing, China, Auditor Firm ID: 1186)	F-2
Report of independent registered public accounting firm – (PricewaterhouseCooper Zhong Tian LLP, Shanghai, China, Auditor Firm ID: 1424)	F-4
Consolidated income statements	F-5
Consolidated statements of comprehensive income	F-6
Consolidated statements of financial position	F-7
Consolidated statements of changes in equity	F-8
Consolidated statements of cash flows	F-11
Notes to consolidated financial statements	F-13

Report of Independent Registered Public Accounting Firm

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

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated statements of financial position of China Petroleum & Chemical Corporation and subsidiaries (the Company) as at December 31, 2022 and 2021, the related consolidated income statements, consolidated statements of comprehensive income, cash flows and changes in equity for the years then ended, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as at December 31, 2022 and 2021, and the results of its operations and its cash flows for the years then ended, in conformity with International Financial Reporting Standards as issued by International Accounting Standards Board.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as at December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated April 28, 2023 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

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 audits. We are a public accounting firm registered with the 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 audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits 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. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

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: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a 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.

Report of Independent Registered Public Accounting Firm (CONTINUED)

Assessment of impairment of property, plant and equipment relating to oil and gas producing activities

The critical audit matter

As discussed in notes 2(g), 2(n), 8, 18 and 41 to the consolidated financial statements, the Company reported property, plant and equipment of Renminbi (“RMB”) 630,700 million as at December 31, 2022, a portion of which related to oil and gas producing activities. The Company reported impairment losses of RMB 2,891 million for the property, plant and equipment relating to oil and gas producing activities for the year ended December 31, 2022.

The Company groups property, plant and equipment relating to oil and gas producing activities into cash-generating units (“CGUs”) for impairment assessment. The Company compares the carrying amount of individual CGU with its value in use, using a discounted cash flow forecast, which was prepared based on the future production profiles included in the oil and gas reserves reports, to determine the impairment loss to be recognized.

We identified assessment of impairment of property, plant and equipment relating to oil and gas producing activities as a critical audit matter. The value in use amounts of these CGUs are sensitive to the changes to future selling prices and production costs for crude oil and natural gas, future production profiles, and discount rates. Therefore a higher degree of subjective auditor judgment was required to evaluate the Company’s impairment assessment of property, plant and equipment relating to oil and gas producing activities.

How the matter was addressed in our audit

The following are the primary procedures we performed to address this critical audit matter:

- we evaluated the design and tested the operating effectiveness of certain internal controls related to the process for impairment assessment of property, plant and equipment relating to oil and gas producing activities;
- we assessed the competence, capabilities and objectivity of the Company’s reserves specialists and evaluated the methodology adopted by them in estimating the oil and gas reserves against the recognized industry standards;
- we compared future selling prices for crude oil and natural gas used in the discounted cash flow forecasts with the Company’s business plans and forecasts by external analysts;
- we compared future production costs and future production profiles used in the discounted cash flow forecasts with oil and gas reserves reports issued by the reserves specialists; and
- we involved valuation professionals with specialized skills and knowledge, who assisted in assessing the discount rates applied in the discounted cash flow forecasts against a discount rate range that was independently developed using publicly available market data for comparable companies in the same industry.

/s/ KPMG Huazhen LLP

Beijing, China
April 28, 2023

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

Report of Independent Registered Public Accounting Firm

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

Opinion on the Financial Statements

We have audited the consolidated income statement, consolidated statement of comprehensive income, of changes in equity and of cash flows of China Petroleum & Chemical Corporation and its subsidiaries (the “Company”) for the year ended December 31, 2020, including the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the results of operations and cash flows of the Company for the year ended December 31, 2020 in conformity with International Financial Reporting Standards as issued by the 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 the Company's 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 of these consolidated financial statements 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/ PricewaterhouseCoopers Zhong Tian LLP

Shanghai, the People's Republic of China

March 26, 2021, except for the effects of the business combination under common control discussed in Note 35 to the consolidated financial statements, as to which the date is April 27, 2022

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

CHINA PETROLEUM & CHEMICAL CORPORATION

CONSOLIDATED INCOME STATEMENTS

FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 AND 2022

(Amounts in million, except per share data)

	Notes	Years ended December 31,		
		2020 RMB	2021 RMB	2022 RMB
Revenue				
Revenue from primary business	3	2,048,654	2,679,500	3,257,356
Other operating revenues	4	56,070	61,384	60,812
		2,104,724	2,740,884	3,318,168
Operating expenses				
Purchased crude oil, products and operating supplies and expenses		(1,589,821)	(2,076,665)	(2,684,756)
Selling, general and administrative expenses	5	(53,668)	(54,978)	(55,809)
Depreciation, depletion and amortization		(107,461)	(115,680)	(109,906)
Exploration expenses, including dry holes		(9,716)	(12,382)	(10,591)
Personnel expenses	6	(87,525)	(103,492)	(103,585)
Taxes other than income tax	7	(235,018)	(259,032)	(263,991)
Impairment (losses)/reversals on trade and other receivables		(2,066)	(2,311)	1,084
Other operating income/(expenses), net	8	(5,780)	(21,716)	(14,779)
Total operating expenses		<u>(2,091,055)</u>	<u>(2,646,256)</u>	<u>(3,242,333)</u>
Operating income		<u>13,669</u>	<u>94,628</u>	<u>75,835</u>
Finance costs				
Interest expense	9	(15,198)	(15,018)	(16,769)
Interest income		4,803	5,732	6,266
Foreign currency exchange gains, net		885	276	529
Net finance costs		<u>(9,510)</u>	<u>(9,010)</u>	<u>(9,974)</u>
Investment income	10	37,744	298	14,060
Share of profits less losses from associates and joint ventures	22,23	6,712	23,253	14,479
Earnings before income tax		<u>48,615</u>	<u>109,169</u>	<u>94,400</u>
Income tax expense	11	(6,344)	(23,318)	(18,757)
Net income		<u>42,271</u>	<u>85,851</u>	<u>75,643</u>
Attributable to:				
Owners of the Company		33,443	71,975	66,153
Non-controlling interests		8,828	13,876	9,490
Net income		<u>42,271</u>	<u>85,851</u>	<u>75,643</u>
Earnings per share:				
Basic	13	<u>0.28</u>	<u>0.59</u>	<u>0.55</u>
Diluted	13	<u>0.28</u>	<u>0.59</u>	<u>0.55</u>

See accompanying notes to consolidated financial statements.

CHINA PETROLEUM & CHEMICAL CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 AND 2022
(Amounts in million)

	Notes	Years ended December 31,		
		2020 RMB	2021 RMB	2022 RMB
Net income		<u>42,271</u>	<u>85,851</u>	<u>75,643</u>
Other comprehensive income:	12			
<i>Items that may not be reclassified subsequently to profit or loss</i>				
Equity investments at fair value through other comprehensive income		(22)	(4)	(67)
Total items that may not be reclassified subsequently to profit or loss		<u>(22)</u>	<u>(4)</u>	<u>(67)</u>
<i>Items that may be reclassified subsequently to profit or loss</i>				
Cost of hedging reserve		162	(220)	149
Share of other comprehensive income of associates and joint ventures		(2,441)	441	2,856
Cash flow hedges		7,073	19,018	11,637
Foreign currency translation differences		(4,457)	(1,728)	7,254
Total items that may be reclassified subsequently to profit or loss		<u>337</u>	<u>17,511</u>	<u>21,896</u>
Total other comprehensive income		<u>315</u>	<u>17,507</u>	<u>21,829</u>
Total comprehensive income for the year		<u><u>42,586</u></u>	<u><u>103,358</u></u>	<u><u>97,472</u></u>
Attributable to:				
Owners of the Company		34,837	89,549	85,279
Non-controlling interests		7,749	13,809	12,193
Total comprehensive income for the year		<u><u>42,586</u></u>	<u><u>103,358</u></u>	<u><u>97,472</u></u>

See accompanying notes to consolidated financial statements.

CHINA PETROLEUM & CHEMICAL CORPORATION
CONSOLIDATED STATEMENTS OF FINANCIAL POSITION
AS AT DECEMBER 31, 2021 AND 2022
(Amounts in million)

	Notes	December 31,	
		2021	2022
		RMB	RMB
ASSETS			
Current assets			
Cash and cash equivalents		108,590	93,438
Time deposits with financial institutions		113,399	51,614
Financial assets at fair value through profit or loss		—	2
Derivative financial assets	14	18,371	19,335
Trade accounts receivable	15	34,861	46,364
Financial assets at fair value through other comprehensive income	24	5,939	3,507
Inventories	16	207,433	244,241
Prepaid expenses and other current assets	17	69,431	64,639
Total current assets		558,024	523,140
Non-current assets			
Property, plant and equipment, net	18	598,925	630,700
Construction in progress	19	155,939	196,045
Right-of-use assets	20	268,408	264,856
Goodwill	21	8,594	6,464
Interest in associates	22	148,729	159,150
Interest in joint ventures	23	60,450	74,791
Financial assets at fair value through other comprehensive income	24	767	730
Deferred tax assets	25	19,389	19,952
Long-term prepayments and other assets	26	70,030	72,812
Total non-current assets		1,331,231	1,425,500
Total assets		1,889,255	1,948,640
LIABILITIES AND EQUITY			
Current liabilities			
Short-term debts	27	35,252	59,037
Loans from Sinopec Group Company and fellow subsidiaries	27	2,873	7,292
Lease liabilities	28	15,173	16,004
Derivative financial liabilities	14	3,223	7,313
Trade accounts payable and bills payable	29	215,640	269,424
Contract liabilities	30	124,622	125,444
Other payables	31	239,688	178,146
Income tax payable		4,809	4,725
Total current liabilities		641,280	667,385
Non-current liabilities			
Long-term debts	27	78,300	85,706
Loans from Sinopec Group Company and fellow subsidiaries	27	13,690	22,255
Lease liabilities	28	170,233	166,407
Deferred tax liabilities	25	7,910	8,079
Provisions	32	43,525	47,587
Other long-term liabilities		19,243	14,983
Total non-current liabilities		332,901	345,017
Total liabilities		974,181	1,012,402
Equity			
Share capital	33	121,071	119,896
Reserves	43	653,111	664,810
Total equity attributable to owners of the Company		774,182	784,706
Non-controlling interests		140,892	151,532
Total equity		915,074	936,238
Total liabilities and equity		1,889,255	1,948,640

See accompanying notes to consolidated financial statements.

CHINA PETROLEUM & CHEMICAL CORPORATION

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 AND 2022
(Amounts in million)

	Share capital RMB	Capital reserve RMB	Share premium RMB	Statutory surplus reserve RMB	Discretionary surplus reserve RMB	Other reserves RMB	Retained earnings RMB	Total equity attributable to owners of the Company RMB	Non- controlling interests RMB	Total equity RMB
Balance as at January 1, 2020	121,071	34,503	55,850	90,423	117,000	1,941	322,931	743,719	138,359	882,078
Net income	—	—	—	—	—	—	33,443	33,443	8,828	42,271
Other comprehensive income (Note 12)	—	—	—	—	—	1,406	(12)	1,394	(1,079)	315
Total comprehensive income for the year	—	—	—	—	—	1,406	33,431	34,837	7,749	42,586
Amounts transferred to initial carrying amount of hedged items	—	—	—	—	—	(47)	—	(47)	48	1
Transactions with owners, recorded directly in equity:										
Contributions by and distributions to owners:										
Final dividend for 2019	—	—	—	—	—	—	(23,004)	(23,004)	—	(23,004)
Interim dividend for 2020	—	—	—	—	—	—	(8,475)	(8,475)	—	(8,475)
Appropriation	—	—	—	1,857	—	—	(1,857)	—	—	—
Distributions to non-controlling interests	—	—	—	—	—	—	—	—	(6,726)	(6,726)
Contributions to subsidiaries from non-controlling interests	—	—	—	—	—	—	—	—	3,325	3,325
Distribution to SAMC in the Acquisition of Baling Branch of SAMC	—	(972)	—	—	—	—	—	(972)	972	—
Total contributions by and distributions to owners	—	(972)	—	1,857	—	—	(33,336)	(32,451)	(2,429)	(34,880)
Transaction with non-controlling interests	—	(138)	—	—	—	—	—	(138)	13	(125)
Total transactions with owners	—	(1,110)	—	1,857	—	—	(33,336)	(32,589)	(2,416)	(35,005)
Others	—	870	—	—	—	200	(665)	405	(2,363)	(1,958)
Balance as at December 31, 2020	121,071	34,263	55,850	92,280	117,000	3,500	322,361	746,325	141,377	887,702

See accompanying notes to consolidated financial statements.

CHINA PETROLEUM & CHEMICAL CORPORATION

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY (CONTINUED)
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 AND 2022
(Amounts in million)

	Share capital RMB	Capital reserve RMB	Share premium RMB	Statutory surplus reserve RMB	Discretionary surplus reserve RMB	Other reserves RMB	Retained earnings RMB	Total equity attributable to owners of the Company RMB	Non- controlling interests RMB	Total equity RMB
Balance as at January 1, 2021	121,071	34,263	55,850	92,280	117,000	3,500	322,361	746,325	141,377	887,702
Net income	—	—	—	—	—	—	71,975	71,975	13,876	85,851
Other comprehensive income (Note 12)	—	—	—	—	—	17,574	—	17,574	(67)	17,507
Total comprehensive income for the year	—	—	—	—	—	17,574	71,975	89,549	13,809	103,358
Amounts transferred to initial carrying amount of hedged items	—	—	—	—	—	(19,302)	—	(19,302)	(648)	(19,950)
Transactions with owners, recorded directly in equity:										
Contributions by and distributions to owners:										
Final dividend for 2020	—	—	—	—	—	—	(15,739)	(15,739)	—	(15,739)
Interim dividend for 2021	—	—	—	—	—	—	(19,371)	(19,371)	—	(19,371)
Appropriation (Note 43(c))	—	—	—	3,944	—	—	(3,944)	—	—	—
Distributions to non-controlling interests	—	—	—	—	—	—	—	—	(8,982)	(8,982)
Contributions to subsidiaries from non-controlling interests	—	—	—	—	—	—	—	—	1,973	1,973
Distribution to sellers in the business combination of entities under common control (Note 35)	—	(6,124)	—	—	—	—	—	(6,124)	—	(6,124)
Total contributions by and distributions to owners	—	(6,124)	—	3,944	—	—	(39,054)	(41,234)	(7,009)	(48,243)
Transaction with non-controlling interests	—	(1,396)	—	—	—	—	—	(1,396)	(6,796)	(8,192)
Total transactions with owners	—	(7,520)	—	3,944	—	—	(39,054)	(42,630)	(13,805)	(56,435)
Others	—	319	—	—	—	723	(802)	240	159	399
Balance as at December 31, 2021	121,071	27,062	55,850	96,224	117,000	2,495	354,480	774,182	140,892	915,074

See accompanying notes to consolidated financial statements.

CHINA PETROLEUM & CHEMICAL CORPORATION

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY (CONTINUED)

FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 AND 2022

(Amounts in million)

	Share capital RMB	Capital reserve RMB	Share premium RMB	Statutory surplus reserve RMB	Discretionary surplus reserve RMB	Other reserves RMB	Retained earnings RMB	Total equity attributable to owners of the Company RMB	Non- controlling interests RMB	Total equity RMB
Balance as at January 1, 2022	121,071	27,062	55,850	96,224	117,000	2,495	354,480	774,182	140,892	915,074
Net income	—	—	—	—	—	—	66,153	66,153	9,490	75,643
Other comprehensive income (Note 12)	—	—	—	—	—	19,126	—	19,126	2,703	21,829
Total comprehensive income for the year	—	—	—	—	—	19,126	66,153	85,279	12,193	97,472
Amounts transferred to initial carrying amount of hedged items	—	—	—	—	—	(15,363)	—	(15,363)	(439)	(15,802)
Transactions with owners, recorded directly in equity:										
Purchase of own shares (Note 33)	(1,175)	—	(3,004)	—	—	—	—	(4,179)	—	(4,179)
Contributions by and distributions to owners:										
Final dividend for 2021	—	—	—	—	—	—	(37,532)	(37,532)	—	(37,532)
Interim dividend for 2022	—	—	—	—	—	—	(19,371)	(19,371)	—	(19,371)
Appropriation (Note 43 (c))	—	—	—	4,610	—	—	(4,610)	—	—	—
Distributions to non-controlling interests	—	—	—	—	—	—	—	—	(6,691)	(6,691)
Contributions to subsidiaries from non-controlling interests	—	—	—	—	—	—	—	—	5,395	5,395
Other contributions	—	2,678	—	—	—	—	—	2,678	2,191	4,869
Total contributions by and distributions to owners	—	2,678	—	4,610	—	—	(61,513)	(54,225)	895	(53,330)
Transaction with non-controlling interests	—	—	—	—	—	—	—	—	(1,713)	(1,713)
Total transactions with owners	(1,175)	2,678	(3,004)	4,610	—	—	(61,513)	(58,404)	(818)	(59,222)
Other equity movements under the equity method	—	(1,009)	—	—	—	—	—	(1,009)	—	(1,009)
Others	—	22	—	—	—	149	(150)	21	(296)	(275)
Balance as at December 31, 2022	119,896	28,753	52,846	100,834	117,000	6,407	358,970	784,706	151,532	936,238

See accompanying notes to consolidated financial statements.

CHINA PETROLEUM & CHEMICAL CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS

FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 AND 2022

(Amounts in million)

	Note	Years ended December 31,		
		2020 RMB	2021 RMB	2022 RMB
Net cash generated from operating activities	(a)	168,520	225,174	116,269
Investing activities				
Capital expenditure		(118,321)	(127,965)	(153,744)
Exploratory wells expenditure		(13,315)	(16,956)	(18,783)
Purchase of investments		(6,040)	(4,935)	(9,234)
Payment for financial assets at fair value through profit or loss		(6,700)	(8,150)	(1,222)
Proceeds from settlement of financial assets at fair value through profit or loss		10,000	8,248	1,220
Payment for acquisition of subsidiary, net of cash acquired		(340)	(1,106)	(7,881)
Proceeds from disposal of investments		51,520	6,769	10,801
Proceeds from disposal of property, plant, equipment and other non-current assets		2,656	1,478	212
Increase in time deposits with maturities over three months		(84,689)	(50,844)	(31,670)
Decrease in time deposits with maturities over three months		54,950	34,298	93,455
Interest received		2,305	3,372	6,918
Investment and dividend income received		11,510	10,134	13,969
(Payments of)/proceeds from other investing activities		(6,186)	459	949
Net cash used in investing activities		(102,650)	(145,198)	(95,010)
Financing activities				
Proceeds from bank and other loans		558,680	356,459	564,417
Repayments of bank and other loans		(540,015)	(338,232)	(514,275)
Contributions to subsidiaries from non-controlling interests		4,219	1,001	3,946
Dividends paid by the Company		(31,479)	(35,110)	(56,903)
Distributions by subsidiaries to non-controlling interests		(4,821)	(8,068)	(5,249)
Interest paid		(7,512)	(5,849)	(9,679)
Payments made to acquire non-controlling interests		(1,121)	(8,198)	—
Cash payments to purchase own shares		—	—	(4,179)
Repayments of lease liabilities		(15,327)	(19,412)	(18,672)
Proceeds from other financing activities		700	133	989
Repayments of other financing activities		(834)	(666)	(94)
Net cash used in financing activities		(37,510)	(57,942)	(39,699)
Net increase/(decrease) in cash and cash equivalents		28,360	22,034	(18,440)
Cash and cash equivalents as at January 1		60,438	87,559	108,590
Effect of foreign currency exchange rate changes		(1,239)	(1,003)	3,288
Cash and cash equivalents as at December 31		87,559	108,590	93,438

See accompanying notes to consolidated financial statements.

CHINA PETROLEUM & CHEMICAL CORPORATION
NOTES TO CONSOLIDATED STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 AND 2022
(Amounts in million)

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

	Years ended December 31,		
	2020	2021	2022
	RMB	RMB	RMB
Operating activities			
Earnings before income tax	48,615	109,169	94,400
Adjustment for:			
Depreciation, depletion and amortization	107,461	115,680	109,906
Dry hole costs written off	5,928	7,702	6,416
Income from associates and joint ventures	(6,712)	(23,253)	(14,479)
Investment income	(37,744)	(298)	(14,060)
Interest income	(4,803)	(5,732)	(6,266)
Interest expense	15,198	15,018	16,769
Loss/(gain) on foreign currency exchange rate changes and derivative financial instruments	2,003	(3,723)	3,064
(Gain)/loss on disposal of property, plant, equipment and other non-current assets, net	(398)	3,062	722
Impairment losses on assets	26,087	13,165	12,009
Impairment losses/(reversals) on trade and other receivables	2,066	2,311	(1,084)
	157,701	233,101	207,397
Net changes from:			
Accounts receivable and other current assets	(17,610)	(8,177)	1,974
Inventories	22,407	(58,372)	(45,421)
Accounts payable and other current liabilities	15,169	82,408	(30,363)
	177,667	248,960	133,587
Income tax paid	(9,147)	(23,786)	(17,318)
Net cash generated from operating activities	<u>168,520</u>	<u>225,174</u>	<u>116,269</u>

See accompanying notes to consolidated financial statements.

1 PRINCIPAL ACTIVITIES, ORGANIZATION AND BASIS OF PREPARATION

Principal activities

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

Organization

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

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

Basis of preparation

The accompanying consolidated financial statements have been prepared in accordance with all applicable International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board (“IASB”). IFRS includes International Accounting Standards (“IAS”) and related interpretations (“IFRIC”). A summary of the significant accounting policies adopted by the Group are set out in Note 2. The accompanying financial statements were authorized for issue by the Board of Directors on April 28, 2023.

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

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

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

- Amendment to IAS 16, Property, Plant and Equipment: Proceeds before Intended Use
- Amendment to IAS 37, Provisions, contingent liabilities and contingent assets: Onerous contracts — cost of fulfilling a contract

None of these developments have had a material effect on how the Group’s results and financial position for the current or prior periods have been prepared or presented. The Group has not applied any new standard or interpretation that is not yet effective for the current accounting period.

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

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

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

Basis of preparation (Continued)

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

The preparation of the consolidated financial statements in accordance with IFRS requires management to make judgements, estimates and assumptions that affect the application of policies and reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the period. The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis of making the judgements about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results could differ from those estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

Key assumptions and estimation made by management in the application of IFRS that have significant effect on the consolidated financial statements and the major sources of estimation uncertainty are disclosed in Note 41.

2 SIGNIFICANT ACCOUNTING POLICIES

(a) Basis of consolidation

The consolidated financial statements comprise the Company and its subsidiaries, and interest in associates and joint ventures.

(i) Subsidiaries and non-controlling interests

Subsidiaries are those entities controlled by the Group. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. When assessing whether the Group has power, only substantive rights (held by the Group and other parties) are considered.

The financial statements of subsidiaries are included in the consolidated financial statements from the date that control effectively commences until the date that control effectively ceases.

Non-controlling interests at the date of statement of financial position, being the portion of the net assets of subsidiaries attributable to equity interests that are not owned by the Company, whether directly or indirectly through subsidiaries, are presented in the consolidated statements of financial position and consolidated statements of changes in equity within equity, separately from equity attributable to the owners of the Company. Non-controlling interests in the results of the Group are presented on the face of the consolidated income statements and the consolidated statements of comprehensive income as an allocation of the total profit or loss and total comprehensive income for the year between non-controlling interests and the owners of the Company.

Changes in the Group's interests in a subsidiary that do not result in a loss of control are accounted for as equity transactions, whereby adjustments are made to the amounts of controlling and non-controlling interests within consolidated equity to reflect the change in relative interests, but no adjustments are made to goodwill and no gain or loss is recognized.

If a business combination involving entities not under common control is achieved in stages, the acquisition date carrying value of the acquirer's previously held equity interest in the acquiree is remeasured to fair value at the acquisition date. Any gains or losses arising from such remeasurement are recognized in the consolidated income statements.

When the Group loses control of a subsidiary, it is accounted for as a disposal of the entire interest in that subsidiary, with a resulting gain or loss being recognized in profit or loss. Any interest retained in that former subsidiary at the date when control is lost is recognized at fair value and this amount is regarded as the fair value on initial recognition of a financial asset (Note 2(j)) or, when appropriate, the cost on initial recognition of an investment in an associate or joint venture (Note 2(a)(ii)).

2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(a) Basis of consolidation *(Continued)*

In the Company's statement of financial position, investments in subsidiaries are stated at cost less impairment losses (Note 2(n)).

The particulars of the Group's principal subsidiaries are set out in Note 39.

(ii) Associates and joint ventures

An associate is an entity, not being a subsidiary, in which the Group exercises significant influence over its management. Significant influence is the power to participate in the financial and operating policy decisions of the investee but is not control or joint control over those policies.

The investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations each investor has rather than the legal structure of the joint arrangement. A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement.

Investments in associates and joint ventures are accounted for in the consolidated and separate financial statements using the equity method from the date that significant influence or joint control commences until the date that significant influence or joint control ceases. Under the equity method, the investment is initially recorded at cost and adjusted thereafter for the post acquisition change in the Group's share of the investee's net assets and any impairment loss relating to the investment (Notes 2(i) and (n)).

The Group's share of the post-acquisition, post-tax results of the investees and any impairment losses for the year are recognized in the consolidated income statements, whereas the Group's share of the post-acquisition, post-tax items of the investees' other comprehensive income is recognized in the consolidated statements of comprehensive income.

When the Group's share of losses exceeds its interest in the associate or the joint venture, the Group's interest is reduced to nil and recognition of further losses is discontinued except to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the investee. For this purpose, the Group's interest is the carrying amount of the investment under the equity method, together with any other long-term interests that in substance form part of the Group's net investment in the associate or the joint venture, after applying the expected credit losses ("ECLs") model to such other long-term interests where applicable.

When the Group ceases to have significant influence over an associate or joint control over a joint venture, it is accounted for as a disposal of the entire interest in that investee, with a resulting gain or loss being recognized in profit or loss. Any interest retained in that former investee at the date when significant influence or joint control is lost is recognized at fair value and this amount is regarded as the fair value on initial recognition of a financial asset (see Note 2(j)) or, when appropriate, the cost on initial recognition of an investment in an associate.

(iii) Transactions eliminated on consolidation

Inter-company balances and transactions and any unrealized gains arising from inter-company transactions are eliminated on consolidation. Unrealized gains arising from transactions with associates and joint ventures are eliminated to the extent of the Group's interest in the entity. Unrealized losses are eliminated in the same way as unrealized gains, but only to the extent that there is no evidence of impairment.

(iv) Merger accounting for common control combination

The consolidated financial statements incorporate the financial statements of the combining entities or businesses in which the common control combination occurs as if they had been combined from the date when the combining entities or businesses first came under the control of the controlling party. The net assets of the combining entities or businesses are combined using the existing book values from the controlling parties' perspective. No amount is recognized as consideration for goodwill or excess of acquirers' interest in the net fair value of acquiree's identifiable assets, liabilities and contingent liabilities over cost at the time of common control combination, to the extent of the continuation of the controlling party's interest.

2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(a) Basis of consolidation *(Continued)*

The consolidated income statements include the results of each of the combining entities or businesses from the earliest date presented or since the date when the combining entities or businesses first came under the common control, where there is a shorter period, regardless of the date of the common control combination. The comparative amounts in the consolidated financial statements are presented as if the entities or businesses had been combined at the beginning of the earliest period presented or when they first came under common control, whichever is shorter.

A uniform set of accounting policies is adopted by those entities. All intra-Group transactions, balances and unrealized gains on transactions between combining entities or businesses are eliminated on consolidation. Transaction costs, including professional fees, registration fees, costs of furnishing information to shareholders, costs or losses incurred in combining operations of the previously separate businesses, etc., incurred in relation to the common control combination that is to be accounted for by using merger accounting is recognized as an expense in the period in which it is incurred.

(b) Translation of foreign currencies

The presentation currency of the Group is Renminbi. Foreign currency transactions during the year are translated into Renminbi at the applicable rates of exchange quoted by the People's Bank of China ("PBOC") prevailing on the transaction dates. Foreign currency monetary assets and liabilities are translated into Renminbi at the PBOC's rates at the date of the statement of financial position.

Exchange differences, other than those capitalized as construction in progress, are recognized as income or expense in the "finance costs" section of the consolidated income statement.

The results of foreign operations are translated into Renminbi at the applicable rates quoted by the PBOC prevailing on the transaction dates. The statement of financial position items, including goodwill arising on consolidation of foreign operations are translated into Renminbi at the closing foreign exchange rates at the date of the statement of financial position. The income and expenses of foreign operations are translated into Renminbi at the spot exchange rates or an exchange rate that approximates the spot exchange rates on the transaction dates. The resulting exchange differences are recognized in other comprehensive income and accumulated in equity in the other reserves.

On disposal of a foreign operation, the cumulative amount of the exchange differences relating to that foreign operation is reclassified from equity to the consolidated income statements when the profit or loss on disposal is recognized.

(c) Cash and cash equivalents

Cash equivalents consist of time deposits with financial institutions with an initial term of less than three months when purchased. Cash equivalents are stated at cost, which approximates fair value.

(d) Trade, bills and other receivables

Trade, bills and other receivables are recognized initially at their transaction price, unless they contain significant financing components when they are recognized at fair value. They are subsequently measured at amortized cost using the effective interest method, less loss allowances for ECLs (Note 2(j)). Trade, bills and other receivables are derecognized if the Group's contractual rights to the cash flows from these financial assets expire or if the Group transfers these financial assets to another party without retaining control or substantially all risks and rewards of the assets.

(e) Inventories

Inventories are stated at the lower of cost and net realizable value. Cost mainly includes the cost of purchase computed using the weighted average method and, in the case of work in progress and finished goods, direct labor and an appropriate proportion of production overheads. Net realizable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and the estimated costs necessary to make the sale.

2 SIGNIFICANT ACCOUNTING POLICIES (Continued)

(f) Property, plant and equipment

An item of property, plant and equipment is initially recorded at cost, less accumulated depreciation and impairment losses (Note 2(n)). The cost of an asset comprises its purchase price, any directly attributable costs of bringing the asset to working condition and location for its intended use. The Group recognizes in the carrying amount of an item of property, plant and equipment the cost of replacing part of such an item when that cost is incurred, when it is probable that the future economic benefits embodied with the item will flow to the Group and the cost of the item can be measured reliably. All other expenditure is recognized as an expense in the consolidated income statements in the year in which it is incurred.

Gains or losses arising from the retirement or disposal of an item of property, plant and equipment, other than oil and gas properties, are determined as the difference between the net disposal proceeds and the carrying amount of the item and are recognized as income or expense in the consolidated income statements on the date of retirement or disposal.

Depreciation is provided to write off the cost amount of items of property, plant and equipment, other than oil and gas properties, over its estimated useful life on a straight-line basis, after taking into account its estimated residual value, as follows:

	Estimated usage period	Estimated residuals rate
Buildings	12 to 50 years	3%
Equipment, machinery and others	4 to 30 years	3%

Where parts of an item of property, plant and equipment have different useful lives, the cost of the item is allocated on a reasonable basis between the parts and each part is depreciated separately. Both the useful life of an asset and its residual value, if any, are reassessed annually.

(g) Oil and gas properties

The Group uses the successful efforts method of accounting for its oil and gas producing activities. Under this method, costs of development wells, the related supporting equipment and proved mineral interests in properties are capitalized. The cost of exploratory wells is initially capitalized as construction in progress pending determination of whether the well has found proved reserves. The impairment of exploratory well costs occurs upon the determination that the well has not found proved reserves. The exploratory well costs are usually not carried as an asset for more than one year following completion of drilling, unless (i) the well has found a sufficient quantity of reserves to justify its completion as a producing well if the required capital expenditure is made; (ii) drilling of the additional exploratory wells is under way or firmly planned for the near future; or (iii) other activities are being undertaken to sufficiently progress the assessing of the reserves and the economic and operating viability of the project. All other exploration costs, including geological and geophysical costs, other dry hole costs and annual lease rentals to explore for or use oil and natural gas, are expensed as incurred. Capitalized costs of proved oil and gas properties are amortized on a unit-of-production method based on volumes produced and reserves.

Management estimates future dismantlement costs for oil and gas properties with reference to engineering estimates after taking into consideration the anticipated method of dismantlement required in accordance with the industry practices and the future cash flows are adjusted to reflect such risks specific to the liability, as appropriate. These estimated future dismantlement costs are discounted at pre-tax risk-free rate and are capitalized as oil and gas properties, which are subsequently amortized as part of the costs of the oil and gas properties.

(h) Construction in progress

Construction in progress represents buildings, oil and gas properties, various plant and equipment under construction and pending installation, and is stated at cost less impairment losses (Note 2(n)). Cost comprises direct costs of construction as well as interest charges, and foreign exchange differences on related borrowed funds to the extent that they are regarded as an adjustment to interest charges, during the periods of construction.

Items may be produced while bringing an item of property, plant and equipment to the location and condition necessary for it to be capable of operating in the manner intended by management. The proceeds from selling any such items and the related costs are recognized in profit or loss.

Construction in progress is transferred to property, plant and equipment when the asset is substantially ready for its intended use.

No depreciation is provided in respect of construction in progress.

2 SIGNIFICANT ACCOUNTING POLICIES (Continued)

(i) Goodwill

Goodwill represents amounts arising on acquisition of subsidiaries, associates or joint ventures. Goodwill represents the difference between the cost of acquisition and the fair value of the net identifiable assets acquired.

Prior to January 1, 2008, the acquisition of the non-controlling interests of a consolidated subsidiary was accounted for using the acquisition method whereby the difference between the cost of acquisition and the fair value of the net identifiable assets acquired (on a proportionate share) was recognized as goodwill. From January 1, 2008, any difference between the amount by which the non-controlling interest is adjusted (such as through an acquisition of the non-controlling interests) and the cash or other considerations paid is recognized in equity.

Goodwill is stated at cost less accumulated impairment losses. Goodwill arising on a business combination is allocated to each cash-generating unit, or groups of cash-generating units, that is expected to benefit the synergies of the combination and is tested annually for impairment (Note 2(n)). In respect of associates or joint ventures, the carrying amount of goodwill is included in the carrying amount of the interest in the associates or joint ventures and the investment as a whole is tested for impairment whenever there is objective evidence of impairment (Note 2(n)).

(j) Financial assets

(i) Classification and measurement

The Group classifies financial assets into different categories depending on the business model for managing the financial assets and the contractual terms of cash flows of the financial assets: a) financial assets measured at amortized cost, b) financial assets measured at fair value through other comprehensive income ("FVOCI"), c) financial assets measured at fair value through profit or loss. A contractual cash flow characteristic which could have only a de minimis effect on the contractual cash flows of the financial assets, or could have an effect that is more than de minimis but is not genuine, does not affect the classification of the financial asset.

Financial assets are initially recognized at fair value. For financial assets measured at fair value through profit or loss, the relevant transaction costs are recognized in profit or loss. The transaction costs for other financial assets are included in the initially recognized amount. However, trade accounts receivable and bills receivable arising from sale of goods or rendering services, without significant financing component, are initially recognized based on the transaction price expected to be entitled by the Group.

Debt instruments

Debt instruments held by the Group mainly includes cash and cash equivalents, time deposits with financial institutions, receivables. These financial assets are measured at amortized cost and FVOCI.

- Amortized cost: The business model for managing such financial assets by the Group are held for collection of contractual cash flows. The contractual cash flow characteristics are to give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding. Interest income from these financial assets is recognized using the effective interest rate method.
- FVOCI: The business model for managing such financial assets by the Group are held for collection of contractual cash flows and for selling the financial assets, where the assets' cash flows represent solely payments of principal and interest on the principal amount outstanding. Movements in the carrying amount are taken through other comprehensive income, except for the recognition of impairment gains or losses, foreign exchange gains and losses and interest income calculated using the effective interest rate method, which are recognized in profit or loss.

Equity instruments

Equity instruments that the Group has no power to control, jointly control or exercise significant influence over, are measured at fair value through profit or loss and presented in financial assets at fair value through profit or loss.

2 SIGNIFICANT ACCOUNTING POLICIES (Continued)

(j) Financial assets (Continued)

In addition, the Group designates some equity instruments that are not held for trading as financial assets at FVOCI, are presented in financial assets at FVOCI. The relevant dividends of these financial assets are recognized in profit or loss. When derecognized, the cumulative gain or loss previously recognized in other comprehensive income is transferred to retained earnings.

(ii) Impairment

The Group recognizes a loss allowance for ECLs on a financial asset that is measured at amortized cost and a debt instrument that is measured at FVOCI.

The Group measures and recognizes ECLs, considering reasonable and supportable information about the relevant past events, current conditions and forecasts of future economic conditions.

The Group measures the ECLs of financial instruments on different stages at each the date of the statement of financial position. For financial instruments that have no significant increase in credit risk since the initial recognition, on first stage, the Group measures the loss allowance at an amount equal to 12-month ECLs. If there has been a significant increase in credit risk since the initial recognition of a financial instrument but credit impairment has not occurred, on second stage, the Group recognizes a loss allowance at an amount equal to lifetime ECLs. If credit impairment has occurred since the initial recognition of a financial instrument, on third stage, the Group recognizes a loss allowance at an amount equal to lifetime ECLs.

For financial instruments that have low credit risk at the date of the statement of financial position, the Group assumes that there is no significant increase in credit risk since the initial recognition, and measures the loss allowance at an amount equal to 12-month ECLs.

For financial instruments on the first stage and the second stage, and that have low credit risk, the Group calculates interest income according to carrying amount without deducting the impairment allowance and effective interest rate. For financial instruments on the third stage, interest income is calculated according to the carrying amount minus amortized cost after the provision of impairment allowance and effective interest rate.

For trade accounts receivable and bills receivable and financial assets at FVOCI related to revenue, the Group measures the loss allowance at an amount equal to lifetime ECLs.

The Group recognizes the loss allowance accrued or written back in profit or loss.

(iii) Derecognition

The Group derecognizes a financial asset when: a) the contractual right to receive cash flows from the financial asset expires; b) the Group transfers the financial asset and substantially all the risks and rewards of ownership of the financial asset; c) the financial asset has been transferred and the Group neither transfers nor retains substantially all the risks and rewards of ownership of the financial asset, but the Group has not retained control.

On derecognition of equity instruments at FVOCI, the amount accumulated in the fair value reserve is transferred to retained earnings. It is not recycled through profit or loss. While on derecognition of other financial assets, this difference is recognized in profit or loss.

(iv) Financial guarantees issued

Financial guarantees are contracts that require the issuer (i.e. the guarantor) to make specified payments to reimburse the beneficiary of the guarantee (the "holder") for a loss the holder incurs because a specified debtor fails to make payment when due in accordance with the terms of a debt instrument.

2 SIGNIFICANT ACCOUNTING POLICIES (Continued)

(j) Financial assets (Continued)

Financial guarantees issued are initially recognized at fair value, which is determined by reference to fees charged in an arm's length transaction for similar services, when such information is obtainable, or to interest rate differentials, by comparing the actual rates charged by lenders when the guarantee is made available with the estimated rates that lenders would have charged, had the guarantees not been available, where reliable estimates of such information can be made. Where consideration is received or receivable for the issuance of the guarantee, the consideration is recognized in accordance with the Group's policies applicable to that category of asset. Where no such consideration is received or receivable, an immediate expense is recognized in profit or loss.

Subsequent to initial recognition, the amount initially recognized as deferred income is amortized in profit or loss over the term of the guarantee as income from financial guarantees issued.

The Group monitors the risk that the specified debtor will default on the contract and recognizes a provision when ECLs on the financial guarantees are determined to be higher than the carrying amount in respect of the guarantees (i.e. the amount initially recognized, less accumulated amortization).

(k) Financial liabilities

The Group, at initial recognition, classifies financial liabilities as either financial liabilities subsequently measured at amortized cost or financial liabilities at fair value through profit or loss.

The Group's financial liabilities are mainly financial liabilities measured at amortized cost, including trade accounts payable and bills payable, other payables, and loans, etc. These financial liabilities are initially measured at the amount of their fair value after deducting transaction costs and use the effective interest rate method for subsequent measurement.

Where the present obligations of financial liabilities are completely or partially discharged, the Group derecognizes these financial liabilities or discharged parts of obligations. The differences between the carrying amounts and the consideration received are recognized in profit or loss.

(l) Determination of fair value for financial instruments

If there is an active market for financial instruments, the quoted price in the active market is used to measure fair values of the financial instruments. If no active market exists for financial instruments, valuation techniques are used to measure fair values. In valuation, the Group adopts valuation techniques that are applicable in the current situation and have sufficient available data and other information to support it, and selects input values that are consistent with the asset or liability characteristics considered by market participants in the transaction of relevant assets or liabilities, and gives priority to relevant observable input values. Use of unobservable input values where relevant observable input values cannot be obtained or are not practicable.

(m) Derivative financial instruments and hedge accounting

Derivative financial instruments are recognized 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 recognized immediately in profit or loss, except where the derivatives qualify for hedge accounting.

Hedge accounting is a method which recognizes the offsetting effects on profit or loss (or other comprehensive income) of changes in the fair values of the hedging instrument and the hedged item in the same accounting period, to represent the effect of risk management activities.

Hedged items are the items that expose the Group to risks of changes in future cash flows and that are designated as being hedged and that must be reliably measurable. The Group's hedged items include a forecast transaction that is settled with an undetermined future market price and exposes the Group to risk of variability in cash flows, etc.

A hedging instrument is a designated derivative whose changes in cash flows are expected to offset changes in cash flows of the hedged item.

2 SIGNIFICANT ACCOUNTING POLICIES (Continued)

(m) Derivative financial instruments and hedge accounting (Continued)

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 recognized asset or liability (such as all or some future interest payments on variable-rate debt) or a highly probable forecast transaction, and could affect profit or loss. Hedge effectiveness is determined at the inception of the hedge relationship, and through periodic prospective effectiveness assessments to ensure that an economic relationship exists between the hedged item and hedging instrument.

As long as a cash flow hedge meets the qualifying criteria for hedge accounting, the separate component of equity associated with the hedged item (cash flow hedge reserve) is adjusted to the lower of the following (in absolute amounts):

- (i) The cumulative gain or loss on the hedging instrument from inception of the hedge; and
- (ii) The cumulative change in fair value (present value) of the hedged item (i.e. the present value of the cumulative change in the hedged expected future cash flows) from inception of the hedge.

The gain or loss on the hedging instrument that is determined to be an effective hedge is recognized in other comprehensive income.

The portion of the gain or loss on the hedging instrument that is determined to be an ineffective hedge is recognized in profit or loss.

If a hedged forecast transaction subsequently results in the recognition of a non-financial asset or non-financial liability, or a hedged forecast transaction for a non-financial asset or a 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. This is not a reclassification adjustment and hence it does not affect other comprehensive income.

For cash flow hedges, other than those covered by the preceding policy statements, that amount is reclassified from the cash flow hedge reserve to profit or loss as a reclassification adjustment in the same period or periods during which the hedged expected future cash flows affect profit or loss.

If the amount that has been accumulated in the cash flow hedge reserve is a loss and the Group expects that all or a portion of that loss will not be recovered in one or more future periods, the Group immediately reclassifies the amount that is not expected to be recovered into profit or loss.

2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(m) Derivative financial instruments and hedge accounting *(Continued)*

When the hedging relationship no longer meets the risk management objective on the basis of which it qualified for hedge accounting (ie the entity no longer pursues that risk management objective), or when a hedging instrument expires or is sold, terminated, exercised, or there is no longer an economic relationship between the hedged item and the hedging instrument or the effect of credit risk starts to dominate the value changes that result from that economic relationship or no longer meets the criteria for hedge accounting, the Group discontinues prospectively the hedge accounting treatments. If the hedged future cash flows are still expected to occur, that amount remains in the cash flow hedge reserve and is accounted for as cash flow hedges. If the hedged future cash flows are no longer expected to occur, that amount is immediately reclassified from the cash flow hedge reserve to profit or loss as a reclassification adjustment. A hedged future cash flow that is no longer highly probable to occur may still be expected to occur, if the hedged future cash flows are still expected to occur, that amount remains in the cash flow hedge reserve and is accounted for as cash flow hedges.

Fair value hedges

A fair value hedge is a hedge of the exposure to changes in the fair value of a recognized asset or liability or an unrecognized firm commitment, or a portion of such an asset, liability or firm commitment.

The gain or loss from remeasuring the hedging instrument is recognized in profit or loss. The gain or loss on the hedged item attributable to the hedged risk adjusts the carrying amount of the recognized hedged item not measured at fair value and is recognized in profit or loss.

Any adjustment to the carrying amount of a hedged item is amortized to profit or loss if the hedged item is a financial instrument (or a component thereof) measured at amortized cost. The amortization is based on a recalculated effective interest rate at the date that amortization begins.

(n) Impairment of assets

The carrying amounts of assets, including property, plant and equipment, construction in progress, right-of-use assets and other assets, are reviewed at each date of the statement of financial position to identify indicators that the assets may be impaired. These assets are tested for impairment whenever events or changes in circumstances indicate that their recorded carrying amounts may not be recoverable. When such a decline has occurred, the carrying amount is reduced to the recoverable amount. For goodwill, the recoverable amount is estimated at each date of the statement of financial position.

The recoverable amount is the greater of the fair value less costs to disposal and the value in use. In determining the value in use, expected future cash flows generated by the asset are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. Where an asset does not generate cash inflows largely independent of those from other assets, the recoverable amount is determined for the smallest group of assets that generates cash inflows independently (i.e. a cash-generating unit).

The amount of the reduction is recognized as an expense in the consolidated income statements. Impairment losses recognized in respect of cash-generating units are allocated first to reduce the carrying amount of any goodwill allocated to the cash-generating unit and then, to reduce the carrying amount of the other assets in the unit on a pro rata basis, except that the carrying value of an asset will not be reduced below its individual fair value less costs to disposal, or value in use, if determinable.

Management assesses at each date of the statement of financial position whether there is any indication that an impairment loss recognized for an asset, except in the case of goodwill, in prior years may no longer exist. An impairment loss is reversed if there has been a favorable change in the estimates used to determine the recoverable amount. A subsequent increase in the recoverable amount of an asset, when the circumstances and events that led to the write-down or write-off cease to exist, is recognized as an income. The reversal is reduced by the amount that would have been recognized as depreciation had the write-down or write-off not occurred. An impairment loss in respect of goodwill is not reversed.

(o) Trade, bills and other payables

Trade, bills and other payables generally are financial liabilities and are initially recognized at fair value and thereafter stated at amortized cost unless the effect of discounting would be immaterial, in which case they are stated at invoice amounts.

2 SIGNIFICANT ACCOUNTING POLICIES (Continued)

(p) Interest-bearing borrowings

Interest-bearing borrowings are recognized initially at fair value less attributable transaction costs. Subsequent to initial recognition, interest-bearing borrowings are stated at amortized cost with any difference between cost and redemption value being recognized in the consolidated income statements over the period of borrowings using the effective interest method.

(q) Provisions and contingent liability

A provision is recognized for liability of uncertain timing or amount when the Group has a legal or constructive obligation arising as a result of a past event, when it is probable that an outflow of economic benefits will be required to settle the obligation and a reliable estimate can be made.

When it is not probable that an outflow of economic benefits will be required, or the amount cannot be estimated reliably, the obligation is disclosed as a contingent liability, unless the probability of outflow of economic benefits is remote. Possible obligations, whose existence will only be confirmed by the occurrence or non-occurrence of one or more future events are also disclosed as contingent liabilities unless the probability of outflow of economic benefits is remote.

Where some or all of the expenditure required to settle a provision is expected to be reimbursed by another party, a separate asset is recognized for any expected reimbursement that would be virtually certain. The amount recognized for the reimbursement is limited to the carrying amount of the provision.

Provisions for future dismantlement costs are initially recognized based on the present value of the future costs expected to be incurred in respect of the Group's expected dismantlement and abandonment costs at the end of related oil and gas exploration and development activities. Any subsequent change in the present value of the estimated costs, other than the change due to passage of time which is regarded as interest cost, is reflected as an adjustment to the provision and oil and gas properties.

An onerous contract exists when the Group has a contract under which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received from the contract. Provisions for onerous contracts are measured at the present value of the lower of the expected cost of terminating the contract and the net cost of continuing with the fulfilling the contract. The cost of fulfilling the contract includes both the incremental costs of fulfilling that contract and an allocation of other costs that relate directly to fulfilling that contract.

(r) Revenue recognition

Revenue arises in the course of the Group's ordinary activities, and increases in economic benefits in the form of inflows that result in an increase in equity, other than those relating to contributions from equity participants.

The Group sells crude oil, natural gas, petroleum and chemical products, etc. Revenue is recognized according to the expected consideration amount, when a customer obtains control over the relevant goods or services. To determine whether a customer obtains control of a promised goods or services (assets), the Group shall consider indicators of the transfer of control, which include, but are not limited to, the Group has a present right to payment for the assets; the Group has transferred physical possession of the assets to the customer; the customer has the significant risks and rewards of ownership of the assets; the customer has accepted the assets.

Sales of goods

Sales are recognized when control of the goods have transferred. Obtaining control of relevant goods means that a customer can direct the use of the goods and obtain almost all the economic benefits from it. Advance from customers but goods not yet delivered is recorded as contract liabilities and is recognized as revenues when a customer obtains control over the relevant goods.

2 SIGNIFICANT ACCOUNTING POLICIES (Continued)

(s) Government grants

Grants from the government are recognized at their fair value where there is a reasonable assurance that the grant will be received and the Group will comply with all attached conditions.

Government grants relating to costs are deferred and recognized in the profit or loss over the period necessary to match them with the costs that they are intended to compensate.

Government grants relating to the purchase of property, plant and equipment are included in non-current liabilities as deferred income and are recognized to profit or loss on a straight-line basis over the expected lives of the related assets.

(t) Borrowing costs

Borrowing costs are expensed in the consolidated income statements in the period in which they are incurred, except to the extent that they are capitalized as being attributable to the construction of an asset which necessarily takes a period of time to get ready for its intended use.

(u) Repairs and maintenance expenditure

Repairs and maintenance expenditure is expensed as incurred.

(v) Environmental expenditures

Environmental expenditures that relate to current ongoing operations or to conditions caused by past operations are expensed as incurred.

Liabilities related to future remediation costs are recorded when environmental assessments and/or cleanups are probable and the costs can be reliably estimated. As facts concerning environmental contingencies become known to the Group, the Group reassesses its position both with respect to accrued liabilities and other potential exposures.

(w) Research and development expense

Research and development expenditures that cannot be capitalized are expensed in the period in which they are incurred. Research and development expense amounted to RMB 10,087, RMB 11,481 and RMB 12,773 for the years ended December 31, 2020, 2021 and 2022, respectively.

(x) Leases

A lease is a contract that a lessor transfers the right to use an identified asset for a period of time to a lessee in exchange for consideration.

(i) As lessee

The Group recognizes a right-of-use asset at the date at which the leased asset is available for use by the Group, and recognizes a lease liability measured at the present value of the remaining lease payments. The lease payments include fixed payments, the exercise price of a purchase option if the Group is reasonably certain to exercise that option, and payments of penalties for terminating the lease if the lease term reflects the Group exercising that option, etc. Variable payments that are based on a percentage of sales are not included in the lease payments, and should be recognized in profit or loss when incurred. Lease liabilities to be paid within one year (including one year) from the date of the statement of financial position is presented in current liabilities.

Right-of-use assets of the Group mainly comprise land. Right-of-use assets are measured at cost which comprises the amount of the initial measurement of the lease liability, any lease payments made at or before the commencement date, any initial direct costs incurred by the lessee, less any lease incentives received. The Group depreciates the right-of-use assets over the shorter of the asset's useful life and the lease term on a straight-line basis. When the recoverable amount of a right-of-use asset is less than its carrying amount, the carrying amount is reduced to the recoverable amount.

2 SIGNIFICANT ACCOUNTING POLICIES *(Continued)*

(x) Leases *(Continued)*

Payments associated with short-term leases with lease terms within 12 months and all leases of low-value assets are recognized on a straight-line basis over the lease term as an expense in profit or loss or as cost of relevant assets, instead of recognizing right-of-use assets and lease liabilities.

A lessee shall account for a lease modification as a separate lease if both: (1) the modification increases the scope of the lease by adding the right to use one or more underlying assets; and (2) the consideration for the lease increases by an amount commensurate with the stand-alone price for the increase in scope and any appropriate adjustments to that stand-alone price to reflect the circumstances of the articular contract.

For a lease modification that is not accounted for as a separate lease, except for the practical expedient which applies only to rent concessions occurring as a direct consequence of the COVID-19 pandemic, the Group determine the lease term of the modified lease at the effective date of the modification, and remeasure the lease liability by discounting the revised lease payments using a revised discount rate. The Group decrease the carrying amount of the right-of-use asset to reflect the partial or full termination of the lease for lease modifications that decrease the scope or shorten the term of the lease, and shall recognize in profit or loss any gain or loss relating to the partial or full termination of the lease. The Group make a corresponding adjustment to the right-of-use asset for all other lease modifications.

(ii) As lessor

A lease that transfers substantially all the risks and rewards incidental to ownership of an asset is a finance lease. An operating lease is a lease other than a finance lease.

When the Group leases self-owned plants and buildings, equipment and machinery, lease income from an operating lease is recognized on a straight-line basis over the period of the lease. The Group recognizes variable lease income which is based on a certain percentage of sales as rental income when occurred.

(y) Employee benefits

The contributions payable under the Group's retirement plans are recognized as an expense in the consolidated income statements as incurred and according to the contribution determined by the plans. Further information is set out in Note 37.

Termination benefits, such as employee reduction expenses, are recognized when, and only when, the Group demonstrably commits itself to terminate employment or to provide benefits as a result of voluntary redundancy by having a detailed formal plan which is without realistic possibility of withdrawal.

(z) Income tax

Income tax comprises current and deferred tax. Current tax is calculated on taxable income by applying the applicable tax rates. Deferred tax is provided using the statement of financial position liability method on all temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes only to the extent that it is probable that future taxable income will be available against which the assets can be utilized. Deferred tax is calculated on the basis of the enacted tax rates or substantially enacted tax rates that are expected to apply in the period when the asset is realized or the liability is settled. The effect on deferred tax of any changes in tax rates is charged or credited to the consolidated income statements, except for the effect of a change in tax rate on the carrying amount of deferred tax assets and liabilities which were previously charged or credited to other comprehensive income or directly in equity.

The tax value of losses expected to be available for utilization against future taxable income is set off against the deferred tax liability within the same legal tax unit and jurisdiction to the extent appropriate, and is not available for set off against the taxable profit of another legal tax unit. The carrying amount of a deferred tax asset is reviewed at each date of statement of financial position and is reduced to the extent that it is no longer probable that the related tax benefit will be realized.

2 SIGNIFICANT ACCOUNTING POLICIES (Continued)

(aa) Dividends

Dividends and distributions of profits proposed in the profit appropriation plan which will be authorized and declared after the date of statement of financial position, are not recognized as a liability at the date of statement of financial position and are separately disclosed in the notes to the financial statements. Dividends are recognized as a liability in the period in which they are declared.

(bb) Segment reporting

Operating segments, and the amounts of each segment item reported in the consolidated financial statements, are identified from the financial information provided regularly to the Group's chief operating decision maker for the purposes of allocating resources to, and assessing the performance of the Group's various lines of business.

3. REVENUE FROM PRIMARY BUSINESS

Revenue from primary business mainly represents revenue from the sales of refined petroleum products, chemical products, crude oil and natural gas, which are recognized at a point in time.

	Years ended December 31,		
	2020 RMB	2021 RMB	2022 RMB
Gasoline	557,605	726,057	796,667
Diesel	422,566	542,260	743,551
Crude oil	351,707	429,038	517,183
Chemical feedstock	22,351	44,079	42,785
Basic organic chemicals	133,046	198,453	223,679
Synthetic resin	122,368	149,208	144,524
Kerosene	72,385	112,519	168,017
Natural gas	48,099	68,443	83,853
Synthetic fiber monomers and polymers	42,388	45,464	45,335
Others (i)	276,139	363,979	491,762
	<u>2,048,654</u>	<u>2,679,500</u>	<u>3,257,356</u>

Note:

- (i) Others are primarily liquefied petroleum gas and other refinery and chemical byproducts and joint products.

4. OTHER OPERATING REVENUES

	Years ended December 31,		
	2020 RMB	2021 RMB	2022 RMB
Sale of materials and others	54,986	59,990	59,590
Rental income	1,084	1,394	1,222
	<u>56,070</u>	<u>61,384</u>	<u>60,812</u>

5. SELLING, GENERAL AND ADMINISTRATIVE EXPENSES

The following items are included in selling, general and administrative expenses:

	Years ended December 31,		
	2020 RMB	2021 RMB	2022 RMB
Variable lease payments, low-value and short-term lease payment	2,683	2,393	2,205
Auditor's remuneration:			
- Audit services	73	59	66
- Others	8	8	3

6. PERSONNEL EXPENSES

	Years ended December 31,		
	2020 RMB	2021 RMB	2022 RMB
Salaries, wages and other benefits	78,542	91,560	90,395
Contributions to retirement schemes (Note 37)	8,983	11,932	13,190
	<u>87,525</u>	<u>103,492</u>	<u>103,585</u>

7. TAXES OTHER THAN INCOME TAX

	Years ended December 31,		
	2020 RMB	2021 RMB	2022 RMB
Consumption tax (i)	197,542	213,894	206,838
City construction tax (ii)	15,710	18,044	17,081
Special oil income levy	34	1,573	13,874
Education surcharge(ii)	11,678	13,409	12,337
Resources tax	4,572	6,432	8,752
Others	5,482	5,680	5,109
	<u>235,018</u>	<u>259,032</u>	<u>263,991</u>

Notes:

(i) Consumption tax was levied based on sales quantities of taxable products, tax rate of products is presented as below:

Products	RMB/Ton
Gasoline	2,109.76
Diesel	1,411.20
Naphtha	2,105.20
Solvent oil	1,948.64
Lubricant oil	1,711.52
Fuel oil	1,218.00
Jet fuel oil	1,495.20

(ii) City construction tax and education surcharge is levied on an entity based on its paid amount of value-added tax and consumption tax.

8. OTHER OPERATING INCOME / (EXPENSES), NET

	Years ended December 31,		
	2020 RMB	2021 RMB	2022 RMB
Government grants(i)	8,776	6,706	9,277
Ineffective portion of change in fair value of cash flow hedges	3,052	694	(255)
Net realized and unrealized loss on derivative financial instruments not qualified as hedging	(1,252)	(14,873)	(15,535)
Impairment losses on long-lived assets (ii)	(14,629)	(10,035)	(5,669)
Gain/(loss) on disposal of property, plant, equipment and other non-current assets, net	398	(3,062)	(722)
Fines, penalties and compensations	(43)	(220)	(39)
Donations	(301)	(165)	(447)
Others	(1,781)	(761)	(1,389)
	<u>(5,780)</u>	<u>(21,716)</u>	<u>(14,779)</u>

Notes:

- (i) Government grants for the years ended December 31, 2020, 2021 and 2022 primarily represent financial appropriation income and non-income tax refunds received from respective government agencies without conditions or other contingencies attached to the receipts of the grants.
- (ii) Impairment losses recognized on long-lived assets of the exploration and production (“E&P”) segments were RMB 8,495, RMB 2,467 and RMB 2,891 for the years ended December 31, 2020, 2021 and 2022, respectively. The impairment comprised RMB 8,435, RMB 2,467 and RMB 2,891 on property, plant and equipment for the years ended December 31, 2020, 2021 and 2022, respectively, and RMB 60 on construction in progress for the year ended December 31, 2020. The primary factors resulting in the E&P segment impairment loss were downward revision of oil and gas reserve in certain fields and high extraction costs. E&P segment determines recoverable amounts of property, plant and equipment relating to oil and gas producing activities, which include significant judgements and assumptions. The recoverable amounts were determined based on the present values of the expected future cash flows of the assets using pre-tax discount rates of 10.47%, 10.47% and 8.17% to 14.86% for the years ended December 31, 2020, 2021 and 2022, respectively. Further future downward revisions to the Group’s oil or nature gas price outlook would lead to further impairments which, in aggregate, are likely to be material. It is estimated that a general decrease of 5% in oil price, with all other variables held constant, would result in additional impairment loss on the Group’s properties, plant and equipment relating to oil and gas producing activities by approximately RMB 4,548, RMB 3,628 and RMB 1,693 for the years ended December 31, 2020, 2021 and 2022, respectively. It is estimated that a general increase of 5% in operating cost, with all other variables held constant, would result in additional impairment loss on the Group’s property plant and equipment relating to oil and gas producing activities by approximately RMB 2,836, RMB 2,400 and RMB 1,508 for the years ended December 31, 2020, 2021 and 2022, respectively. It is estimated that a general increase of 5% in discount rate, with all other variables held constant, would result in additional impairment loss on the Group’s property, plant and equipment relating to oil and gas producing activities by approximately RMB 287, RMB 180 and RMB 126 for the years ended December 31, 2020, 2021 and 2022, respectively.

8. OTHER OPERATING INCOME / (EXPENSES), NET (Continued)

Impairment losses recognized for the chemicals segment were RMB 3,675, RMB 5,332 and RMB 1,790 for the years ended December 31, 2020, 2021 and 2022, respectively, and comprised of impairment losses of RMB 2,680, RMB 5,184 and RMB 1,790 on property, plant and equipment for the years ended December 31, 2020, 2021 and 2022, respectively, RMB 744 and RMB 62 on construction in progress for the years ended December 31, 2020 and 2021, respectively, RMB 16 on intangible assets for the year ended December 31, 2021, RMB 251 and RMB 70 for investment in associates and joint ventures for the years ended December 31, 2020 and 2021, respectively. Impairment losses recognized for the refining segment were RMB 1,923, RMB 860 and RMB 2 for the years ended December 31, 2020, 2021 and 2022, respectively, and comprised of impairment losses of RMB 226, RMB 860 and RMB 2 on property, plant and equipment for the years ended December 31, 2020, 2021 and 2022, respectively, RMB 1,697 for investment in joint venture for the year ended December 31, 2020. These impairment losses relate to certain refining and chemicals production facilities that are held for use for the years ended December 31, 2020, 2021 and 2022. The primary factors resulting in the impairment losses were due to the suspension of operations of certain production facilities, and evidence that indicate the economic performance of certain production facilities was lower than the expectation. The carrying amounts of these facilities were written down to their recoverable amounts, which were determined based on the present values of expected future cash flows of the assets using pre-tax discount rates ranging from 9.87% to 11.60%, 10.50% to 13.90% and 7.64% to 18.68% for the years ended December 31, 2020, 2021 and 2022.

Impairment losses recognized on long-lived assets of the marketing and distribution segment were RMB 536, RMB 1,211 and RMB 415 for the years ended December 31, 2020, 2021 and 2022, respectively. The impairment comprised of impairment losses of RMB 442, RMB 873 and RMB 398 on property, plant and equipment for the years ended December 31, 2020, 2021 and 2022, respectively, impairment losses of RMB 47, RMB 246 and RMB 4 on intangible assets for the years ended December 31, 2020, 2021 and 2022, respectively, impairment losses of RMB 2 on right of use assets for the year ended December 31, 2021, impairment losses of RMB 7, RMB 8 and RMB 2 on investments in associates and joint ventures for the years ended December 31, 2020, 2021 and 2022, respectively, impairment losses of RMB 40, RMB 82 and RMB 11 on construction in progress for the years ended December 31, 2020, 2021 and 2022, respectively, primarily relate to certain service stations and certain construction in progress that were closed or abandoned during respective years. In measuring the amounts of impairment charges, the carrying amounts of these assets were compared to the present value of the expected future cash flows of the assets, as well as information about sales of similar properties in the same geographic area for closed or abandoned service stations.

Impairment loss recognized on long-lived assets of the corporate and others segment were RMB 165 and RMB 571 for the years ended December 31, 2021 and 2022, respectively. The impairment comprised of impairment losses of RMB 3 and RMB 1 on property, plant and equipment for the years ended December 31, 2021 and 2022, respectively, impairment loss of RMB 162 on investments in associates and joint ventures for the year ended December 31, 2021, impairment loss of RMB 570 on construction in progress for the years ended December 31, 2022.

9. INTEREST EXPENSE

	Years ended December 31,		
	2020 RMB	2021 RMB	2022 RMB
Interest expense incurred	6,517	5,679	7,877
Less: Interest expense capitalized*	(2,011)	(996)	(1,307)
	4,506	4,683	6,570
Interest expense on lease liabilities	9,349	9,200	9,096
Accretion expenses (Note 32)	1,343	1,135	1,103
Interest expense	15,198	15,018	16,769
* Interest rates per annum at which borrowing costs were capitalized for construction in progress	2.60% to 4.66%	1.84% to 4.35%	1.89% to 4.25%

10. INVESTMENT INCOME

	Years ended December 31,		
	2020 RMB	2021 RMB	2022 RMB
Investment income from disposal of business and long-term equity investments (i)	37,525	82	13,754
Dividend income from holding of other equity instrument investments	156	34	76
Others	63	182	230
	<u>37,744</u>	<u>298</u>	<u>14,060</u>

Note:

- (i) The Company and Sinomart KTS Development Limited, Sinopec Natural Gas Limited Company and Sinopec Marketing Company Limited (“Marketing Company”), the subsidiaries of the Company entered into the Agreement on Cash Payment to Purchase Equity in Sinopec Yu Ji Pipeline Company Limited, the Agreement on Additional Issuance of Equity and Cash Payment to Purchase Assets, the Agreement on Cash Payment to Purchase Assets and the Agreement on Additional Issuance of Equity to Purchase Assets with China Oil & Gas Pipeline Network Corporation (“PipeChina”), on July 21, 2020 and on July 23, 2020 respectively, pursuant to which the Company and its subsidiaries proposed to dispose target business, including equity interests in the relevant companies, oil and gas pipeline and ancillary facilities, to PipeChina. The above transactions were considered and approved by the 15th Session of 7th Directorate Meeting on July 23, 2020 and the second Extraordinary General Meeting on September 28, 2020. The transaction consideration was mainly additional issuance of equity and/or cash payment by PipeChina and the gain on above transactions was RMB 37,731 in 2020.

The Company and Sinopec Shanghai Gaoqiao Petrochemical Co., Ltd. (“Gaoqiao Petrochemical”) and INEOS Investment (Shanghai) Company Limited (“INEOS Shanghai”) entered into an equity transfer agreement on 28 July 2022. According to the agreement, the Company and Gaoqiao Petrochemical transferred 15% and 35% equity interests in Shanghai SECCO Petrochemical Co., Ltd. (“Shanghai SECCO”) to INEOS Shanghai respectively at a total consideration of RMB 10,863. The above transactions were considered and approved by the 10th Session of 8th Directorate Meeting of the Company. The transactions were completed on 28 December 2022 and the Company lost control over Shanghai SECCO. The Group accounted for its remaining 50% equity interest retained in Shanghai SECCO, at fair value upon initial recognition, as an interest in a joint venture from the date when control was lost. The investment income from disposal of Shanghai SECCO is RMB 13,697.

11. INCOME TAX EXPENSE

Income tax expense in the consolidated income statements represents:

	Years ended December 31,		
	2020 RMB	2021 RMB	2022 RMB
Current tax			
- Provision for the year	14,334	17,522	18,796
- Adjustment of prior years	(117)	(462)	(1,757)
Deferred taxation (Note 25)	(7,873)	6,258	1,718
	<u>6,344</u>	<u>23,318</u>	<u>18,757</u>

11. INCOME TAX EXPENSE (Continued)

Reconciliation between actual income tax expense and the expected income tax expense at applicable statutory tax rates is as follows:

	Years ended December 31,		
	2020	2021	2022
	RMB	RMB	RMB
Earnings before income tax	48,615	109,169	94,400
Expected PRC income tax expense at a statutory tax rate of 25%	12,154	27,292	23,600
Tax effect of non-deductible expenses	3,281	5,948	4,509
Tax effect of non-taxable income	(8,330)	(8,096)	(5,827)
Tax effect of preferential tax rate (i)	(1,011)	(2,766)	(3,091)
Effect of income taxes at foreign operations	(730)	(222)	(128)
Tax effect of utilization of previously unrecognized tax losses and temporary differences	(65)	(701)	(850)
Tax effect of tax losses not recognized	1,087	1,391	2,243
Write-down of deferred tax assets	75	934	58
Adjustment of prior years	(117)	(462)	(1,757)
Actual income tax expense	6,344	23,318	18,757

Note:

- (i) The provision for PRC current income tax is based on a statutory income tax rate of 25% of the assessable income of the Group as determined in accordance with the relevant income tax rules and regulations of the PRC, except for certain entities of the Group in western regions in the PRC are taxed at preferential income tax rate of 15% through the year 2022. According to Announcement [2020] No. 23 of the Ministry of Finance (“MOF”) “Announcement of the MOF, the State Taxation Administration and the National Development and Reform Commission on continuation of the income tax policy of western development enterprises”, the preferential tax rate of 15% extends from January 1, 2021 to December 31, 2030.

12. OTHER COMPREHENSIVE INCOME

	Years ended December 31,								
	2020			2021			2022		
	Before tax amount RMB	Tax effect RMB	Net of tax amount RMB	Before tax amount RMB	Tax effect RMB	Net of tax amount RMB	Before tax amount RMB	Tax effect RMB	Net of tax amount RMB
Cash flow hedges:									
Effective portion of changes in fair value of hedging instruments recognized during the year	9,207	(2,295)	6,912	15,659	(3,881)	11,778	6,667	(1,675)	4,992
Reclassification adjustments for amounts transferred to the consolidated income statements	198	(37)	161	8,858	(1,618)	7,240	8,127	(1,482)	6,645
Net movement during the year recognized in other comprehensive income (i)	9,405	(2,332)	7,073	24,517	(5,499)	19,018	14,794	(3,157)	11,637
Changes in the fair value of instruments at fair value through other comprehensive income	(6)	(4)	(10)	(6)	2	(4)	(79)	12	(67)
Transfer of loss on disposal of equity investments at fair value through other comprehensive income to retained earnings	(12)	—	(12)	—	—	—	—	—	—
Net movement during the year recognized in other comprehensive income	(18)	(4)	(22)	(6)	2	(4)	(79)	12	(67)
Cost of hedging reserve	162	—	162	(220)	—	(220)	149	—	149
Share of other comprehensive loss of associates and joint ventures	(2,441)	—	(2,441)	441	—	441	2,856	—	2,856
Foreign currency translation differences	(4,457)	—	(4,457)	(1,728)	—	(1,728)	7,254	—	7,254
Other comprehensive income	2,651	(2,336)	315	23,004	(5,497)	17,507	24,974	(3,145)	21,829

Note:

- (i) As at December 31, 2021 and 2022, cash flow hedge reserve amounted to a gain of RMB 7,244 and a gain of RMB 3,079, respectively, of which a gain of RMB 7,214 and a gain of RMB 3,024 were attributable to owners of the Company.

13. BASIC AND DILUTED EARNINGS PER SHARE

The calculation of basic earnings per share for the years ended December 31, 2020, 2021 and 2022 is based on the net income attributable to ordinary owners of the Company of RMB 33,443, RMB 71,975 and RMB 66,153, respectively, and the weighted average number of shares of 121,071,209,646, 121,071,209,646 and 120,889,248,735, respectively.

The calculation of diluted earnings per share for the years ended December 31, 2020, 2021 and 2022 is based on the net income attributable to ordinary owners of the Company (diluted) of RMB 33,443, RMB 71,975 and RMB 66,153, respectively, and the weighted average number of shares of 121,071,209,646, 121,071,209,646 and 120,889,248,735, respectively, calculated as follows:

13. BASIC AND DILUTED EARNINGS PER SHARE (Continued)

(i) Net income attributable to ordinary owners of the Company (diluted)

	2020 RMB	2021 RMB	2022 RMB
Net income attributable to ordinary owners of the Company	33,443	71,975	66,153
Net income attributable to ordinary owners of the Company (diluted)	<u>33,443</u>	<u>71,975</u>	<u>66,153</u>

(ii) Weighted average number of shares (diluted)

	2020 Number of shares	2021 Number of shares	2022 Number of shares
Weighted average number of shares as at December 31	121,071,209,646	121,071,209,646	120,889,248,735
Weighted average number of shares (diluted) as at December 31	<u>121,071,209,646</u>	<u>121,071,209,646</u>	<u>120,889,248,735</u>

14. DERIVATIVE FINANCIAL ASSETS AND DERIVATIVE FINANCIAL LIABILITIES

Derivative financial assets and derivative financial liabilities of the Group are primarily commodity futures and swaps contracts. See Note 40.

15. TRADE ACCOUNTS RECEIVABLE

	December 31,	
	2021 RMB	2022 RMB
Amounts due from third parties	30,159	38,942
Amounts due from Sinopec Group Company and fellow subsidiaries	2,199	7,261
Amounts due from associates and joint ventures	<u>6,536</u>	<u>4,240</u>
	38,894	50,443
Less: Loss allowance for ECLs	<u>(4,033)</u>	<u>(4,079)</u>
	<u>34,861</u>	<u>46,364</u>

The ageing analysis of trade accounts receivable (net of loss allowance for ECLs) is as follows:

	December 31,	
	2021 RMB	2022 RMB
Within one year	34,180	46,039
Between one and two years	442	152
Between two and three years	221	88
Over three years	<u>18</u>	<u>85</u>
	<u>34,861</u>	<u>46,364</u>

15. TRADE ACCOUNTS RECEIVABLE (Continued)

Loss allowance for ECLs are analyzed as follows:

	2020 RMB	2021 RMB	2022 RMB
Balance as at January 1	1,848	3,860	4,033
Provision for the year	2,173	436	417
Written back for the year	(68)	(127)	(561)
Written off for the year	(23)	(30)	(49)
Others	(70)	(106)	239
Balance as at December 31	3,860	4,033	4,079

Sales are generally on a cash term. Credit is generally only available for major customers with well-established trading records. Amounts due from Sinopec Group Company and fellow subsidiaries are repayable under the same terms.

These receivables relate to a wide range of customers for whom there is no recent history of default.

Information about the impairment of trade accounts receivable and the Group's exposure to credit risk can be found in Note 40.

16. INVENTORIES

	December 31,	
	2021 RMB	2022 RMB
Crude oil and other raw materials	109,940	139,307
Work in progress	15,701	14,536
Finished goods	84,174	93,994
Spare parts and consumables	2,515	2,987
	212,330	250,824
Less: Allowance for diminution in value of inventories	(4,897)	(6,583)
	207,433	244,241

Allowance for diminution in value of inventories is analyzed as follows:

	2020 RMB	2021 RMB	2022 RMB
Balance as at January 1	2,597	3,107	4,897
Allowance for the year	11,689	3,148	6,407
Reversal of allowance	(333)	(18)	(85)
Written off	(10,795)	(1,300)	(4,530)
Others	(51)	(40)	(106)
Balance as at December 31	3,107	4,897	6,583

During the years ended December 31, 2020, 2021 and 2022, the costs of inventories recognized as an expense in the consolidated income statements were RMB 1,657,227, RMB 2,177,141 and RMB 2,774,951, respectively. Such costs include the write-down of inventories of RMB 11,689, RMB 3,148 and RMB 6,407, respectively, and the reversal of write-down of inventories of RMB 333, RMB 18 and RMB 85, respectively. The write-down of inventories and the reversal of write-down of inventories were recorded in purchased crude oil, products and operating supplies and expenses in the consolidated income statements. The write-down of inventories which were realized primarily with the sales of inventories for the years ended December 31, 2020, 2021 and 2022 were RMB 10,795, RMB 1,300 and RMB 4,530. The write-down of inventories for the year ended December 31, 2022 was mainly related to finished goods and raw materials.

17. PREPAID EXPENSES AND OTHER CURRENT ASSETS

	December 31,	
	2021 RMB	2022 RMB
Receivables	35,918	27,311
Advances to suppliers	9,267	7,956
Value-added input tax to be deducted	19,137	25,355
Prepaid income tax	5,109	4,017
	<u>69,431</u>	<u>64,639</u>

18. PROPERTY, PLANT AND EQUIPMENT

	Plants and buildings RMB	Oil and gas properties RMB	Equipment, machinery and others RMB	Total RMB
Cost:				
Balance as at January 1, 2021	138,550	757,592	996,702	1,892,844
Additions	509	2,192	5,177	7,878
Transferred from construction in progress	5,487	40,357	65,182	111,026
Reclassifications	646	(617)	(29)	—
Invest into the joint ventures and associated companies	(8)	—	(188)	(196)
Reclassification to other long-term assets	(665)	(22)	(1,027)	(1,714)
Disposals	(1,297)	(5,517)	(17,495)	(24,309)
Exchange adjustments	(57)	(940)	(95)	(1,092)
Balance as at December 31, 2021	<u>143,165</u>	<u>793,045</u>	<u>1,048,227</u>	<u>1,984,437</u>
Balance as at January 1, 2022	143,165	793,045	1,048,227	1,984,437
Additions	146	4,277	3,528	7,951
Transferred from construction in progress	8,832	40,397	72,738	121,967
Reclassifications	1,042	(289)	(753)	—
Invest into the joint ventures and associated companies	(64)	—	(150)	(214)
Reclassification to other long-term assets	(66)	(50)	(1,417)	(1,533)
Disposals	(830)	(429)	(17,169)	(18,428)
Exchange adjustments	207	3,768	321	4,296
Balance as at December 31, 2022	<u>152,432</u>	<u>840,719</u>	<u>1,105,325</u>	<u>2,098,476</u>
Accumulated depreciation and impairment losses:				
Balance as at January 1, 2021	63,540	620,720	614,969	1,299,229
Depreciation for the year	4,586	39,670	48,568	92,824
Impairment losses for the year	742	1,904	6,774	9,420
Reclassifications	185	(410)	225	—
Invest into the joint ventures and associated companies	(5)	—	(133)	(138)
Reclassification to other long-term assets	(82)	(7)	(170)	(259)
Written back on disposals	(771)	(135)	(13,668)	(14,574)
Exchange adjustments	(29)	(904)	(57)	(990)
Balance as at December 31, 2021	<u>68,166</u>	<u>660,838</u>	<u>656,508</u>	<u>1,385,512</u>
Balance as at January 1, 2022	68,166	660,838	656,508	1,385,512
Depreciation for the year	4,736	31,059	50,383	86,178
Impairment losses for the year	312	2,754	2,016	5,082
Reclassifications	259	(209)	(50)	—
Invest into the joint ventures and associated companies	(20)	—	(60)	(80)
Reclassification to other long-term assets	(25)	(40)	(160)	(225)
Written back on disposals	(734)	(406)	(11,465)	(12,605)
Exchange adjustments	101	3,616	197	3,914
Balance as at December 31, 2022	<u>72,795</u>	<u>697,612</u>	<u>697,369</u>	<u>1,467,776</u>
Net book value:				
Balance as at January 1, 2021	75,010	136,872	381,733	593,615
Balance as at December 31, 2021	<u>74,999</u>	<u>132,207</u>	<u>391,719</u>	<u>598,925</u>
Balance as at December 31, 2022	<u>79,637</u>	<u>143,107</u>	<u>407,956</u>	<u>630,700</u>

The Group compares the carrying amount of individual cash-generating units which were grouped for the property, plant and equipment related to oil and gas producing activities with its value in use, using a discounted cash flow forecast prepared based on the future production profiles included in the oil and gas reserve reports, and recorded impairment losses amounting to RMB 2,467 and RMB 2,891 for the years ended 31 December 2021 and 2022.

The additions to oil and gas properties of the Group for the years ended December 31, 2021 and 2022 included RMB 2,163 and RMB 4,277 respectively, of estimated dismantlement costs for site restoration.

18. PROPERTY, PLANT AND EQUIPMENT *(Continued)*

As at December 31, 2021 and 2022, the Group had no individual substantial property, plant and equipment which have been pledged.

As at December 31, 2021 and 2022, the Group had no individual significant property, plant and equipment which were temporarily idle or pending for disposal.

As at December 31, 2021 and 2022, the Group had no individual significant fully depreciated property, plant and equipment which were still in use.

19. CONSTRUCTION IN PROGRESS

	2021 RMB	2022 RMB
Balance as at January 1	125,525	155,939
Additions	159,729	180,741
Dry hole costs written off	(7,702)	(6,416)
Transferred to property, plant and equipment	(111,026)	(121,967)
Reclassification to other long-term assets	(10,302)	(11,492)
Impairment losses for the year	(144)	(581)
Disposals and others	(107)	(240)
Exchange adjustments	(34)	61
Balance as at December 31	155,939	196,045

Net changes in capitalized cost of exploratory wells included in the Group's construction in progress in the E&P segment are analyzed as follows:

	2020 RMB	2021 RMB	2022 RMB
At beginning of year	8,961	11,129	12,255
Additions, pending the determination of proved reserves	10,779	12,666	16,637
Transferred to oil and gas properties based on the determination of proved reserves	(3,687)	(6,208)	(6,233)
Dry hole costs written off	(4,924)	(5,332)	(5,597)
At end of year	11,129	12,255	17,062

The above disclosure did not include amounts that were capitalized and subsequently expensed in the same year.

Aging of capitalized exploratory well costs based on the date the drilling was completed are analyzed as follows:

	2020 RMB	December 31, 2021 RMB	2022 RMB
One year or less	10,586	11,168	14,879
Over one year	543	1,087	2,183
	11,129	12,255	17,062

Capitalized exploratory wells costs aged over one year are related to wells for which the drilling results are being further evaluated or the development plans are being formulated.

The geological and geophysical costs paid during the years ended December 31, 2020, 2021 and 2022 amounted to RMB 3,166, RMB 4,174 and RMB 3,478, respectively.

20. RIGHT-OF-USE ASSETS

	Land RMB	Others RMB	Total RMB
Cost:			
Balance as at January 1, 2021	253,355	40,701	294,056
Additions	13,263	9,650	22,913
Decreases	(2,862)	(3,430)	(6,292)
Balance as at December 31, 2021	263,756	46,921	310,677
Balance as at January 1, 2022	263,756	46,921	310,677
Additions	10,981	9,108	20,089
Decreases	(5,610)	(4,229)	(9,839)
Balance as at December 31, 2022	269,127	51,800	320,927
Accumulated depreciation:			
Balance as at January 1, 2021	17,563	10,481	28,044
Additions	9,966	6,863	16,829
Decreases	(407)	(2,197)	(2,604)
Balance as at December 31, 2021	27,122	15,147	42,269
Balance as at January 1, 2022	27,122	15,147	42,269
Additions	10,045	7,519	17,564
Decreases	(1,903)	(1,859)	(3,762)
Balance as at December 31, 2022	35,264	20,807	56,071
Net book value:			
Balance as at January 1, 2021	235,792	30,220	266,012
Balance as at December 31, 2021	236,634	31,774	268,408
Balance as at December 31, 2022	233,863	30,993	264,856

21. GOODWILL

	December 31,	
	2021 RMB	2022 RMB
Cost	16,455	14,325
Less: Accumulated impairment losses	(7,861)	(7,861)
	<u>8,594</u>	<u>6,464</u>

21. GOODWILL (Continued)

Impairment tests for cash-generating units containing goodwill

Goodwill is allocated to the following Group's cash-generating units:

		December 31,	
		2021	2022
		RMB	RMB
	PRINCIPAL ACTIVITIES		
Sinopec Zhenhai Refining and Chemical Branch	Manufacturing of intermediate petrochemical products and petroleum products	4,043	4,043
Sinopec Beijing Yanshan Petrochemical Branch	Manufacturing of intermediate petrochemical products and petroleum products	1,004	1,004
Shanghai SECCO	Production and sale of petrochemical products	2,541	—
Other units without individually significant goodwill		1,006	1,417
		<u>8,594</u>	<u>6,464</u>

Goodwill represents the excess of the cost of purchase over the fair value of the underlying assets and liabilities. The recoverable amounts of the above cash-generating units are determined based on value in use calculations. These calculations use cash flow projections based on financial budgets approved by management. The pre-tax discount rates reflect specific risks relating to the cash generating unit. For impairment test of the goodwill, the pre-tax discount rates ranged 11.4% to 11.7% and 10.1% to 12.2% for the years ended December 31, 2021 and 2022 were used by management, respectively. Based on the estimated recoverable amount, no major impairment loss was recognized for the year ended December 31, 2022.

Key assumptions used for cash flow forecasts for these cash generating units are the sales volume and gross margin. The sales volume was based on the production capacity and/or the sales volume in the period immediately before the budget period. The sales price was based on the future trend of the prices of crude oil and petrochemical products. The budgeted gross margin was based on the gross margin achieved in the period immediately before the budget period.

22. INTEREST IN ASSOCIATES

The Group's investments in associates are with companies primarily engaged in the oil and gas, petrochemical, and marketing and distribution operations in the PRC.

The Group's principal associates are as follows:

Name of company	Form of business structure	Particulars of issued and paid up capital	Percentage of equity held by the Company %	Percentage of equity held by the Company's subsidiaries %	Principal activities	Country of incorporation	Principal place of business
China Oil & Gas Pipeline Network Corporation ("PipeChina") (i)	Incorporated	Registered capital RMB 500,000 million	9.42	4.58	Operation of oil and natural gas pipeline and auxiliary facilities	PRC	PRC
Sinopec Finance Company Limited ("Sinopec Finance")	Incorporated	Registered capital RMB 18,000 million	49.00	—	Provision of non-banking financial services	PRC	PRC
Sinopec Capital Co., Ltd. ("Sinopec Capital")	Incorporated	Registered capital RMB 10,000 million	49.00	—	Project and equity investment, investment management, consulting, self-owned equity management	PRC	PRC
Zhongtian Synergetic Energy Company Limited ("Zhongtian Synergetic Energy")	Incorporated	Registered capital RMB 17,516 million	—	38.75	Mining coal and manufacturing of coal-chemical products	PRC	PRC
Caspian Investments Resources Ltd. ("CIR")	Incorporated	Registered capital USD 10,002	—	50.00	Crude oil and natural gas extraction	British Virgin Islands	The Republic of Kazakhstan

Summarized financial information and reconciliation to their carrying amounts in respect of the Group's principal associates:

	PipeChina December 31.		Sinopec Finance December 31.		Sinopec Capital December 31.		Zhongtian Synergetic Energy December 31.		CIR December 31.	
	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022
	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB
Current assets	86,335	104,889	194,458	212,850	13,140	14,444	3,532	3,212	576	885
Non-current assets	768,161	816,301	55,086	57,394	102	249	51,331	51,035	870	1,106
Current liabilities	(136,150)	(132,266)	(217,987)	(236,840)	(28)	(101)	(8,577)	(3,811)	(822)	(714)
Non-current liabilities	(103,243)	(199,675)	(602)	(673)	(676)	(990)	(22,216)	(23,435)	(144)	(138)
Net assets	615,103	589,249	30,955	32,731	12,538	13,602	24,070	27,001	480	1,139
Net assets attributable to owners of the Company	526,241	525,235	30,955	32,731	12,538	13,602	24,070	27,001	480	1,139
Net assets attributable to non-controlling interests	88,862	64,014	—	—	—	—	—	—	—	—
Share of net assets from associates	73,674	73,533	15,168	16,038	6,144	6,665	9,327	10,463	240	570
Carrying Amounts	73,674	73,533	15,168	16,038	6,144	6,665	9,327	10,463	240	570

Summarized statement of comprehensive income

Year ended	PipeChina(ii)			Sinopec Finance			Sinopec Capital			Zhongtian Synergetic Energy			CIR		
December 31	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB
Operating revenues	22,766	101,572	112,832	4,742	5,177	5,636	2	2	5	11,707	16,959	17,551	1,252	1,826	2,090
Net income for the year	6,444	29,776	31,908	2,027	2,168	2,338	1,278	990	1,281	551	4,184	4,562	181	461	574
Other comprehensive income	—	2	—	(372)	26	89	—	—	(68)	—	—	—	(308)	3	85
Total comprehensive income	6,444	29,778	31,908	1,655	2,194	2,427	1,278	990	1,213	551	4,184	4,562	(127)	464	659
Dividends declared by associates	—	442	2,019	—	490	319	—	—	73	284	86	632	2,517	1,152	—
Share of net income from associates	709	3,205	3,670	993	1,062	1,145	626	485	627	214	1,621	1,768	91	231	287
Share of other comprehensive income from associates (iii)	—	—	—	(182)	13	44	—	—	(33)	—	—	—	(154)	2	43

The share of net income for years ended December 31, 2020, 2021 and 2022 in all individually immaterial associates accounted for using equity method in aggregate were RMB 3,444, RMB 7,283 and 6,844, respectively.

The share of other comprehensive income for the years ended December 31, 2020, 2021 and 2022 in all individually immaterial associates accounted for using equity method in aggregate were a loss of RMB 1,101, a profit of RMB 271 and a loss of RMB 244, respectively.

22. INTEREST IN ASSOCIATES (Continued)

The carrying amount as at December 31, 2021 and 2022 of all individually immaterial associates accounted for using equity method in aggregate were RMB 44,176 and RMB 51,881, respectively.

Notes:

- (i) The Group has a member in the Board of Directors of PipeChina. According to the structure and the resolution mechanism of the Board of Directors, the Group can exercise significant influence on PipeChina.
- (ii) The summarized statement of comprehensive income for the year 2020 presents the operating results from the date when the Group can exercise significant influence on PipeChina to December 31, 2020.
- (iii) Including foreign currency translation differences.

23. INTEREST IN JOINT VENTURES

The Group's principal interests in joint ventures which are incorporated companies are as follows:

Name of company	Country of incorporation	Particulars of issued and paid up capital	Percentage of equity held by the Company	Percentage of equity held by the Company's subsidiaries	Principal activities	Principal place of business
Fujian Refining & Petrochemical Company Limited ("FREPC")	PRC	Registered capital RMB 14,758 million	—	50.00	Manufacturing refining oil products	PRC
BASF-YPC Company Limited ("BASF-YPC")	PRC	Registered capital RMB 12,704 million	30.00	10.00	Manufacturing and distribution of petrochemical products	PRC
Taihu Limited ("Taihu")	Cyprus	Registered capital USD 25,000	—	49.00	Crude oil and natural gas extraction	Russia
Sinopec SABIC Tianjin Petrochemical Company Limited ("Sinopec SABIC Tianjin")	PRC	Registered capital RMB 10,520 million	—	50.00	Manufacturing and distribution of petrochemical products	PRC
Shanghai SECCO	PRC	Registered capital RMB 3,115 million	15.00	35.00	Manufacturing and distribution of petrochemical products	PRC

Summarized balance sheet and reconciliation to their carrying amounts in respect of the Group's principal joint ventures:

	FREPC December 31,		BASF-YPC December 31,		Taihu December 31,		Sinopec SABIC Tianjin December 31,		Shanghai SECCO* December 31,
	2021 RMB	2022 RMB	2021 RMB	2022 RMB	2021 RMB	2022 RMB	2021 RMB	2022 RMB	2022 RMB
Current assets									
Cash and cash equivalents	6,562	3,733	5,375	3,061	1,258	1,625	4,820	4,506	1,323
Other current assets	9,217	11,311	6,953	5,993	2,188	15,269	3,437	2,554	3,647
Total current assets	15,779	15,044	12,328	9,054	3,446	16,894	8,257	7,060	4,970
Non-current assets	13,744	12,708	9,336	9,244	14,032	10,488	18,835	18,466	26,677
Current liabilities									
Current financial liabilities	(1,177)	(829)	(77)	(63)	(32)	(55)	(597)	(2,950)	(6,609)
Other current liabilities	(5,008)	(9,951)	(2,546)	(2,245)	(1,931)	(2,727)	(3,547)	(3,282)	(2,368)
Total current liabilities	(6,185)	(10,780)	(2,623)	(2,308)	(1,963)	(2,782)	(4,144)	(6,232)	(8,977)
Non-current liabilities									
Non-current financial liabilities	(6,857)	(3,742)	—	—	(85)	(157)	(7,599)	(6,393)	—
Other non-current liabilities	(242)	(237)	(92)	(107)	(1,439)	(1,852)	(382)	(635)	(944)
Total non-current liabilities	(7,099)	(3,979)	(92)	(107)	(1,524)	(2,009)	(7,981)	(7,028)	(944)
Net assets	16,239	12,993	18,949	15,883	13,991	22,591	14,967	12,266	21,726
Net assets attributable to owners of the Company	16,239	12,993	18,949	15,883	13,523	21,941	14,967	12,266	21,726
Net assets attributable to non-controlling interests	—	—	—	—	468	650	—	—	—
Share of net assets from joint ventures	8,120	6,497	7,580	6,353	6,626	10,751	7,484	6,133	10,863
Carrying Amounts	8,120	6,497	7,580	6,353	6,626	10,751	7,484	6,133	10,863

23. INTEREST IN JOINT VENTURES (Continued)

Summarized statement of comprehensive income

Year ended December 31,	FREP			BASF-YPC			Taihu			Sinopec SABIC Tianjin		
	2020 RMB	2021 RMB	2022 RMB	2020 RMB	2021 RMB	2022 RMB	2020 RMB	2021 RMB	2022 RMB	2020 RMB	2021 RMB	2022 RMB
Operating revenues	38,691	47,224	59,347	15,701	27,499	25,076	9,528	15,190	19,542	14,881	24,631	24,294
Depreciation, depletion and amortization	(2,222)	(2,789)	(1,822)	(1,244)	(1,467)	(1,431)	(541)	(667)	(882)	(1,085)	(1,164)	(1,270)
Interest income	118	147	107	27	52	116	291	451	975	183	209	144
Interest expense	(535)	(411)	(338)	(16)	(5)	(7)	(20)	(107)	(274)	(131)	(89)	(111)
Earning/(loss) before income tax	520	2,261	(2,004)	1,518	8,218	3,542	2,304	2,864	1,657	954	1,393	(2,396)
Income tax expense	(87)	(597)	578	(379)	(2,054)	(885)	(378)	(601)	(201)	(236)	(407)	603
Net income/(loss) for the year	433	1,664	(1,426)	1,139	6,164	2,657	1,926	2,263	1,456	718	986	(1,793)
Other comprehensive income	—	—	—	—	—	—	(3,368)	(123)	7,144	—	—	—
Total comprehensive income	433	1,664	(1,426)	1,139	6,164	2,657	(1,442)	2,140	8,600	718	986	(1,793)
Dividends declared by joint ventures	300	128	910	691	454	2,462	—	—	—	—	500	454
Share of net income/(loss) from joint ventures	217	832	(713)	456	2,466	1,063	911	1,081	703	359	493	(897)
Share of other comprehensive income from joint ventures (i)	—	—	—	—	—	—	(1,593)	(60)	3,422	—	—	—

* The share of net income and other comprehensive income for the period from 29 December 2022 to 31 December 2022 from Shanghai SECCO was immaterial.

The share of net income for the years ended December 31, 2020, 2021 and 2022 in all individually immaterial joint ventures accounted for using equity method in aggregate were a profit of RMB 993, a profit of RMB 4,494 and a loss of RMB 18, respectively.

The share of other comprehensive income for the years ended December 31, 2020, 2021 and 2022 in all individually immaterial joint ventures accounted for using equity method in aggregate were a profit of RMB 808, a profit of RMB 215 and a loss of RMB 376, respectively.

The carrying amount as at December 31, 2021 and 2022 of all individually immaterial joint ventures accounted for using equity method in aggregate were RMB 30,640 and RMB 34,194, respectively.

Note:

(i) Including foreign currency translation differences.

24. FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME

	December 31,	
	2021 RMB	2022 RMB
Non-current assets		
Unlisted equity instruments	588	616
Listed equity instruments	179	114
Current assets		
Trade accounts receivable and bills receivable (i)	5,939	3,507
	6,706	4,237

Note:

(i) As at December 31, 2021 and 2022, bills receivable and certain trade accounts receivable were classified as financial assets at fair value through other comprehensive income, as relevant business model is achieved both by collecting contractual cash flows and selling of these assets.

25. DEFERRED TAX ASSETS AND LIABILITIES

Deferred tax assets and liabilities before offset are attributable to the items detailed in the table below:

	Assets December 31,		Liabilities December 31,	
	2021 RMB	2022 RMB	2021 RMB	2022 RMB
Receivables and inventories	3,763	4,271	—	(17)
Payables	2,858	3,091	—	—
Cash flow hedges	258	85	(2,709)	(736)
Property, plant and equipment	16,777	15,714	(15,037)	(16,519)
Tax losses carried forward	4,749	4,643	—	—
Financial assets at fair value through other comprehensive income	127	131	(9)	(6)
Intangible assets	1,008	1,067	(492)	(85)
Others	1,056	1,395	(870)	(1,161)
Deferred tax assets/(liabilities)	<u>30,596</u>	<u>30,397</u>	<u>(19,117)</u>	<u>(18,524)</u>

The offsetting amount between deferred tax assets and liabilities are as follows:

	December 31,	
	2021 RMB	2022 RMB
Deferred tax assets	11,207	10,445
Deferred tax liabilities	11,207	10,445

Deferred tax assets and liabilities after the offsetting adjustments are as follows:

	December 31,	
	2021 RMB	2022 RMB
Deferred tax assets	19,389	19,952
Deferred tax liabilities	7,910	8,079

25. DEFERRED TAX ASSETS AND LIABILITIES (Continued)

As at December 31, 2021 and 2022, certain subsidiaries of the Company did not recognize deferred tax of deductible loss carried forward of RMB 18,342 and RMB 21,268, respectively, of which RMB 5,564 and RMB 8,972 were incurred for the years ended December 31, 2021 and 2022, respectively, because it was not probable that the future taxable profits will be available. These deductible losses carried forward of RMB 1,875, RMB 1,669, RMB 3,442, RMB 5,310 and RMB 8,972 will expire in 2023, 2024, 2025, 2026, 2027 and after, respectively.

Periodically, management performed assessment on the probability that future taxable profit will be available over the period which the deferred tax assets can be realized or utilized. In assessing the probability, both positive and negative evidence was considered, including whether it is probable that the operations will have sufficient future taxable profits over the periods which the deferred tax assets are deductible or utilized and whether the tax losses result from identifiable causes which are unlikely to recur.

Movements in the deferred tax assets and liabilities are as follows:

	Balance as at January 1, 2020 RMB	Recognized in consolidated income statement RMB	Recognized in other comprehensive income RMB	Others RMB	Transferred from reserve RMB	Balance as at December 31, 2020 RMB
Receivables and inventories	2,546	(122)	(12)	(1)	—	2,411
Payables	1,142	144	—	—	—	1,286
Cash flow hedges	(268)	(42)	(2,316)	—	(4)	(2,630)
Property, plant and equipment	4,146	(2,244)	127	349	—	2,378
Tax losses carried forward	3,594	9,960	(84)	(148)	—	13,322
Financial assets at fair value through other comprehensive income	124	(4)	(4)	—	—	116
Intangible assets	87	19	—	246	—	352
Others	(564)	162	24	73	—	(305)
Net deferred tax assets/(liabilities)	10,807	7,873	(2,265)	519	(4)	16,930

	Balance as at January 1, 2021 RMB	Recognized in consolidated income statement RMB	Recognized in other comprehensive income RMB	Others RMB	Transferred from reserve RMB	Balance as at December 31, 2021 RMB
Receivables and inventories	2,411	1,378	(26)	—	—	3,763
Payables	1,286	1,572	—	—	—	2,858
Cash flow hedges	(2,630)	(203)	(5,499)	—	5,881	(2,451)
Property, plant and equipment	2,378	(1,004)	41	325	—	1,740
Tax losses carried forward	13,322	(8,554)	(19)	—	—	4,749
Financial assets at fair value through other comprehensive income	116	—	2	—	—	118
Intangible assets	352	63	—	101	—	516
Others	(305)	490	(3)	4	—	186
Net deferred tax assets/(liabilities)	16,930	(6,258)	(5,504)	430	5,881	11,479

	Balance as at January 1, 2022 RMB	Recognized in consolidated income statement RMB	Recognized in other comprehensive income RMB	Others RMB	Transferred from reserve RMB	Balance as at December 31, 2022 RMB
Receivables and inventories	3,763	514	—	(23)	—	4,254
Payables	2,858	233	—	—	—	3,091
Cash flow hedges	(2,451)	203	(3,157)	(13)	4,767	(651)
Property, plant and equipment	1,740	(3,341)	—	796	—	(805)
Tax losses carried forward	4,749	525	—	(631)	—	4,643
Financial assets at fair value through other comprehensive income	118	(5)	12	—	—	125
Intangible assets	516	80	—	386	—	982
Others	186	73	—	(25)	—	234
Net deferred tax assets/(liabilities)	11,479	(1,718)	(3,145)	490	4,767	11,873

26. LONG-TERM PREPAYMENTS AND OTHER ASSETS

	December 31,	
	2021 RMB	2022 RMB
Operating rights of service stations	29,714	28,009
Long-term receivables from and prepayment to Sinopec Group Company and fellow subsidiaries	1,520	3,235
Prepayments for construction projects to third parties	7,470	7,505
Others (i)	31,326	34,063
	<u>70,030</u>	<u>72,812</u>

Note:

(i) Others mainly comprise catalyst expenditures and improvement expenditures of property, plant and equipment.

The cost of operating rights of service stations is charged to expense on a straight-line basis over the respective periods of the rights. The movement of operating rights of service stations is as follows:

	2021 RMB	2022 RMB
Operating rights of service stations		
Cost:		
Balance as at January 1	53,567	53,791
Additions	912	880
Decreases	(688)	(541)
Balance as at December 31	<u>53,791</u>	<u>54,130</u>
Accumulated amortization:		
Balance as at January 1	21,711	24,077
Additions	2,699	2,301
Decreases	(333)	(257)
Balance as at December 31	<u>24,077</u>	<u>26,121</u>
Net book value as at December 31	<u>29,714</u>	<u>28,009</u>

27. SHORT-TERM AND LONG-TERM DEBTS AND LOANS FROM SINOPEC GROUP COMPANY AND FELLOW SUBSIDIARIES

Short-term debts represent:

	December 31,	
	2021 RMB	2022 RMB
Third parties' debts		
Short-term bank loans	24,959	14,461
RMB denominated	24,959	14,325
USD denominated	—	136
Current portion of long-term bank loans	3,293	13,876
RMB denominated	3,281	13,875
USD denominated	12	1
Current portion of long-term corporate bonds	7,000	30,700
RMB denominated	7,000	30,700
	35,252	59,037
Loans from Sinopec Group Company and fellow subsidiaries		
Short-term loans	2,407	6,852
RMB denominated	1,320	5,911
USD denominated	934	906
European Dollar ("EUR") denominated	153	35
Current portion of long-term loans	466	440
RMB denominated	466	440
	2,873	7,292
	38,125	66,329

The Group's weighted average interest rates on short-term loans were 2.72% and 2.63% per annum as at December 31, 2021 and 2022, respectively. The above borrowings are unsecured.

27. SHORT-TERM AND LONG-TERM DEBTS AND LOANS FROM SINOPEC GROUP COMPANY AND FELLOW SUBSIDIARIES

(Continued)

Long-term debts represent:

		December 31,	
		2021	2022
		RMB	RMB
Third parties' debts			
Long-term bank loans			
RMB denominated	Interest rates ranging from 1.00% to 4.66% per annum as at December 31, 2022 with maturities through 2040	38,880	86,532
USD denominated	Interest rates at 0.00% per annum as at December 31, 2022 with maturities through 2038	64	53
		<u>38,944</u>	<u>86,585</u>
Corporate bonds			
RMB denominated	Fixed interest rates ranging from 2.20% to 3.20% per annum as at December 31, 2022 with maturities through 2026	38,522	31,534
USD denominated	Fixed interest rates ranging from 3.13 % to 4.25 % per annum as at December 31, 2022 with maturities through 2043	11,127	12,163
		<u>49,649</u>	<u>43,697</u>
Total third parties' long-term debts		<u>88,593</u>	<u>130,282</u>
Less: Current portion		<u>(10,293)</u>	<u>(44,576)</u>
		<u>78,300</u>	<u>85,706</u>
Long-term loans from Sinopec Group Company and fellow subsidiaries			
RMB denominated	Interest rates ranging from 1.08% to 5.23% per annum as at December 31, 2022 with maturities through 2037	12,988	22,695
USD denominated	Interest rates at 1.65% per annum as at December 31, 2022 with maturities in 2027	1,168	—
Less: Current portion		<u>(466)</u>	<u>(440)</u>
		<u>13,690</u>	<u>22,255</u>
		<u>91,990</u>	<u>107,961</u>

Short-term and long-term bank loans, short-term other loans and loans from Sinopec Group Company and fellow subsidiaries are primarily unsecured and carried at amortized cost.

28. LEASE LIABILITIES

	December 31,	
	2021	2022
	RMB	RMB
Lease liabilities		
Current	15,173	16,004
Non-current	170,233	166,407
	<u>185,406</u>	<u>182,411</u>

29. TRADE ACCOUNTS PAYABLE AND BILLS PAYABLE

	December 31,	
	2021 RMB	2022 RMB
Amounts due to third parties	193,547	224,994
Amounts due to Sinopec Group Company and fellow subsidiaries	4,227	25,358
Amounts due to associates and joint ventures	6,145	8,290
	203,919	258,642
Bills payable	11,721	10,782
Trade accounts payable and bills payable measured at amortized cost	215,640	269,424

30. CONTRACT LIABILITIES

As at December 31, 2021 and 2022, the Group's contract liabilities primarily represent advances from customers. Related performance obligations are expected to be satisfied and revenue is recognized within one year.

31. OTHER PAYABLES

	December 31,	
	2021 RMB	2022 RMB
Salaries and welfare payable	14,048	13,617
Interest payable	822	549
Payables for constructions	54,596	68,492
Other payables	93,764	71,833
Taxes other than income tax	76,458	23,655
	239,688	178,146

32. PROVISIONS

Provisions primarily represent provision for future dismantlement costs of oil and gas properties. The Group has mainly committed to the PRC government to establish certain standardized measures for the dismantlement of its oil and gas properties by making reference to the industry practices and is thereafter constructively obligated to take dismantlement measures of its oil and gas properties.

Movement of provision of the Group's obligations for the dismantlement of its oil and gas properties is as follows:

	2020 RMB	2021 RMB	2022 RMB
Balance as at January 1	42,438	43,713	40,495
Provision for the year	1,563	2,163	4,277
Accretion expenses	1,343	1,135	1,103
Decrease for the year	(1,490)	(6,435)	(2,438)
Exchange adjustments	(141)	(81)	162
Balance as at December 31	43,713	40,495	43,599

33. SHARE CAPITAL

	December 31,	
	2021 RMB	2022 RMB
Registered, issued and fully paid		
95,115,471,046 listed A shares (2021: 95,557,771,046) of RMB 1.00 each	95,558	95,115
24,780,936,600 listed H shares (2021: 25,513,438,600) of RMB 1.00 each	25,513	24,781
	<u>121,071</u>	<u>119,896</u>

The Company was established on February 25, 2000 with a registered capital of 68.8 billion domestic state-owned shares with a par value of RMB 1.00 each. Such shares were issued to Sinopec Group Company in consideration for the assets and liabilities transferred to the Company (Note 1).

Pursuant to the resolutions passed at an Extraordinary General Meeting held on July 25, 2000 and approvals from relevant government authorities, the Company is authorized to increase its share capital to a maximum of 88.3 billion shares with a par value of RMB 1.00 each and offer not more than 19.5 billion shares with a par value of RMB 1.00 each to investors outside the PRC. Sinopec Group Company is authorized to offer not more than 3.5 billion shares of its shareholdings in the Company to investors outside the PRC. The shares sold by Sinopec Group Company to investors outside the PRC would be converted into H shares.

In October 2000, the Company issued 15,102,439,000 H shares with a par value of RMB 1.00 each, representing 12,521,864,000 H shares and 25,805,750 American Depositary Shares (“ADSs”, each representing 100 H shares), at prices of HKD 1.59 per H share and USD 20.645 per ADS, respectively, by way of a global initial public offering to Hong Kong and overseas investors. As part of the global initial public offering, 1,678,049,000 state-owned ordinary shares of RMB 1.00 each owned by Sinopec Group Company were converted into H shares and sold to Hong Kong and overseas investors.

In July 2001, the Company issued 2.8 billion listed A shares with a par value of RMB 1.00 each at RMB 4.22 by way of a public offering to natural persons and institutional investors in the PRC.

During the year ended December 31, 2010, the Company issued 88,774 listed A shares with a par value of RMB 1.00 each, as a result of exercise of 188,292 warrants entitled to the Bonds with Warrants.

During the year ended December 31, 2011, the Company issued 34,662 listed A shares with a par value of RMB 1.00 each, as a result of conversion by the holders of the 2011 Convertible Bonds.

During the year ended December 31, 2012, the Company issued 117,724,450 listed A shares with a par value of RMB 1.00 each, as a result of conversion by the holders of the 2011 Convertible Bonds.

On February 14, 2013, the Company issued 2,845,234,000 listed H shares (“the Placing”) with a par value of RMB 1.00 each at the Placing Price of HKD 8.45 per share. The aggregate gross proceeds from the Placing amounted to approximately HKD 24,042,227,300.00 and the aggregate net proceeds (after deduction of the commissions and estimated expenses) amounted to approximately HKD 23,970,100,618.00.

In June 2013, the Company issued 21,011,962,225 listed A shares and 5,887,716,600 listed H shares as a result of bonus issues of 2 shares converted from the retained earnings, and 1 share transferred from the share premium for every 10 existing shares.

During the year ended December 31, 2013, the Company issued 114,076 listed A shares with a par value of RMB 1.00 each, as a result of exercise of conversion by the holders of the 2011 Convertible Bonds.

During the year ended December 31, 2014, the Company issued 1,715,081,853 listed A shares with a par value of RMB 1.00 each, as a result of exercise of conversion by the holders of the 2011 Convertible Bonds.

During the year ended December 31, 2015, the Company issued 2,790,814,006 listed A shares with a par value of RMB 1.00 each, as a result of exercise of conversion by the holders of the 2011 Convertible Bonds.

During the year ended 31 December 2022, the Company repurchased 442,300,000 listed A shares and 732,502,000 listed H shares respectively, which had been cancelled in the year ended 31 December 2022.

All A shares and H shares rank pari passu in all material aspects.

33. SHARE CAPITAL (Continued)**Capital management**

Management optimizes the structure of the Group's capital, which comprises of equity, debts and bonds. In order to maintain or adjust the capital structure of the Group, management may cause the Group to issue new shares, adjust the capital expenditure plan, sell assets to reduce debt, or adjust the proportion of short-term and long-term loans and bonds. Management monitors capital on the basis of the debt-to-capital ratio, which is calculated by dividing long-term loans (excluding current portion) and debentures payable, including long-term debts and loans from Sinopec Group Company and fellow subsidiaries, by the total of equity attributable to owners of the Company and long-term loans (excluding current portion) and debentures payable, and liability-to-asset ratio, which is calculated by dividing total liabilities by total assets. Management's strategy is to make appropriate adjustments according to the Group's operating and investment needs and the changes of market conditions, and to maintain the debt-to-capital ratio and the liability-to-asset ratio of the Group at a range considered reasonable. The debt-to-capital ratio of the Group was 10.6% and 12.1% as at December 31, 2021 and 2022, respectively. The liability-to-asset ratio of the Group was 51.6% and 52.0% as at December 31, 2021 and 2022, respectively.

The schedule of the contractual maturities of loans and commitments are disclosed in Notes 27 and 34, respectively.

There were no changes in the management's approach to capital management of the Group during the year. Neither the Company nor any of its subsidiaries is subject to externally imposed capital requirements.

34. COMMITMENTS AND CONTINGENT LIABILITIES***Capital commitments***

As at December 31, 2021 and 2022, the capital commitments of the Group are as follows:

	December 31,	
	2021 RMB	2022 RMB
Authorized and contracted for (i)	184,430	167,507
Authorized but not contracted for	90,227	94,407
	<u>274,657</u>	<u>261,914</u>

These capital commitments relate to oil and gas exploration and development, refining and petrochemical production capacity expansion projects, the construction of service stations and oil depots and investment commitments.

Note:

- (i) The investment commitments as at December 31, 2021 and 2022 of the Group were RMB 3,648 and RMB 1,751, respectively.

Commitments to joint ventures

Pursuant to certain of the joint venture agreements entered into by the Group, the Group is obliged to purchase products from the joint ventures based on market prices.

34. COMMITMENTS AND CONTINGENT LIABILITIES (Continued)

Exploration and production licenses

Exploration licenses for exploration activities are registered with the Ministry of Natural Resources. The maximum term of the Group's exploration licenses is 7 years, and may be renewed twice within 30 days prior to expiration of the original term with each renewal being for a two-year term. The Group is obligated to make progressive annual minimum exploration investment relating to the exploration blocks in respect of which the license is issued. The Ministry of Natural Resources also issues production licenses to the Group on the basis of the reserve reports approved by relevant authorities. The maximum term of a full production license is 30 years unless a special dispensation is given by the State Council. The maximum term of production licenses issued to the Group is 80 years as a special dispensation was given to the Group by the State Council. The Group's production license is renewable upon application by the Group 30 days prior to expiration.

The Group is required to make payments of exploration license fees and production right usage fees to the Ministry of Natural Resources annually which are expensed. Expenses recognized were approximately RMB 231, RMB 181 and RMB 270 for the years ended December 31, 2020, 2021 and 2022, respectively.

Estimated future annual payments are as follows:

	December 31,	
	2021 RMB	2022 RMB
Within one year	301	369
Between one and two years	112	152
Between two and three years	110	146
Between three and four years	102	115
Between four and five years	64	62
Thereafter	846	857
	<u>1,535</u>	<u>1,701</u>

Contingent liabilities

As at December 31, 2021 and 2022, the guarantees by the Group in respect of facilities granted to the parties below are as follows:

	December 31,	
	2021 RMB	2022 RMB
Joint ventures (ii)	9,117	8,927
Associates (iii)	5,746	—
	<u>14,863</u>	<u>8,927</u>

Management monitors the risk that the specified debtor will default on the contract and recognizes a provision when ECLs on the financial guarantees are determined to be higher than the carrying amount in respect of the guarantees. At 31 December 2021 and 2022, the Group estimates that there is no material liability having been accrued for ECLs related to the Group's obligation under these guarantee arrangements.

Notes:

- (ii) As at December 31, 2021 and 2022, the Group provided a guarantee in respect to standby credit facilities granted to Zhongan United Coal Chemical Co., Ltd. ("Zhongan United") by banks amounting to RMB 7,100 and RMB 7,100. As at December 31, 2021 and 2022, the amount withdrawn (The portion corresponding to the shareholding ratio of the Group) by Zhongan United from banks and guaranteed by the Group was RMB 5,680 and RMB 5,254. As at December 31, 2021 and 2022, the Group provided a guarantee in respect to standby credit facilities granted to Amur Gas Chemical Complex Limited Liability Company ("Amur Gas") by banks amounting to RMB 23,208 and RMB 25,351. As at December 31, 2021 and 2022 the amount withdrawn (the portion corresponding to the shareholding ratio of the Group) by Amur Gas from banks and guaranteed by the Group was RMB 3,264 and RMB 3,673.

34. COMMITMENTS AND CONTINGENT LIABILITIES (Continued)

Contingent liabilities (Continued)

Notes: (Continued)

As at December 31, 2021 and 2022, the Group provided a guarantee in respect to payment obligation under the raw material supply agreement of Amur Gas amount to RMB 15,493 and RMB 16,924. As at December 31, 2021 and 2022, Amur Gas has not yet incurred the relevant payment obligations and therefore the Group has no guarantee amount.

The Group provided a guarantee in respect the engineering services agreement of Amur Gas. As at December 31, 2022, the engineering services agreement was terminated, accordingly the guarantee agreement was terminated.

- (iii) The Group provided a guarantee in respect to standby credit facilities granted to Zhongtian Synergetic Energy by banks amounting to RMB 17,050. As at December 31, 2021, the amount withdrawn (the portion corresponding to the shareholding ratio of the Group) by Zhongtian Synergetic Energy and guaranteed by the Group was RMB 5,746. During the year ended December 31, 2022, the guarantee provided by the Group was terminated.

Environmental contingencies

Under existing legislation, management believes that there are no probable liabilities that will have a material adverse effect on the financial position or operating results of the Group. The PRC government, however, has moved, and may move further towards more rigorous enforcement of applicable laws, and towards the adoption of more stringent environmental standards. Environmental liabilities are subject to considerable uncertainties which affect management's ability to estimate the ultimate cost of remediation efforts. These uncertainties include i) the exact nature and extent of the contamination at various sites including, but not limited to refineries, oil fields, service stations, terminals and land development areas, whether operating, closed or sold, ii) the extent of required cleanup efforts, iii) varying costs of alternative remediation strategies, iv) changes in environmental remediation requirements, and v) the identification of new remediation sites. The amount of such future cost is indeterminable due to such factors as the unknown magnitude of possible contamination and the unknown timing and extent of the corrective actions that may be required. Accordingly, the outcome of environmental liabilities under proposed or future environmental legislation cannot reasonably be estimated at present, and could be material.

The Group paid normal routine pollutant discharge fees of approximately RMB 11,368, RMB 10,968 and RMB 16,823 in the consolidated financial statements for the years ended December 31, 2020, 2021 and 2022, respectively.

Legal contingencies

The Group is a defendant in certain lawsuits as well as the named party in other proceedings arising in the ordinary course of business. Management has assessed the likelihood of an unfavorable outcome of such contingencies, lawsuits or other proceedings and believes that any resulting liabilities will not have a material adverse effect on the financial position, operating results or cash flows of the Group.

35. BUSINESS COMBINATIONS

Pursuant to resolution passed at the Director's meeting on 26 March 2021, the Company entered into agreements with Sinopec Assets Management Corporation ("SAMC") and Beijing Orient Petrochemical Industry Co., Ltd. ("BJOPI"), and its subsidiary, Sinopec Beihai Refining and Chemical Limited Liability Company entered into an agreement with Beihai Petrochemical Limited Liability Company of Sinopec Group ("BHP"). According to the relevant agreements, the Company proposed to acquire non equity assets such as the polypropylene devices and utility business assets of Cangzhou Branch held by SAMC, organic plant business held by BJOPI, and the pier operation platform held by BHP.

Pursuant to the resolution passed at the Directors' meeting on 29 November 2021, the Company entered into agreements with SAMC, and Sinopec Beijing Yanshan Petrochemical Co., Ltd. ("SBJYSP"), and its subsidiary, Sinopec Yizheng Chemical Fibre Company Limited entered into an agreement with SAMC. According to the relevant agreements, the Group proposed to acquire non equity assets such as thermal power, water and other business, PBT resin and other business of Yizheng Branch held by SAMC, and thermal power and other businesses held by SBJYSP.

The consideration of the transaction amount to RMB 6,124.

As the Company, SAMC, BJOPI, BHP and SBJYSP are all under the control of Sinopec Group Company, the transaction described above has been accounted as business combination under common control. Accordingly, the equity and assets acquired from Sinopec Group Company have been accounted for at historical cost, and the consolidated financial statements of the Group prior to these acquisitions have been restated to include the results of operation and the assets and liabilities of Sinopec Group Company on a combined basis.

The transactions under the after-mentioned agreements will further improve the integrated operation level of the Group, optimize the allocation of resources, reduce connected transactions on the whole, so as to enhance the comprehensive competitiveness of the Group in its business locations.

36. RELATED PARTY TRANSACTIONS

Parties are considered to be related to the Group if the Group has the ability, directly or indirectly, to control or jointly control the party or exercise significant influence over the party in making financial and operating decisions, or vice versa, or where the Group and the party are subject to control or common control. Related parties may be individuals (being members of key management personnel, significant shareholders and/or their close family members) or other entities and include entities which are under the significant influence of related parties of the Group where those parties are individuals, and post-employment benefit plans which are for the benefit of employees of the Group or of any entity that is a related party of the Group.

(a) Transactions with Sinopec Group Company and fellow subsidiaries, associates and joint ventures

The Group is part of a larger group of companies under Sinopec Group Company, which is controlled by the PRC government, and has significant transactions and relationships with Sinopec Group Company and fellow subsidiaries. Because of these relationships, it is possible that the terms of these transactions are not the same as those that would result from transactions among wholly unrelated parties.

The principal related party transactions with Sinopec Group Company and fellow subsidiaries, associates and joint ventures, which were carried out in the ordinary course of business are as follows:

	Note	Years ended December 31,		
		2020 RMB	2021 RMB	2022 RMB
Sales of goods	(i)	228,307	297,381	352,691
Purchases	(ii)	151,300	191,888	184,986
Transportation and storage	(iii)	8,734	19,443	18,291
Exploration and development services	(iv)	31,444	33,930	37,317
Production related services	(v)	31,915	44,405	48,465
Ancillary and social services	(vi)	2,952	1,730	—
Agency commission income	(vii)	160	194	173
Interest income	(viii)	704	715	1,203
Interest expense	(ix)	919	385	541
Net deposits placed with related parties	(x)	(17,585)	(8,265)	(3,382)
Net funds (placed with)/obtained from related parties	(ix)	(31,144)	30,305	36,608

The amounts set out in the table above in respect of each of the years in the three-year period ended December 31 represent the relevant costs and income as determined by the corresponding contracts with the related parties.

For the years ended December 31, 2021 and 2022, no individually significant right-of-use assets were leased from Sinopec Group Company and fellow subsidiaries, associates and joint ventures by the Group. The interest expense recognized for the years ended December 31, 2021 and 2022 on lease liabilities in respect of amounts due to Sinopec Group Company and fellow subsidiaries, associates and joint ventures was RMB 7,863 and RMB 7,811.

For the years ended December 31, 2020, 2021 and 2022, the amount of rental the Group paid to Sinopec Group Company and fellow subsidiaries, associates and joint ventures for land are RMB 11,090, RMB 10,834 and RMB 11,051, respectively. For the years ended December 31, 2020, 2021 and 2022, the amount of rental the Group paid to Sinopec Group Company and fellow subsidiaries, associates and joint ventures for buildings are RMB 571, RMB 572 and RMB 943, respectively. For the years ended December 31, 2020, 2021 and 2022, the amount of rental the Group paid to Sinopec Group Company and fellow subsidiaries, associates and joint ventures for others are RMB 330, RMB 269 and RMB 352, respectively.

As at December 31, 2021 and 2022, there was no guarantee given to banks by the Group in respect of banking facilities to Sinopec Group Company and fellow subsidiaries, associates and joint ventures, except for the guarantees disclosed in Note 34. Guarantees given to banks by the Group in respect of banking facilities to associates and joint ventures are disclosed in Note 34.

36. RELATED PARTY TRANSACTIONS *(Continued)*

(a) Transactions with Sinopec Group Company and fellow subsidiaries, associates and joint ventures *(Continued)*

The directors of the Company are of the opinion that the above transactions with related parties were conducted in the ordinary course of business and on normal commercial terms or in accordance with the agreements governing such transactions, and this has been confirmed by the independent non-executive directors.

Notes:

- (i) Sales of goods represent the sale of crude oil, intermediate petrochemical products, petroleum products and ancillary materials.
- (ii) Purchases represent the purchase of materials and utility supplies directly related to the Group's operations such as the procurement of raw and ancillary materials and related services, supply of water, electricity and gas.
- (iii) Transportation and storage represent the cost for the use of railway, road and marine transportation services, pipelines, loading, unloading and storage facilities.
- (iv) Exploration and development services comprise direct costs incurred in the exploration and development such as geophysical, drilling, well testing and well measurement services.
- (v) Production related services represent ancillary services rendered in relation to the Group's operations such as equipment repair and general maintenance, insurance premium, technical research, communications, firefighting, security, product quality testing and analysis, information technology, design and engineering, construction of oilfield ground facilities, refineries and chemical plants, manufacture of replacement parts and machinery, installation, project management, environmental protection and management services.
- (vi) Ancillary and social services represent expenditures for social welfare and support services such as educational facilities, media communication services, sanitation, accommodation, canteens, and property maintenance. The term of the Cultural, Educational, Hygiene and Auxiliary Service Agreement expired on 31 December 2021, and is not renewed due to the significant decrease in the service scale after the separation and transfer of assets and business such as the Three Supplies and One Industry Assets etc. Cultural and educational services related or similar to training and auxiliary services thereunder have been incorporated into the Mutual Supply Agreement.
- (vii) Agency commission income represents commission earned for acting as an agent in respect of sales of products and purchase of materials for certain entities owned by Sinopec Group Company.
- (viii) Interest income represents interest received from deposits placed with Sinopec Finance and Sinopec Century Bright Capital Investment Limited, finance companies controlled by Sinopec Group Company. The applicable interest rate is determined in accordance with the prevailing saving deposit rate. The balance of deposits as at December 31, 2021 and 2022 were RMB 61,682 and RMB 65,064, respectively.
- (ix) Interest expense represents interest charges on the loans obtained from Sinopec Group Company and fellow subsidiaries.
- (x) The Group obtained loans, discounted bills and issued the acceptance bills from Sinopec Group Company and fellow subsidiaries.

36. RELATED PARTY TRANSACTIONS *(Continued)*

(a) Transactions with Sinopec Group Company and fellow subsidiaries, associates and joint ventures (Continued)

In connection with the Reorganization, the Company and Sinopec Group Company entered into a number of agreements under which 1) Sinopec Group Company will provide goods and products and a range of ancillary, social and supporting services to the Group and 2) the Group will sell certain goods to Sinopec Group Company. These agreements impacted the operating results of the Group for the year ended 31 December 2022. The terms of these agreements are summarized as follows:

- The Company has entered into a non-exclusive “Agreement for Mutual Provision of Products and Ancillary Services” (“Mutual Provision Agreement”) with Sinopec Group Company effective from 1 January 2000 in which Sinopec Group Company has agreed to provide the Group with certain ancillary production services, construction services, information advisory services, supply services and other services and products. While each of Sinopec Group Company and the Company is permitted to terminate the Mutual Provision Agreement upon at least six months notice, Sinopec Group Company has agreed not to terminate the agreement if the Group is unable to obtain comparable services from a third party. The pricing policy for these services and products provided by Sinopec Group Company to the Group is as follows:
 - (1) the government-prescribed price;
 - (2) where there is no government-prescribed price, the government-guidance price;
 - (3) where there is neither a government-prescribed price nor a government-guidance price, the market price; or
 - (4) where none of the above is applicable, the price to be agreed between the parties, which shall be based on a reasonable cost incurred in providing such services plus a profit margin not exceeding 6%.
- The Company has entered into a non-exclusive “Agreement for Provision of Cultural and Educational, Health Care and Community Services” with Sinopec Group Company effective from January 1, 2000 in which Sinopec Group Company has agreed to provide the Group with certain cultural, educational, health care and community services on the same pricing terms and termination conditions as described in the above Mutual Provision Agreement. The term of the Cultural, Educational, Hygiene and Auxiliary Service Agreement expired on 31 December 2021, and is not renewed due to the significant decrease in the service scale after the separation and transfer of assets and business such as the Three Supplies and One Industry Assets etc. Cultural and educational services related or similar to training and auxiliary services thereunder have been incorporated into the Mutual Supply Agreement.
- The Company has entered into a series of lease agreements with Sinopec Group Company to lease certain lands and buildings effective on January 1, 2000. The lease term is 40 or 50 years for lands and 20 years for buildings, respectively. The Company and Sinopec Group Company can renegotiate the rental amount every three years for land. The Company and Sinopec Group Company can renegotiate the rental amount for buildings every year. However such amount cannot exceed the market price as determined by an independent third party.
- The Company has entered into agreements with Sinopec Group Company effective from January 1, 2000 under which the Group has been granted the right to use certain trademarks, patents, technology and computer software developed by Sinopec Group Company.
- The Company has entered into a service stations franchise agreement with Sinopec Group Company effective from January 1, 2000 under which its service stations and retail stores would exclusively sell the refined products supplied by the Group.
- On the basis of a series of continuing connected transaction agreements signed in 2000, the Company and Sinopec Group Company have signed the Sixth Supplementary Agreement on August 27, 2021, which took effect on January 1, 2022 and made adjustment to “Mutual Supply Agreement” and “Buildings Leasing Contract”, etc.

36. RELATED PARTY TRANSACTIONS (Continued)

(a) Transactions with Sinopec Group Company and fellow subsidiaries, associates and joint ventures (Continued)

Amounts due from/to Sinopec Group Company and fellow subsidiaries, associates and joint ventures included in the following accounts captions are summarized as follows:

	December 31,	
	2021 RMB	2022 RMB
Trade accounts receivable	8,655	11,480
Financial assets at fair value through other comprehensive income	186	596
Prepaid expenses and other current assets	14,537	10,375
Long-term prepayments and other assets	3,116	8,633
Total	26,494	31,084
Trade accounts payable and bills payable	14,170	38,337
Contract liabilities	4,677	4,736
Other payables	50,649	38,312
Other long-term liabilities	2,779	5,180
Short-term loans and current portion of long-term loans from Sinopec Group Company and fellow subsidiaries	2,873	7,292
Long-term loans excluding current portion from Sinopec Group Company and fellow subsidiaries	13,690	22,255
Lease liabilities (including to be paid within one year)	158,761	156,537
Total	247,599	272,649

Amounts due from/to Sinopec Group Company and fellow subsidiaries, associates and joint ventures, other than short-term loans and long-term loans, bear no interest, are unsecured and are repayable in accordance with normal commercial terms. The terms and conditions associated with short-term loans and long-term loans payable to Sinopec Group Company and fellow subsidiaries are set out in Note 27.

As at and for the year ended December 31, 2022, and as at and for the year ended December 31, 2021, no individually significant loss allowance for ECLs were recognized in respect of amounts due from Sinopec Group Company and fellow subsidiaries, associates and joint ventures.

(b) Key management personnel emoluments

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of the Group, directly or indirectly, including directors and supervisors of the Group. The key management personnel compensation is as follows:

	Years ended December 31,		
	2020 RMB'000	2021 RMB'000	2022 RMB'000
Short-term employee benefits	5,753	4,612	9,299
Retirement scheme contributions	342	379	566
	6,095	4,991	9,865

(c) Contributions to defined contribution retirement plans

The Group participates in various defined contribution retirement plans organized by municipal and provincial governments for its staff. The details of the Group's employee benefits plan are disclosed in Note 37. As at December 31, 2021 and 2022, the accrual for the contribution to post-employment benefit plans was not material.

36. RELATED PARTY TRANSACTIONS (Continued)

(d) Transactions with other state-controlled entities in the PRC

The Group is a state-controlled energy and chemical enterprise and operates in an economic regime currently dominated by entities directly or indirectly controlled by the PRC government through its government authorities, agencies, affiliations and other organizations (collectively referred as “state-controlled entities”).

Apart from transactions with Sinopec Group Company and fellow subsidiaries, the Group has transactions with other state-controlled entities, include but not limited to the followings:

- sales and purchases of goods and ancillary materials;
- rendering and receiving services;
- lease of assets;
- depositing and borrowing money; and
- uses of public utilities.

These transactions are conducted in the ordinary course of the Group’s business on terms comparable to those with other entities that are not state-controlled.

37. EMPLOYEE BENEFITS PLAN

As stipulated by the regulations of the PRC, the Group participates in various defined contribution retirement plans organized by municipal and provincial governments for its staff. The Group is required to make contributions to the retirement plans at rates ranging from 13.0% to 16.0% of the salaries, bonuses and certain allowances of its staff. In addition, the Group provides a supplementary retirement plan for its staff at rates not exceeding 8.0% of the salaries. The Group has no other material obligation for the payment of pension benefits associated with these plans beyond the annual contributions described above. The Group’s contributions for the years ended December 31, 2020, 2021 and 2022 were RMB 8,983, RMB 11,932 and RMB 13,190, respectively.

38. SEGMENT REPORTING

Segment information is presented in respect of the Group's business segments. The format is based on the Group's management and internal reporting structure.

In a manner consistent with the way in which information is reported internally to the Group's chief operating decision maker for the purposes of resource allocation and performance assessment, the Group has identified the following five reportable segments. No operating segments have been aggregated to form the following reportable segments.

- (i) Exploration and production, which explores and develops oil fields, produces crude oil and natural gas and sells such products to the refining segment of the Group and external customers.
- (ii) Refining, which processes and purified crude oil, that is sourced from the exploration and production segment of the Group and external suppliers, and manufactures and sells petroleum products to the chemicals and marketing and distribution segments of the Group and external customers.
- (iii) Marketing and distribution, which owns and operates oil depots and service stations in the PRC, and distributes and sells refined petroleum products (mainly gasoline and diesel) in the PRC through wholesale and retail sales networks.
- (iv) Chemicals, which manufactures and sells petrochemical products, derivative petrochemical products and other chemical products mainly to external customers.
- (v) Corporate and others, which largely comprises the trading activities of the import and export companies of the Group and research and development undertaken by other subsidiaries.

The segments were determined primarily because the Group manages its exploration and production, refining, marketing and distribution, chemicals, and corporate and other businesses separately. The reportable segments are each managed separately because they manufacture and/or distribute distinct products with different production processes and due to their distinct operating and gross margin characteristics.

(1) Information of reportable segmental revenues, profits or losses, assets and liabilities

The Group's chief operating decision maker evaluates the performance and allocates resources to its operating segments on an operating profit basis, without considering the effects of finance costs or investment income. Inter-segment transfer pricing is based on the market price or cost plus an appropriate margin, as specified by the Group's policy.

Assets and liabilities dedicated to a particular segment's operations are included in that segment's total assets and liabilities. Segment assets include all tangible and intangible assets, except for interest in associates and joint ventures, investments, deferred tax assets, cash and cash equivalents, time deposits with financial institutions and other unallocated assets. Segment liabilities exclude short-term debts, income tax payable, long-term debts, loans from Sinopec Group Company and fellow subsidiaries, deferred tax liabilities and other unallocated liabilities.

38. SEGMENT REPORTING (Continued)

(1) Information of reportable segmental revenues, profits or losses, assets and liabilities (Continued)

Information of the Group's reportable segments is as follows:

	Years ended December 31,		
	2020 RMB	2021 RMB	2022 RMB
Sales of goods			
Exploration and production			
External sales	104,524	156,026	192,330
Inter-segment sales	57,513	87,298	121,912
	<u>162,037</u>	<u>243,324</u>	<u>314,242</u>
Refining			
External sales	113,214	167,948	194,839
Inter-segment sales	826,219	1,212,455	1,376,425
	<u>939,433</u>	<u>1,380,403</u>	<u>1,571,264</u>
Marketing and distribution			
External sales	1,062,447	1,367,605	1,660,924
Inter-segment sales	4,854	7,075	13,421
	<u>1,067,301</u>	<u>1,374,680</u>	<u>1,674,345</u>
Chemicals			
External sales	322,169	424,774	449,911
Inter-segment sales	40,702	70,242	80,328
	<u>362,871</u>	<u>495,016</u>	<u>530,239</u>
Corporate and others			
External sales	458,154	563,147	759,352
Inter-segment sales	430,073	732,356	1,028,800
	<u>888,227</u>	<u>1,295,503</u>	<u>1,788,152</u>
Elimination of inter-segment sales	(1,371,215)	(2,109,426)	(2,620,886)
Sales of goods	<u>2,048,654</u>	<u>2,679,500</u>	<u>3,257,356</u>
Other operating revenues			
Exploration and production	5,718	6,674	5,169
Refining	4,633	5,161	3,875
Marketing and distribution	34,905	36,864	39,529
Chemicals	8,758	10,487	9,913
Corporate and others	2,056	2,198	2,326
Other operating revenues	<u>56,070</u>	<u>61,384</u>	<u>60,812</u>
Sales of goods and other operating revenues	<u>2,104,724</u>	<u>2,740,884</u>	<u>3,318,168</u>

38. SEGMENT REPORTING (Continued)
(1) Information of reportable segmental revenues, profits or losses, assets and liabilities (Continued)

	Years ended December 31,		
	2020	2021	2022
	RMB	RMB	RMB
Result			
Operating (loss) /income			
By segment			
- Exploration and production	(16,476)	4,685	53,716
- Refining	(5,525)	65,279	12,211
- Marketing and distribution	20,828	21,204	24,537
- Chemicals	10,818	11,106	(14,127)
- Corporate and others	(393)	(3,225)	1,318
- Elimination	4,417	(4,421)	(1,820)
Total segment operating income	13,669	94,628	75,835
Share of profit/(loss) from associates and joint ventures			
- Exploration and production	2,117	2,783	2,883
- Refining	(2,516)	662	(645)
- Marketing and distribution	2,200	3,731	3,142
- Chemicals	1,723	11,323	3,365
- Corporate and others	3,188	4,754	5,734
Aggregate share of profits from associates and joint ventures	6,712	23,253	14,479
Investment income			
- Exploration and production	13,118	55	—
- Refining	14,941	(10)	35
- Marketing and distribution	8,980	3	31
- Chemicals	(61)	(54)	14,258
- Corporate and others	766	304	(264)
Aggregate investment income	37,744	298	14,060
Net finance costs	(9,510)	(9,010)	(9,974)
Earnings before income tax	48,615	109,169	94,400

38. SEGMENT REPORTING (Continued)
(1) Information of reportable segmental revenues, profits or losses, assets and liabilities (Continued)

	December 31,		
	2020	2021	2022
	RMB	RMB	RMB
Assets			
Segment assets			
- Exploration and production	354,024	371,100	412,543
- Refining	270,766	304,785	327,706
- Marketing and distribution	373,430	377,499	388,961
- Chemicals	190,789	222,803	242,794
- Corporate and others	118,458	133,961	148,014
Total segment assets	1,307,467	1,410,148	1,520,018
Interest in associates and joint ventures	188,342	209,179	233,941
Financial assets at fair value through other comprehensive income	1,525	767	730
Deferred tax assets	25,054	19,389	19,952
Cash and cash equivalents, time deposits with financial institutions	188,057	221,989	145,052
Other unallocated assets	28,451	27,783	28,947
Total assets	1,738,896	1,889,255	1,948,640
Liabilities			
Segment liabilities			
- Exploration and production	163,588	166,486	179,151
- Refining	136,980	146,763	86,428
- Marketing and distribution	234,309	228,826	237,534
- Chemicals	49,625	69,977	84,472
- Corporate and others	119,215	198,828	221,885
Total segment liabilities	703,717	810,880	809,470
Short-term debts	23,769	35,252	59,037
Income tax payable	6,586	4,809	4,725
Long-term debts	72,037	78,300	85,706
Loans from Sinopec Group Company and fellow subsidiaries	17,042	16,563	29,547
Deferred tax liabilities	8,124	7,910	8,079
Other unallocated liabilities	19,919	20,467	15,838
Total liabilities	851,194	974,181	1,012,402

38. SEGMENT REPORTING (Continued)

(1) Information of reportable segmental revenues, profits or losses, assets and liabilities (Continued)

	Years ended December 31,		
	2020 RMB	2021 RMB	2022 RMB
Capital expenditure			
Exploration and production	56,416	68,148	83,300
Refining	24,756	22,469	22,863
Marketing and distribution	25,403	21,897	19,140
Chemicals	28,217	51,648	58,612
Corporate and others	2,312	3,786	5,181
	<u>137,104</u>	<u>167,948</u>	<u>189,096</u>
Depreciation, depletion and amortization			
Exploration and production	46,273	52,880	45,321
Refining	20,090	20,743	20,588
Marketing and distribution	23,196	23,071	23,461
Chemicals	14,830	16,093	17,716
Corporate and others	3,072	2,893	2,820
	<u>107,461</u>	<u>115,680</u>	<u>109,906</u>
Impairment losses on long-lived assets			
Exploration and production	8,495	2,467	2,891
Refining	1,923	860	2
Marketing and distribution	536	1,211	415
Chemicals	3,675	5,332	1,790
Corporate and others	—	165	571
	<u>14,629</u>	<u>10,035</u>	<u>5,669</u>

(2) Geographical information

The following tables set out information about the geographical information of the Group's external sales and the Group's non-current assets, excluding financial instruments and deferred tax assets. In presenting information on the basis of geographical segments, segment revenue is based on the geographical location of customers, and segment assets are based on the geographical location of the assets.

	Years ended December 31,		
	2020 RMB	2021 RMB	2022 RMB
External sales			
Mainland China	1,720,695	2,166,040	2,824,140
Singapore	215,846	278,024	263,087
Others	168,183	296,820	230,941
	<u>2,104,724</u>	<u>2,740,884</u>	<u>3,318,168</u>
		December 31,	
	2020 RMB	2021 RMB	2022 RMB
Non-current assets			
Mainland China	1,216,267	1,268,814	1,353,771
Others	36,782	40,551	44,739
	<u>1,253,049</u>	<u>1,309,365</u>	<u>1,398,510</u>

39. PRINCIPAL SUBSIDIARIES

As at December 31, 2022, the following list contains the particulars of subsidiaries which principally affected the results, assets and liabilities of the Group.

Name of Company	Particulars of issued capital	Interests held by the Company %	Interests held by non-controlling interests %	Principal activities
Sinopec Great Wall Energy & Chemical Company Limited	RMB 22,761	100.00	—	Coal chemical industry investment management, production and sale of coal chemical products
Sinopec Yangzi Petrochemical Company Limited	RMB 15,651	100.00	—	Manufacturing of intermediate petrochemical products and petroleum products
Sinopec Overseas Investment Holding Limited ("SOIH")	USD 3,423	100.00	—	Investment holding of overseas business
Sinopec International Petroleum Exploration and Production Limited ("SIPL")	RMB 8,250	100.00	—	Investment in exploration, production and sale of petroleum and natural gas
Sinopec Yizheng Chemical Fibre Limited Liability Company	RMB 4,000	100.00	—	Production and sale of polyester chips and polyester fibres
Sinopec Lubricant Company Limited	RMB 3,374	100.00	—	Production and sale of refined petroleum products, lubricant base oil, and petrochemical materials
China International United Petroleum and Chemical Company Limited	RMB 5,000	100.00	—	Trading of crude oil and petrochemical products
Sinopec Qingdao Petrochemical Company Limited	RMB 1,595	100.00	—	Manufacturing of intermediate petrochemical products and petroleum products
Sinopec Catalyst Company Limited	RMB 1,500	100.00	—	Production and sale of catalyst products
China Petrochemical International Company Limited	RMB 1,400	100.00	—	Trading of petrochemical products
Sinopec Chemical Sales Company Limited	RMB 1,000	100.00	—	Marketing and distribution of petrochemical products
Sinopec Hainan Refining and Chemical Company Limited	RMB 9,606	100.00	—	Manufacturing of intermediate petrochemical products and petroleum products
Sinopec Beihai Refining and Chemical Limited Liability Company	RMB 5,294	98.98	1.02	Import and processing of crude oil, production, storage and sale of petroleum products and petrochemical products
ZhongKe (Guangdong) Refinery & Petrochemical Company Limited	RMB 6,397	90.30	9.70	Crude oil processing and petroleum products manufacturing
Sinopec Qingdao Refining and Chemical Company Limited	RMB 5,000	85.00	15.00	Manufacturing of intermediate petrochemical products and petroleum products
Marketing Company	RMB 28,403	70.42	29.58	Marketing and distribution of refined petroleum products
Sinopec Kantons Holdings Limited ("Sinopec Kantons")	HKD 248	60.33	39.67	Provision of crude oil jetty services and natural gas pipeline transmission services
Sinopec-SK (Wuhan) Petrochemical Company Limited ("Sinopec-SK")	RMB 7,193	59.00	41.00	Production, sale, research and development of petrochemical products, ethylene and downstream byproducts
Gaoqiao Petrochemical	RMB 10,000	55.00	45.00	Manufacturing of intermediate petrochemical products and petroleum products
Sinopec Baling Petrochemical Co., Ltd. ("Baling Petrochemical")	RMB 3,000	55.00	45.00	Crude oil processing and petroleum products manufacturing
Sinopec Shanghai Petrochemical Company Limited ("Shanghai Petrochemical")	RMB 10,824	50.44	49.56	Manufacturing of synthetic fibres, resin and plastics, intermediate petrochemical products and petroleum products
Fujian Petrochemical Company Limited ("Fujian Petrochemical") (i)	RMB 10,492	50.00	50.00	Manufacturing of plastics, intermediate petrochemical products and petroleum products

Except for Sinopec Kantons and SOIH, which are incorporated in Bermuda and Hong Kong SAR respectively, all of the above principal subsidiaries are incorporated and operate their businesses principally in the PRC. All of the above principal subsidiaries are limited companies.

Note:

- (i) The Group consolidated the financial statements of the entity because it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

Summarized financial information on subsidiaries with material non-controlling interests

Set out below are the summarized financial information which the amount before inter-company eliminations for each subsidiary that has non-controlling interests that are material to the Group.

39. PRINCIPAL SUBSIDIARIES (Continued)

Summarized consolidated statements of financial position

	Marketing Company		SIPL*		Shanghai Petrochemical		Fujian Petrochemical		Sinopec Kantons		Gaoqiao Petrochemical		Sinopec-SK	
	December 31,		December 31,		December 31,		December 31,		December 31,		December 31,		December 31,	
	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022
	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB
Current assets	159,599	190,697	22,759	25,677	20,932	15,766	1,464	1,901	4,761	5,436	16,253	23,991	6,791	5,781
Current liabilities	(193,315)	(212,593)	(1,430)	(9,468)	(15,796)	(13,998)	(142)	(169)	(196)	(209)	(8,668)	(10,162)	(8,122)	(8,488)
Net current (liabilities)/ assets	(33,716)	(21,896)	21,329	16,209	5,136	1,768	1,322	1,732	4,565	5,227	7,585	13,829	(1,331)	(2,707)
Non-current assets	326,437	326,095	8,954	12,869	25,988	25,370	13,208	10,215	8,195	7,902	21,308	15,602	20,650	20,251
Non-current liabilities	(59,604)	(57,215)	(17,823)	(11,892)	(747)	(783)	(700)	(707)	(170)	(232)	(10,679)	(5,385)	(7,512)	(7,806)
Net non-current assets/(liabilities)	266,833	268,880	(8,869)	977	25,241	24,587	12,508	9,508	8,025	7,670	10,629	10,217	13,138	12,445
Net assets	233,117	246,984	12,460	17,186	30,377	26,355	13,830	11,240	12,590	12,897	18,214	24,046	11,807	9,738
Attributable to owners of the Company	157,557	166,974	6,341	10,121	15,254	13,229	6,915	5,620	7,579	7,764	10,018	13,225	6,966	5,745
Attributable to non-controlling interests	75,560	80,010	6,119	7,065	15,123	13,126	6,915	5,620	5,011	5,133	8,196	10,821	4,841	3,993

Summarized consolidated statements of comprehensive income

Year ended December 31,	Marketing Company			SIPL*			Shanghai Petrochemical			Fujian Petrochemical			Sinopec Kantons			Gaoqiao Petrochemical			Sinopec-SK		
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB
Operating revenues	1,099,680	1,408,523	1,710,428	2,017	2,166	3,308	74,624	89,198	82,443	4,871	5,549	4,931	1,064	528	529	40,566	46,506	69,298	28,702	50,208	57,857
Net income/(loss) for the year	22,415	18,582	19,902	1,160	1,429	2,576	656	2,077	(2,842)	243	951	(1,925)	2,047	871	346	902	3,536	3,157	(920)	1,606	(1,101)
Total comprehensive income	21,149	18,439	22,418	(720)	1,045	6,438	645	2,218	(2,665)	243	951	(1,925)	1,814	677	734	1,342	3,677	3,161	(920)	1,606	(1,101)
Comprehensive income attributable to non-controlling interests	7,205	6,822	8,110	(287)	579	2,659	325	1,101	(1,318)	121	476	(962)	707	268	291	604	1,655	1,423	(377)	659	(451)
Dividends paid to non-controlling interests	2,766	7,064	3,453	316	—	—	649	541	548	150	64	333	175	164	169	1,759	256	984	—	—	397

Summarized statement of cash flows

Year ended December 31,	Marketing Company			SIPL*			Shanghai Petrochemical			Fujian Petrochemical			Sinopec Kantons			Gaoqiao Petrochemical			Sinopec-SK		
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB
Net cash generated from/(used in) operating activities	54,139	28,923	43,408	281	690	1,458	1,680	3,950	(7,459)	(244)	(292)	2	586	133	133	905	(1,577)	(1,247)	(363)	5,476	(1,538)
Net cash (used in)/ generated from investing activities	(40,010)	2,420	(23,490)	(2,659)	15	11,824	(3,888)	(2,359)	4,390	(649)	420	653	3,846	1,276	(1,153)	1,347	1,432	4,235	(2,340)	(1,789)	(1,556)
Net cash (used in)/ generated from financing activities	(12,402)	(31,081)	(15,984)	1,683	(1,172)	(1,369)	1,682	(3,393)	(1,169)	882	(142)	(682)	(1,250)	(1,066)	(434)	(4,257)	146	(2,986)	2,176	(653)	1,541
Net increase/(decrease) in cash and cash equivalents	1,727	262	3,934	(695)	(467)	11,913	(526)	(1,802)	(4,238)	(11)	(14)	(27)	3,182	343	(1,454)	(2,005)	1	2	(527)	3,034	(1,553)
Cash and cash equivalents as at January 1	6,901	8,642	8,999	8,833	7,699	7,068	7,450	6,916	5,112	79	68	54	117	3,182	3,432	2,006	—	1	1,593	1,066	4,100
Effect of foreign currency exchange rate changes	14	95	271	(439)	(164)	1,059	(8)	(2)	15	—	—	—	(117)	(93)	246	—	—	—	—	—	(3)
Cash and cash equivalents as at December 31	8,642	8,999	13,204	7,699	7,068	20,040	6,916	5,112	889	68	54	27	3,182	3,432	2,224	1	1	3	1,066	4,100	2,544

*The non-controlling interests of subsidiaries which the Group holds 100% of equity interests at the end of the year are the non-controlling interests of their subsidiaries.

40. FINANCIAL RISK MANAGEMENT AND FAIR VALUES

Overview

Financial assets of the Group include cash and cash equivalents, time deposits with financial institutions, financial assets at fair value through profit or loss, derivative financial assets, trade accounts receivable, amounts due from Sinopec Group Company and fellow subsidiaries, amounts due from associates and joint ventures, financial assets at FVOCI and other receivables. Financial liabilities of the Group include short-term debts, loans from Sinopec Group Company and fellow subsidiaries, derivative financial liabilities, trade accounts payable and bills payable, amounts due to Sinopec Group Company and fellow subsidiaries, amounts due to associates and joint ventures, other payables, long-term debts and lease liabilities.

The Group has exposure to the following risks from its uses of financial instruments:

- credit risk;
- liquidity risk; and
- market risk.

40. FINANCIAL RISK MANAGEMENT AND FAIR VALUES *(Continued)*

Overview *(Continued)*

The Board of Directors has overall responsibility for the establishment, oversight of the Group's risk management framework, and developing and monitoring the Group's risk management policies.

The Group's risk management policies are established to identify and analyze the risks faced by the Group, and set appropriate risk limits and controls to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Group's activities. The Group, through its training and management controls and procedures, aims to develop a disciplined and constructive control environment in which all employees understand their roles and obligations. Internal audit department undertakes both regular and ad hoc reviews of risk management controls and procedures, the results of which are reported to the Group's audit committee.

Credit risk

(i) Risk management

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Group's deposits placed with financial institutions (including structured deposits) and receivables from customers. To limit exposure to credit risk relating to deposits, the Group primarily places cash deposits only with large financial institutions in the PRC with acceptable credit ratings. The majority of the Group's trade accounts receivable relate to sales of petroleum and chemical products to related parties and third parties operating in the petroleum and chemical industries. No single customer accounted for greater than 10% of total trade accounts receivable as at December 31, 2022, except the amounts due from Sinopec Group Company and fellow subsidiaries. Management performs ongoing credit evaluations of the Group's customers' financial condition and generally does not require collateral on trade accounts receivable. The Group maintains a loss allowance for ECLs and actual losses have been within management's expectations.

The carrying amounts of cash and cash equivalents, time deposits with financial institutions, financial assets at fair value through profit or loss, derivative financial assets, trade accounts receivable, financial assets at FVOCI and other receivables, represent the Group's maximum exposure to credit risk in relation to financial assets.

(ii) Impairment of financial assets

The Group's primary type of financial assets that are subject to the expected credit loss model is trade accounts receivable, financial assets at FVOCI and other receivables.

The Group's cash deposits are placed only with large financial institutions with acceptable credit ratings, and there is no material impairment loss identified.

For trade accounts receivable and financial assets at FVOCI, the Group applies the IFRS 9 simplified approach to measuring ECLs which uses a lifetime expected loss allowance for all trade accounts receivable and financial assets at FVOCI.

To measure the ECLs, trade accounts receivable and financial assets at FVOCI have been grouped based on shared credit risk characteristics and the days past due.

The ECLs were calculated based on historical actual credit loss experience. The rates were considered the 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.

40. FINANCIAL RISK MANAGEMENT AND FAIR VALUES (Continued)

Credit risk (Continued)

The following table provides information about the exposure to credit risk and ECLs for accounts receivable as at December 31, 2021 and 2022.

	Gross carrying amount RMB	Impairment provision on individual basis		Impairment provision on provision matrix basis		
		Carrying amount RMB	Impairment provision on individual basis RMB	Weighted-average loss rate %	Impairment provision RMB	Loss allowance RMB
December 31, 2021						
Current and within 1 year past due	34,263	4,280	26	0.2 %	57	83
1 to 2 years past due	623	500	137	35.8 %	44	181
2 to 3 years past due	3,411	3,324	3,146	50.6 %	44	3,190
Over 3 years past due	597	208	190	100.0 %	389	579
Total	38,894	8,312	3,499		534	4,033

	Gross carrying amount RMB	Impairment provision on individual basis		Impairment provision on provision matrix basis		
		Carrying amount RMB	Impairment provision on individual basis RMB	Weighted-average loss rate %	Impairment provision RMB	Loss allowance RMB
December 31, 2022						
Current and within 1 year past due	46,097	7,014	2	0.1 %	56	58
1 to 2 years past due	216	29	25	20.9 %	39	64
2 to 3 years past due	269	193	148	43.4 %	33	181
Over 3 years past due	3,861	3,487	3,405	99.2 %	371	3,776
Total	50,443	10,723	3,580		499	4,079

All of the entity's other receivables are considered to have low credit risk, and the loss allowance recognized during the period was therefore limited to 12 months expected losses. The Group considers there was no significant increase in credit risk for other receivables by taking into account of their past history of making payments when due and current ability to pay, and thus the impairment provision recognized during the period was limited to 12 months expected losses.

Liquidity risk

Liquidity risk is the risk that the Group will not be able to meet its financial obligations as they fall due. The Group's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the Group's reputation. Management prepares monthly cash flow budget to ensure that the Group will always have sufficient liquidity to meet its financial obligations as they fall due. The Group arranges and negotiates financing with financial institutions and maintains a certain level of standby credit facilities to reduce the Group's liquidity risk.

As at December 31, 2021 and 2022, the Group has standby credit facilities with several PRC financial institutions which provide borrowings up to RMB 441,559 and RMB 454,857 on an unsecured basis, at a weighted average interest rate of 2.81% and 2.38% per annum, respectively. As at December 31, 2021 and 2022, the Group's outstanding borrowings under these facilities were RMB 11,700 and RMB 21,313 and were included in debts, respectively.

40. FINANCIAL RISK MANAGEMENT AND FAIR VALUES (Continued)

Liquidity risk (Continued)

The following table sets out the remaining contractual maturities at the date of the statement of financial position of the Group's financial liabilities, which are based on contractual undiscounted cash flows (including interest payments computed using contractual rates or, if floating, based on prevailing rates current at the date of the statement of financial position) and the earliest date the Group would be required to repay:

	December 31, 2021					
	Carrying amount	Total contractual undiscounted cash flow	Within 1 year or on demand	More than 1 year but less than 2 years	More than 2 years but less than 5 years	More than 5 years
	RMB	RMB	RMB	RMB	RMB	RMB
Short-term debts	35,252	35,871	35,871	—	—	—
Long-term debts	78,300	85,718	2,169	49,390	27,518	6,641
Loans from Sinopec Group Company and fellow subsidiaries	16,563	18,457	3,174	604	10,712	3,967
Lease liabilities	185,406	296,485	15,833	12,031	35,411	233,210
Derivative financial liabilities	3,223	3,223	3,223	—	—	—
Trade accounts payable and bills payable	215,640	215,640	215,640	—	—	—
Other payables	117,420	117,420	117,420	—	—	—
	651,804	772,814	393,330	62,025	73,641	243,818

	December 31, 2022					
	Carrying amount	Total contractual undiscounted cash flow	Within 1 year or on demand	More than 1 year but less than 2 years	More than 2 years but less than 5 years	More than 5 years
	RMB	RMB	RMB	RMB	RMB	RMB
Short-term debts	59,037	59,774	59,774	—	—	—
Long-term debts	85,706	94,823	2,207	13,620	68,180	10,816
Loans from Sinopec Group Company and fellow subsidiaries	29,547	32,222	7,813	4,288	13,962	6,159
Lease liabilities	182,411	299,176	16,699	12,905	36,984	232,588
Derivative financial liabilities	7,313	7,313	7,313	—	—	—
Trade accounts payable and bills payable	269,424	269,424	269,424	—	—	—
Other payables	121,716	121,716	121,716	—	—	—
	755,154	884,448	484,946	30,813	119,126	249,563

Management believes that the Group's current cash on hand, expected cash flows from operations and available standby credit facilities from financial institutions will be sufficient to meet the Group's short-term and long-term capital requirements.

Market risk

Market risk is the risk that changes in market prices, such as foreign exchange rates and interest rates. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimizing the return on risk.

(a) Currency risk

Currency risk arises on financial instruments that are denominated in a currency other than the functional currency in which they are measured.

The Group does not have significant financial instruments that are denominated in foreign currencies other than the functional currencies of respective entities as at December 31, and consequently does not have significant exposure to foreign currency risk.

40. FINANCIAL RISK MANAGEMENT AND FAIR VALUES (Continued)

(b) Interest rate risk

The Group's interest rate risk exposure arises primarily from its short-term and long-term debts and loans from Sinopec Group Company and fellow subsidiaries. Debts bearing interest at variable rates and at fixed rates expose the Group to cash flow interest rate risk and fair value interest rate risk respectively. The interest rates and terms of repayment of short-term and long-term debts, and loans from Sinopec Group Company and fellow subsidiaries of the Group are disclosed in Note 27.

As at December 31, 2021, it is estimated that a general increase/decrease of 100 basis points in variable interest rates, with all other variables held constant, would decrease/increase the Group's net income for the year by approximately RMB 254. As at December 31, 2022, it is estimated that a general increase/decrease of 100 basis points in variable interest rates, with all other variables held constant, would decrease/increase the Group's net income for the year by approximately RMB 524. This sensitivity analysis has been determined assuming that the change of interest rates was applied to the Group's debts outstanding at the date of the statement of financial position with exposure to cash flow interest rate risk. The analysis is performed on the same basis for 2021.

(c) Commodity price risk

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

Based on the dynamic study and judging of the market, combined with the resource demand and production and operation plan, the group evaluate and monitor the market risk exposure caused by transaction positions, and continuously manage and hedge the risk of commodity price fluctuation caused by market changes.

As at December, 31, 2021 and 2022, the Group had certain commodity contracts of crude oil, refined oil products and chemical products designated as qualified cash flow hedges and economic hedges. As at December 31, 2021 and 2022, the fair value of such derivative hedging financial instruments is derivative financial assets of RMB 18,359 and RMB 19,328, respectively, and derivative financial liabilities of RMB 3,214 and RMB 7,235, respectively.

As at December 31, 2021, it is estimated that a general increase/decrease of USD 10 per barrel in basic price of derivative financial instruments, with all other variables held constant, would impact the fair value of derivative financial instruments, which would decrease/increase the Group's net income for the year by approximately RMB 2,996 and decrease/increase the Group's other reserves by approximately RMB 1,160. As at December 31, 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 net income for the year by approximately RMB 5,104 and increase/decrease the Group's other reserves by approximately RMB 192. This sensitivity analysis has been determined assuming that the change in prices had occurred at the date of the statement of financial position and the change was applied to the Group's derivative financial instruments at that date with exposure to commodity price risk. The analysis is performed on the same basis for 2021.

Fair values

(i) Financial instruments carried at fair value

The following table presents the carrying value of financial instruments measured at fair value at the date of the statement of financial position across the three levels of the fair value hierarchy defined in IFRS 7, Financial Instruments: Disclosures, with the fair value of each financial instrument categorized in its entirety based on the lowest level of input that is significant to that fair value measurement. The levels are defined as follows:

- Level 1 (highest level): fair values measured using quoted prices (unadjusted) in active markets for identical financial instruments.
- Level 2: fair values measured using quoted prices in active markets for similar financial instruments, or using valuation techniques in which all significant inputs are directly or indirectly based on observable market data.

40. FINANCIAL RISK MANAGEMENT AND FAIR VALUES (Continued)

Fair values (Continued)

- Level 3 (lowest level): fair values measured using valuation techniques in which any significant input is not based on observable market data.

	December 31, 2021			
	Level 1	Level 2	Level 3	Total
	RMB	RMB	RMB	RMB
Assets				
Derivative financial assets:				
- Derivative financial assets	5,883	12,488	—	18,371
Financial assets at fair value through other comprehensive income:				
- Equity investments	179	—	588	767
-Trade accounts receivable and bills receivable	—	—	5,939	5,939
	<u>6,062</u>	<u>12,488</u>	<u>6,527</u>	<u>25,077</u>
Liabilities				
Derivative financial liabilities:				
- Derivative financial liabilities	804	2,419	—	3,223
	<u>804</u>	<u>2,419</u>	<u>—</u>	<u>3,223</u>
	December 31, 2022			
	Level 1	Level 2	Level 3	Total
	RMB	RMB	RMB	RMB
Assets				
Financial assets at fair value through profit or loss:				
- Fund Investments	2	—	—	2
Derivative financial assets:				
- Derivative financial assets	7,857	11,478	—	19,335
Financial assets at fair value through other comprehensive income:				
- Equity investments	114	—	616	730
- Trade accounts receivable and bills receivable	—	—	3,507	3,507
	<u>7,973</u>	<u>11,478</u>	<u>4,123</u>	<u>23,574</u>
Liabilities				
Derivative financial liabilities:				
- Derivative financial liabilities	1,293	6,020	—	7,313
	<u>1,293</u>	<u>6,020</u>	<u>—</u>	<u>7,313</u>

During the years ended December 31, 2021 and 2022, there was no transfer between instruments in Level 1 and Level 2.

(i) Financial instruments carried at fair value (Continued)

Management of the Group uses discounted cash flow model with inputted interest rate and commodity index, which were influenced by historical fluctuation and the probability of market fluctuation, to evaluate the fair value of the structured deposits and trade accounts receivable and bills receivable classified as Level 3 financial assets.

40. FINANCIAL RISK MANAGEMENT AND FAIR VALUES (Continued)

Fair values (Continued)

(ii) Fair values of financial instruments carried at other than fair value

The disclosures of the fair value estimates, and their methods and assumptions of the Group's financial instruments, are made to comply with the requirements of IFRS 7 and IFRS 9 and should be read in conjunction with the Group's consolidated financial statements and related notes. The estimated fair value amounts have been determined by the Group using market information and valuation methodologies considered appropriate. However, considerable judgement is required to interpret market data to develop the estimates of fair value. Accordingly, the estimates presented herein are not necessarily indicative of the amounts the Group could realize

in a current market exchange. The use of different market assumptions and/or estimation methodologies may have a material effect on the estimated fair value amounts.

The fair values of the Group's financial instruments carried at other than fair value (other than long-term indebtedness and investments in unquoted equity securities) approximate their carrying amounts due to the short-term maturity of these instruments. The fair values of long-term indebtedness are estimated by discounting future cash flows using current market interest rates offered to the Group for debt with substantially the same characteristic and maturities range from 0.30% to 4.65% and from 2.66% to 4.35% for the years ended December 31, 2021 and 2022, respectively. The following table presents the carrying amount and fair value of the Group's long-term indebtedness other than loans from Sinopec Group Company and fellow subsidiaries as at December 31, 2021 and 2022:

	December 31,	
	2021	2022
	RMB	RMB
Carrying amount	88,593	130,282
Fair value	85,610	125,866

The Group has not developed an internal valuation model necessary to estimate the fair values of loans from Sinopec Group Company and fellow subsidiaries as it is not considered practicable to estimate their fair values because the cost of obtaining discount and borrowing rates for comparable borrowings would be excessive based on the Group's existing capital structure and the terms of the borrowings.

Except for the above items, the financial assets and liabilities of the Group are carried at amounts not materially different from their fair values as at December 31, 2021 and 2022.

41. ACCOUNTING ESTIMATES AND JUDGEMENTS

The Group's financial condition and results of operations are sensitive to accounting methods, assumptions and estimates that underlie the preparation of the consolidated financial statements. Management bases the assumptions and estimates on historical experience and on various other assumptions that it believes to be reasonable and which form the basis for making judgements about matters that are not readily apparent from other sources. On an ongoing basis, management evaluates its estimates. Actual results may differ from those estimates as facts, circumstances and conditions change.

The selection of critical accounting policies, the judgements and other uncertainties affecting application of such policies and the sensitivity of reported results to changes in conditions and assumptions are factors to be considered when reviewing the consolidated financial statements. The significant accounting policies are set forth in Note 2. Management believes the following critical accounting policies involve the most significant judgements and estimates used in the preparation of the consolidated financial statements.

Oil and gas properties and reserves

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

41. ACCOUNTING ESTIMATES AND JUDGEMENTS (Continued)

Oil and gas properties and reserves (Continued)

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

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

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

Impairment for long-lived assets

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

Depreciation

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

Measurement of ECLs

The Group measures and recognizes ECLs using readiness matrix, considering reasonable and supportable information about the relevant past events, current conditions and forecasts of future economic conditions. The Group regularly monitors and reviews the assumptions used for estimating ECLs.

41. ACCOUNTING ESTIMATES AND JUDGEMENTS (Continued)

Allowance for diminution in value of inventories

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

42. PARENT AND ULTIMATE HOLDING COMPANY

The directors consider the parent and ultimate holding company of the Group as at December 31, 2022 is Sinopec Group Company, a state-owned enterprise established in the PRC. This entity does not produce financial statements available for public use.

43. RESERVES

	2021 RMB	2022 RMB
Capital reserve (Note (a))		
Balance as at January 1	34,263	27,062
Distribution to sellers in the business combination of entities under common control	(6,124)	—
Other contributions	—	2,678
Transaction with non-controlling interests	(1,396)	—
Other equity movements under the equity method	—	(1,009)
Others	319	22
Balance as at December 31	27,062	28,753
Share premium (Note (b))		
Balance as at January 1	55,850	55,850
Purchase of own shares	—	(3,004)
Balance as at December 31	55,850	52,846
Statutory surplus reserve (Note (c))		
Balance as at January 1	92,280	96,224
Appropriation	3,944	4,610
Balance as at December 31	96,224	100,834
Discretionary surplus reserve		
Balance as at January 1	117,000	117,000
Balance as at December 31	117,000	117,000
Other reserves		
Balance as at January 1	3,500	2,495
Other comprehensive income	17,574	19,126
Amounts transferred to initial carrying amount of hedged items	(19,302)	(15,363)
Others	723	149
Balance as at December 31	2,495	6,407
Retained earnings (Note (d))		
Balance as at January 1	322,361	354,480
Net income attributable to owners of the Company	71,975	66,153
Final dividend inspect of the previous year, approved and paid during the year (Note (e))	(15,739)	(37,532)
Interim dividend (Note (f))	(19,371)	(19,371)
Appropriation	(3,944)	(4,610)
Others	(802)	(150)
Balance as at December 31	354,480	358,970
	653,111	664,810

Notes:

- (a) The capital reserve represents (i) the difference between the total amount of the par value of shares issued and the amount of the net assets transferred from Sinopec Group Company in connection with the Reorganization (Note 1), and (ii) the difference between the considerations paid over or received the amount of the net assets of entities and related operations acquired from or sold to Sinopec Group Company and non-controlling interests.

43. RESERVES (Continued)

Notes: (Continued)

- (b) The application of the share premium account is governed by Sections 167 and 168 of the PRC Company Law.
- (c) According to the PRC Company Law and the Articles of Association of the Company, the Company is required to transfer 10% of its net income determined in accordance with the accounting policies complying with Accounting Standards for Business Enterprises (“CASs”), adopted by the Group to statutory surplus reserve. In the event that the reserve balance reaches 50% of the registered capital, no transfer is required. The transfer to this reserve must be made before distribution of a dividend to shareholders. Statutory surplus reserve can be used to make good previous years’ losses, if any, and may be converted into share capital by issuing of new shares to shareholders in proportion to their existing shareholdings or by increasing the par value of the shares currently held by them, provided that the balance after such issue is not less than 25% of the registered capital.

During the years ended December 31, 2020, 2021 and 2022, the Company transferred RMB 1,857, RMB 3,944 and RMB 4,610 respectively, being 10% of the net income determined in accordance with the accounting policies complying with CASs.

The usage of the discretionary surplus reserve is similar to that of statutory surplus reserve.

- (d) As at December 31, 2021 and 2022, the amount of retained earnings available for distribution was RMB 116,440 and RMB 100,947, respectively, being the amount determined in accordance with CASs. According to the Articles of Association of the Company, the amount of retained earnings available for distribution to owners of the Company is the lower of the amount determined in accordance with the accounting policies complying with CASs and the amount determined in accordance with the accounting policies complying with IFRS.

Pursuant to a resolution passed at the director’s meeting on March 24, 2023, final dividends in respect of the year ended December 31, 2022 of RMB 0.195 per share totaling RMB 23,380 were proposed for shareholders’ approval at the Annual General Meeting. Final cash dividend for the year ended December 31, 2022 proposed after the date of the statement of financial position has not been recognized as a liability at the date of the statement of financial position.

- (e) Pursuant to the shareholders’ approval at the Annual General Meeting on May 25, 2021, a final dividend of RMB 0.13 per share totaling RMB 15,739 according to total shares as at June 16, 2021 was approved. All dividends have been paid in the year ended December 31, 2021.

Pursuant to the shareholders’ approval at the Annual General Meeting on May 18, 2022, a final dividend of RMB 0.31 per share totaling RMB 37,532 according to total shares as at June 9, 2022 was approved. All dividends have been paid in the year ended December 31, 2022.

- (f) Pursuant to the shareholders’ approval at the General Meeting on August 27, 2021, the interim dividends for the year ended December 31, 2021 of RMB 0.16 per share totaling RMB 19,371 were approved. Dividends were paid on September 17, 2021.

Pursuant to the shareholders’ approval at the General Meeting on August 26, 2022, the interim dividends for the year ended December 31, 2022 of RMB 0.16 per share totaling RMB 19,371 were approved. Dividends were paid on September 19, 2022.

**SUPPLEMENTAL INFORMATION ON OIL AND GAS
PRODUCING ACTIVITIES (UNAUDITED)**
(All currency amounts in million)

In accordance with “Accounting Standards Codification (ASC) Topic 932 Extractive Activities - Oil and Gas”, issued by the Financial Accounting Standards Board of the United States, “Rule 4-10 of Regulation S-X”, issued by Securities and Exchange Commission (SEC), and in accordance with “Industrial Information Disclosure Guidelines for Public Company - No.8 Oil and Gas Exploitation”, issued by Shanghai Stock Exchange, this section provides supplemental information on oil and gas exploration and producing activities of the Group and its equity method investments at December 31, 2020, 2021 and 2022, and for the years then ended in the following six separate tables. Tables I through III provide historical cost information under IFRS pertaining to capitalized costs related to oil and gas producing activities; costs incurred in oil and gas exploration and development; and results of operation related to oil and gas producing activities. Tables IV through VI present information on the Group’s and its equity method investments’ estimated net proved reserve quantities; standardized measure of discounted future net cash flows; and changes in the standardized measure of discounted cash flows.

Tables I to VI of supplemental information on oil and gas producing activities set out below represent information of the Company and its consolidated subsidiaries and equity method investments.

Table I: Capitalized costs related to oil and gas producing activities

	Years ended December 31,								
	2020			2021			2022		
	RMB			RMB			RMB		
	Total	China	Other countries	Total	China	Other countries	Total	China	Other countries
The Group									
Property cost, wells and related equipments and facilities	757,592	716,683	40,909	793,045	752,352	40,693	840,719	796,403	44,316
Supporting equipments and facilities	184,638	184,621	17	188,766	188,742	24	202,262	202,238	24
Uncompleted wells, equipments and facilities	37,445	37,439	6	43,349	43,236	113	53,142	53,118	24
Total capitalized costs	979,675	938,743	40,932	1,025,160	984,330	40,830	1,096,123	1,051,759	44,364
Accumulated depreciation, depletion, amortization and impairment losses	(742,195)	(702,829)	(39,366)	(787,623)	(748,705)	(38,918)	(832,093)	(789,133)	(42,960)
Net capitalized costs	237,480	235,914	1,566	237,537	235,625	1,912	264,030	262,626	1,404
Equity method investments									
Share of net capitalized costs of associates and joint ventures	5,843	—	5,843	3,521	—	3,521	4,723	—	4,723
Total of the Group’s and its equity method investments’ net capitalized costs	243,323	235,914	7,409	241,058	235,625	5,433	268,753	262,626	6,127

Table II: Costs incurred in oil and gas exploration and development

	Years ended December 31,								
	2020			2021			2022		
	RMB			RMB			RMB		
	Total	China	Other countries	Total	China	Other countries	Total	China	Other countries
The Group									
Exploration	16,752	16,752	—	21,762	21,762	—	23,269	23,269	—
Development	38,241	37,636	605	46,147	45,590	557	52,984	52,984	—
Total costs incurred	54,993	54,388	605	67,909	67,352	557	76,253	76,253	—
Equity method investments									
Share of costs of exploration and development of associates and joint ventures	100	—	100	442	—	442	1,796	—	1,796
Total of the Group’s and its equity method investments’ exploration and development costs	55,093	54,388	705	68,351	67,352	999	78,049	76,253	1,796

**SUPPLEMENTAL INFORMATION ON OIL AND GAS
PRODUCING ACTIVITIES (UNAUDITED) (Continued)**
(All currency amounts in million)

Table III: Results of operations related to oil and gas producing activities

	Years ended December 31,								
	2020			2021			2022		
	RMB			RMB			RMB		
	Total	China	Other countries	Total	China	Other countries	Total	China	Other countries
The Group									
Revenues									
Sales	52,354	52,354	—	72,953	72,953	—	96,616	96,616	—
Transfers	58,069	56,052	2,017	86,650	84,484	2,166	118,120	114,812	3,308
	110,423	108,406	2,017	159,603	157,437	2,166	214,736	211,428	3,308
Production costs excluding taxes	(44,595)	(43,487)	(1,108)	(49,649)	(48,674)	(975)	(50,385)	(49,372)	(1,013)
Exploration expenses	(9,716)	(9,716)	—	(12,382)	(12,382)	—	(10,591)	(10,591)	—
Depreciation, depletion, amortization and impairment losses	(52,608)	(51,754)	(854)	(54,104)	(53,644)	(460)	(46,771)	(46,322)	(449)
Taxes other than income tax	(7,379)	(7,379)	—	(11,249)	(11,249)	—	(26,466)	(26,466)	—
Earnings before taxation	(3,875)	(3,930)	55	32,219	31,488	731	80,523	78,677	1,846
Income tax expense	188	—	188	(8,225)	(7,872)	(353)	(20,351)	(19,669)	(682)
Results of operation from producing activities	(3,687)	(3,930)	243	23,994	23,616	378	60,172	59,008	1,164
Equity method investments									
Revenues									
Sales	4,913	—	4,913	8,812	—	8,812	11,170	—	11,170
	4,913	—	4,913	8,812	—	8,812	11,170	—	11,170
Production costs excluding taxes	(998)	—	(998)	(2,246)	—	(2,246)	(1,864)	—	(1,864)
Exploration expenses	(940)	—	(940)	(533)	—	(533)	(847)	—	(847)
Depreciation, depletion, amortization and impairment losses	(1,930)	—	(1,930)	(4,391)	—	(4,391)	(7,288)	—	(7,288)
Taxes other than income tax	(303)	—	(303)	(355)	—	(355)	(288)	—	(288)
Earnings before taxation	1,045	—	1,045	1,642	—	1,642	1,171	—	1,171
Income tax expense	(303)	—	(303)	(355)	—	(355)	(288)	—	(288)
Share of net income for producing activities of associates and joint ventures	742	—	742	1,287	—	1,287	883	—	883
Total of the Group's and its equity method investments' results of operations for producing activities	(2,945)	(3,930)	985	25,281	23,616	1,665	61,055	59,008	2,047

The results of operations for producing activities for the years ended December 31, 2020, 2021 and 2022 are shown above. Revenues include sales to unaffiliated parties and transfers (essentially at third-party sales prices) to other segments of the Group. Income taxes are based on statutory tax rates, reflecting allowable deductions and tax credits. General corporate overhead and interest income and expense are excluded from the results of operations.

**SUPPLEMENTAL INFORMATION ON OIL AND GAS
PRODUCING ACTIVITIES (UNAUDITED) (Continued)**
(All currency amounts in million)

Table IV: Reserve quantities information

The Group's and its equity method investments' estimated net proved underground oil and gas reserves and changes thereto for the years ended December 31, 2020, 2021 and 2022 are shown in the following table.

Proved oil and gas reserves are those quantities of oil and gas, which by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulation before contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether the estimate is a deterministic estimate or probabilistic estimate. Due to the inherent uncertainties and the limited nature of reservoir data, estimates of underground reserves are subject to change as additional information becomes available.

Proved developed oil and gas reserves are proved reserves that can be expected to be recovered through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared with the cost of a new well.

"Net" reserves exclude royalties and interests owned by others and reflect contractual arrangements and obligation of rental fee in effect at the time of the estimate.

	Years ended December 31,								
	2020			2021			2022		
	Total	China	Other countries	Total	China	Other countries	Total	China	Other countries
The Group									
Proved developed and Undeveloped reserves (oil)									
(million barrels)									
Beginning of year	1,450	1,433	17	1,252	1,232	20	1,440	1,416	24
Revisions of previous estimates	(161)	(163)	2	209	200	9	275	277	(2)
Improved recovery	100	100	—	126	126	—	84	84	—
Extensions and discoveries	119	111	8	101	101	—	108	108	—
Production	(256)	(249)	(7)	(248)	(243)	(5)	(248)	(243)	(5)
End of year	1,252	1,232	20	1,440	1,416	24	1,659	1,642	17
Non-controlling interest in proved developed and undeveloped reserves at the end of year	5	—	5	8	—	8	6	—	6
Proved developed reserves									
Beginning of year	1,343	1,326	17	1,145	1,130	15	1,315	1,291	24
End of year	1,145	1,130	15	1,315	1,291	24	1,506	1,489	17
Proved undeveloped reserves									
Beginning of year	107	107	—	107	102	5	125	125	—
End of year	107	102	5	125	125	—	153	153	—
Proved developed and undeveloped reserves (gas)									
(billion cubic feet)									
Beginning of year	7,216	7,216	—	8,181	8,181	—	8,449	8,449	—
Revisions of previous estimates	831	831	—	662	662	—	806	806	—
Improved recovery	32	32	—	36	36	—	17	17	—
Extensions and discoveries	1,171	1,171	—	678	678	—	664	664	—
Production	(1,069)	(1,069)	—	(1,108)	(1,108)	—	(1,134)	(1,134)	—
End of year	8,181	8,181	—	8,449	8,449	—	8,802	8,802	—
Proved developed reserves									
Beginning of year	6,026	6,026	—	6,357	6,357	—	6,734	6,734	—
End of year	6,357	6,357	—	6,734	6,734	—	7,135	7,135	—
Proved undeveloped reserves									
Beginning of year	1,190	1,190	—	1,824	1,824	—	1,715	1,715	—
End of year	1,824	1,824	—	1,715	1,715	—	1,667	1,667	—

**SUPPLEMENTAL INFORMATION ON OIL AND GAS
PRODUCING ACTIVITIES (UNAUDITED) (Continued)**
(All currency amounts in million)

Table IV: Reserve quantities information (Continued)

	Years ended December 31,								
	2020			2021			2022		
	Total	China	Other countries	Total	China	Other countries	Total	China	Other countries
Equity method investments									
Proved developed and undeveloped reserves of associates and joint ventures (oil) (million barrels)									
Beginning of year	290	—	290	290	—	290	309	—	309
Revisions of previous estimates	12	—	12	33	—	33	9	—	9
Improved recovery	—	—	—	1	—	1	6	—	6
Extensions and discoveries	12	—	12	10	—	10	4	—	4
Production	(24)	—	(24)	(25)	—	(25)	(25)	—	(25)
End of year	290	—	290	309	—	309	303	—	303
Proved developed reserves									
Beginning of year	245	—	245	244	—	244	263	—	263
End of year	244	—	244	263	—	263	260	—	260
Proved undeveloped reserves									
Beginning of year	45	—	45	46	—	46	46	—	46
End of year	46	—	46	46	—	46	43	—	43
Proved developed and undeveloped reserves of associates and joint ventures (gas) (billion cubic feet)									
Beginning of year	9	—	9	10	—	10	7	—	7
Revisions of previous estimates	4	—	4	1	—	1	—	—	—
Improved recovery	—	—	—	—	—	—	—	—	—
Extensions and discoveries	—	—	—	—	—	—	—	—	—
Production	(3)	—	(3)	(4)	—	(4)	(3)	—	(3)
End of year	10	—	10	7	—	7	4	—	4
Proved developed reserves									
Beginning of year	9	—	9	8	—	8	6	—	6
End of year	8	—	8	6	—	6	3	—	3
Proved undeveloped reserves									
Beginning of year	—	—	—	2	—	2	1	—	1
End of year	2	—	2	1	—	1	1	—	1
Total of the Group and its equity method investments									
Proved developed and undeveloped reserves (oil) (million barrels)									
Beginning of year	1,740	1,433	307	1,542	1,232	310	1,749	1,416	333
End of year	1,542	1,232	310	1,749	1,416	333	1,962	1,642	320
Proved developed and undeveloped reserves (gas) (billion cubic feet)									
Beginning of year	7,225	7,216	9	8,191	8,181	10	8,456	8,449	7
End of year	8,191	8,181	10	8,456	8,449	7	8,806	8,802	4

**SUPPLEMENTAL INFORMATION ON OIL AND GAS
PRODUCING ACTIVITIES (UNAUDITED) (Continued)**
(All currency amounts in million)

Table V: Standardized measure of discounted future net cash flows

The standardized measure of discounted future net cash flows, related to the above proved oil and gas reserves, is calculated in accordance with the requirements of “ASC Topic 932 Extractive Activities - Oil and Gas”, “SEC Rule 4-10 of Regulation S-X”, and “Industrial Information Disclosure Guidelines for Public Company - No.8 Oil and Gas Exploitation”. Estimated future cash inflows from production are computed by applying the average, first-day-of-the-month price adjusted for differential for oil and gas during the twelve-month period before the ending date of the period covered by the report to year-end quantities of estimated net proved reserves. Future price changes are limited to those provided by contractual arrangements in existence at the end of each reporting year. Future development and production costs are those estimated future expenditures necessary to develop and produce year-end estimated proved reserves based on year-end cost indices, assuming continuation of year-end economic conditions. Estimated future income taxes are calculated by applying appropriate year-end statutory tax rates to estimated future pre-tax net cash flows, less the tax basis of related assets. Discounted future net cash flows are calculated using 10% discount factors. This discounting requires a year-by-year estimate of when the future expenditure will be incurred and when the reserves will be produced.

The information provided does not represent management’s estimate of the Group’s and its equity method investments’ expected future cash flows or value of proved oil and gas reserves. Estimates of proved reserve quantities are imprecise and change over time as new information becomes available. Moreover, probable and possible reserves, which may become proved in the future, are excluded from the calculations. The arbitrary valuation requires assumptions as to the timing and amount of future development and production costs. The calculations are made for the years ended December 31, 2020, 2021 and 2022 and should not be relied upon as an indication of the Group’s and its equity method investments’ future cash flows or value of its oil and gas reserves.

	Years ended December 31,								
	2020			2021			2022		
	RMB			RMB			RMB		
	Total	China	Other countries	Total	China	Other countries	Total	China	Other countries
The Group									
Future cash flows	595,159	589,659	5,500	941,015	930,302	10,713	1,490,949	1,479,098	11,851
Future production costs	(275,409)	(271,824)	(3,585)	(413,006)	(407,903)	(5,103)	(635,757)	(630,922)	(4,835)
Future development costs	(80,785)	(77,659)	(3,126)	(79,562)	(77,687)	(1,875)	(98,212)	(96,575)	(1,637)
Future income tax expenses	(11,758)	(10,521)	(1,237)	(113,598)	(111,178)	(2,420)	(190,893)	(187,900)	(2,993)
Undiscounted future net cash flows	227,207	229,655	(2,448)(1)	334,849	333,534	1,315	566,087	563,701	2,386
10% annual discount for estimated timing of cash flows	(54,158)	(52,706)	(1,452)	(93,354)	(93,164)	(190)	(170,126)	(169,810)	(316)
Standardized measure of discounted future net cash flows	173,049	176,949	(3,900)	241,495	240,370	1,125	395,961	393,891	2,070
Discounted future net cash flows attributable to non-controlling interests	(1,284)	—	(1,284)	370	—	370	681	—	681
Equity method investments									
Future cash flows	31,259	—	31,259	49,217	—	49,217	57,107	—	57,107
Future production costs	(13,050)	—	(13,050)	(18,026)	—	(18,026)	(18,011)	—	(18,011)
Future development costs	(5,712)	—	(5,712)	(6,328)	—	(6,328)	(7,393)	—	(7,393)
Future income tax expenses	(1,740)	—	(1,740)	(4,513)	—	(4,513)	(5,831)	—	(5,831)
Undiscounted future net cash flows	10,757	—	10,757	20,350	—	20,350	25,872	—	25,872
10% annual discount for estimated timing of cash flows	(4,828)	—	(4,828)	(10,201)	—	(10,201)	(13,015)	—	(13,015)
Standardized measure of discounted future net cash flows	5,929	—	5,929	10,149	—	10,149	12,857	—	12,857
Total of the Group’s and its equity method investments’ results of standardized measure of discounted future net cash flows	178,978	176,949	2,029	251,644	240,370	11,274	408,818	393,891	14,927

Note 1: The reason of the Group’s negative undiscounted future net cash flows attributable to the Other Countries for the year ended December 31, 2020 is that the Company has included the net asset retirement costs in the calculation of standardized measure for the Other Countries.

**SUPPLEMENTAL INFORMATION ON OIL AND GAS
PRODUCING ACTIVITIES (UNAUDITED) (Continued)**
(All currency amounts in million)

Table VI: Changes in the standardized measure of discounted cash flows

	Years ended December 31,		
	2020 RMB	2021 RMB	2022 RMB
The Group			
Sales and transfers of oil and gas produced, net of production costs	(58,449)	(98,705)	(137,885)
Net changes in prices and production costs	(122,641)	135,697	185,589
Net changes in estimated future development cost	(11,628)	(7,413)	(22,685)
Net changes due to extensions, discoveries and improved recoveries	35,292	46,425	58,610
Revisions of previous quantity estimates	(1,901)	42,637	78,310
Previously estimated development costs incurred during the year	6,684	5,475	11,885
Accretion of discount	31,940	16,448	32,342
Net changes in income taxes	19,375	(72,118)	(51,700)
Net changes for the year	(101,328)	68,446	154,466
Equity method investments			
Sales and transfers of oil and gas produced, net of production costs	(1,984)	(2,174)	(2,018)
Net changes in prices and production costs	(5,190)	4,967	3,301
Net changes in estimated future development cost	(299)	(752)	(694)
Net changes due to extensions, discoveries and improved recoveries	403	503	562
Revisions of previous quantity estimates	403	1,659	505
Previously estimated development costs incurred during the year	232	287	311
Accretion of discount	979	1,022	1,388
Net changes in income taxes	1,180	(1,292)	(647)
Net changes for the year	(4,276)	4,220	2,708
Total of the Group's and its equity method investments' results of net changes for the year	(105,604)	72,666	157,174

LIST OF SUBSIDIARIES

A list of China Petroleum & Chemical Corporation's principal subsidiaries is provided in Note 39 to the consolidated financial statements included in this annual report following Item 19.

Certification by Principal Executive Officer
Pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as amended

I, Ma Yongsheng, certify that:

1. I have reviewed this annual report on Form 20-F of China Petroleum & Chemical Corporation (the “Company”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;
4. The company’s other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - (c) Evaluated the effectiveness of the Company’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the Company’s internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the Company’s internal control over financial reporting; and
5. The Company’s other certifying officers and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company’s auditors and the audit committee of company’s board of directors (or persons performing the equivalent function):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company’s ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company’s internal control over financial reporting.

Date: April 28, 2023

By: /s/ Ma Yongsheng
Ma Yongsheng, Chairman

Certification by Principal Executive Officer
Pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as amended

I, Yu Baocai, certify that:

1. I have reviewed this annual report on Form 20-F of China Petroleum & Chemical Corporation (the “Company”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;
4. The company’s other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - (c) Evaluated the effectiveness of the Company’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the Company’s internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the Company’s internal control over financial reporting; and
5. The Company’s other certifying officers and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company’s auditors and the audit committee of company’s board of directors (or persons performing the equivalent function):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company’s ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company’s internal control over financial reporting.

Date: April 28, 2023

By: /s/ Yu Baocai
Yu Baocai, President

Certification by Principal Financial Officer
Pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as amended

I, Shou Donghua, certify that:

1. I have reviewed this annual report on Form 20-F of China Petroleum & Chemical Corporation (the “Company”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;
4. The Company’s other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - (c) Evaluated the effectiveness of the Company’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the Company’s internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the Company’s internal control over financial reporting; and
5. The Company’s other certifying officers and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company’s auditors and the audit committee of company’s board of directors (or persons performing the equivalent function):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company’s ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company’s internal control over financial reporting.

Date: April 28, 2023

By: /s/ Shou Donghua
Shou Donghua, Chief Financial Officer

**Certification of CEO and CFO Pursuant to
18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
and Pursuant to Rule 13a-14(b)
under the Securities Exchange Act of 1934, as amended (Exchange Act)**

In connection with the Annual Report on Form 20-F of China Petroleum & Chemical Corporation (the “Company”) for the year ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), Ma Yongsheng, as Chairman of the Board of the Company, Yu Baocai, as President of the Company, and Shou Donghua, as Chief Financial Officer of the Company, each hereby certifies, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, and Rule 13a-14(b) under the Exchange Act, that, to the best of his knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Exchange Act; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

By: /s/ Ma Yongsheng

Name: Ma Yongsheng

Title: Chairman

Date: April 28, 2023

By: /s/ Yu Baocai

Name: Yu Baocai

Title: President

Date: April 28, 2023

By: /s/ Shou Donghua

Name: Shou Donghua

Title: Chief Financial Officer

Date: April 28, 2023

This certification accompanies the Report pursuant to Rule 13a-14(b) under the Exchange Act and 18 U.S.C. Section 1350 and shall not be deemed “filed” by the Company for purposes of §18 of the Exchange Act, or otherwise subject to the liability of that section.
