China National Petroleum Corporation (CNPC) is an integrated international energy company, with businesses covering oil and gas operations, oilfield services, engineering and construction, equipment manufacturing, financial services and new energy development.
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The year 2014 witnessed a profound adjustment in the global economy and the tortuous recovery of major economies, with geopolitical unrest continuing and crude oil and commodity prices falling steeply. China’s economic development has entered a new normal, and growth in domestic demand for oil and gas slowed down. In these circumstances, CNPC remained focused on its core oil and gas businesses, adhering to the guideline of pursuing quality, efficient and sustainable development.

Our operating results were better than expected, thanks to a series of initiatives aimed at optimizing production operations, deepening reform and innovations, cutting costs and boosting efficiency.

The company’s businesses operated in a smooth and controlled manner, with domestic oil and gas reserves growing at peak levels, and record-high output of oil and gas accounting for 54% and 75% of the nation’s total, respectively. E&P activities remained the backbone of corporate earnings. Meanwhile, significant progress was made in restructuring the layout of the company’s refineries, which were running smoothly with a good HSE record and improved business performance. We continued to optimize our marketing network and products mix, building up the ability to be more responsive to the market. In natural gas and pipeline operations, a number of key pipelines and storage facilities became operational, with the backbone pipeline network continuing to expand and natural gas sales volume growing rapidly.

China’s “One Belt and One Road” strategic initiative has promoted new breakthroughs in international oil and gas cooperation, including Sino-Russian energy deals. The operating income and profits of our overseas businesses continued to account for a larger share of the company’s total. Despite a 21% decline in CAPEX and a 5.6% drop in the realized oil prices, we achieved steady growth in major production indexes, increased revenues and an improved financial standing.

We continued to improve the management system for technological innovation, optimize the allocation of R&D resources and promote in-depth scientific and technological exchanges and cooperation. This has resulted in a number of R&D achievements, which provide strong support to our efforts to tackle technical difficulties in the production. Innovation in geological theories and technologies for gas accumulation in paleo-marine carbonates guided the discovery and verification of the giant Anyue Gas Field in the Sichuan Basin. The national energy research center for tight oil and gas was set up based on CNPC’s RIPED, which will play a significant role in promoting technological progress in the exploration and production of such resources. Major equipment and SCADA system software for oil/gas pipelines were fully localized, boosting our core competence in the oil and gas pipeline business. Additionally, our proprietary technology in building and operating strategic oil and gas corridors won the First-class National Award for Scientific and Technological Advancement.

Over the past year, the company stepped up its reform efforts and launched a corporate governance program of setting up an effective Board of Directors. Through a series of initiatives aimed at deepening corporate reforms, improving internal controls and corporate governance, sharpening specific management competence and strengthening benchmarking management and meticulous management, there was an obvious enhancement in the company’s managerial and administrative level. We remained committed to safe and clean development, highlighting safety awareness and the consciousness of the "Red Line", and focusing on regulatory compliance and accountability in HSE management practices. The HSE system review was integrated into our operational safety assessment, and our risk control mechanism and emergency response capability were strengthened to bolster the company’s HSE performance. Taking energy conservation as a key driver of the energy revolution as well as a way to cost-efficient development, CNPC has consistently upheld the concept that “saving energy means increasing production and profit”, and has endeavored to achieve world-leading performance in energy efficiency.

The year 2015 is the closure of the 12th Five-Year Plan and presents an important opportunity for further deepening reform. Amid a development landscape that is more complicated and challenging than ever before, we will stick to our goal of building a world-class integrated international energy company and strive for quality, efficient and sustainable development by taking the initiative in adjusting to the new normal, promoting reform and innovation, leveraging market mechanisms and pushing ahead with cost reduction and efficiency improvement measures to dissolve adverse influences. We will continue to play an active role in the global oil and gas industry, accelerate the integration of automation and greater IT application, expedite the in-depth fusion of existing IT system with Internet and mobile technology, and develop a competitive edge in the international market. In addition, we will further foster our soft power by enhancing corporate brand value and cultivating a more inspirational corporate culture. We will deepen mutual understanding and interaction with our international partners, proactively fulfill our social responsibility, and work closely with our stakeholders in order to achieve mutually beneficial development.
Steady growth in domestic oil and gas operations

Remaining focused on the resource strategy, CNPC continued to make headway in maintaining peak growth in its reserves. In 2014, newly added proven oil in place and gas in place amounted to 689.8 million tons and 484 billion cubic meters respectively, with the total exceeding 1 billion tons of oil equivalent for the eighth consecutive year. The reserve replacement ratio remained over 100%. Three one-trillion-cubic-meter natural gas reserve areas were verified in the Ordos, Sichuan and Tarim basins. A large oilfield with sizable reservoirs, high abundance and favorable exploitation potential was found in the Qaidam Basin. Significant progress was made in tight oil exploration in the Songliao and Ordos basins.

Our capability in oil/gas field development continued to grow with domestic production hitting a new high, thanks to efforts to optimize our development program and techniques, implementing meticulous management, stabilizing the output of mature fields and effectively controlling the natural decline rate and the rise in the water cut. In 2014, we produced 113.67 million tons of crude and 95.46 billion cubic meters of natural gas, accounting for 54% and 75% of the nation’s total. In particular, Daqing Oilfield maintained steady crude oil production above 40 million tons for 12 consecutive years, and Changqing Oilfield produced 55 million tons of oil equivalent. Commercial production of CBM increased by 57.7%. Shale gas development picked up its pace, with the construction of a number of production facilities proceeding smoothly. Joint E&P projects in China operated steadily and efficiently, yielding 9.2 million tons of oil equivalent throughout the year, up 11% year-on-year.

In 2014, in response to market changes, we continued to improve resource allocation in the refining & chemicals sector and differentiate our product offerings to highlight merchantability, high performance and added value. Our crude runs and the output of refined products totaled 150.16 million tons and 101.84 million tons, respectively. The quality upgrading for automotive diesel fuel was completed to meet the National IV standard, and market supply was secured.
With regard to oil product marketing, faced with a continuous weakening price and a slowdown in demand, we optimized sales structure and prioritized retail, selling 117.02 million tons of oil products in 2014, including 83.21 million tons via retail. In particular, 97% gasoline and jet fuel saw sales growth of 22% and 4%, respectively. Logistics operations were streamlined and non-performing terminals/tank yards were closed, resulting in well-controlled operating costs and a fall in freight per ton for the fifth consecutive year. The synergy of the integrated marketing model comprising retail, fuel cards and non-fuel business has emerged.

In view of the supply-demand changes in the natural gas market as well as the widening gap between seasonal peaks and troughs, we managed to allocate gas sources including self-produced, imported and LNG, and leveraged the peak-shaving capabilities of our LNG terminals, underground gas storage and pipeline storage, ensuring stable market supply. In 2014, the company sold 119.48 billion cubic meters of natural gas, up 8.1% from the previous year. A number of key projects became operational, including Line C of the Central Asia-China Gas Pipeline, the Third West-East Gas Pipeline and the Third Shaanxi-Beijing Gas Pipeline, bolstering the company’s gas supply capacity and extending its natural gas supply network to 29 provinces, municipalities and autonomous regions, as well as Hong Kong SAR.

Significant breakthroughs in international operations
Our international operations were fruitful in 2014, with continuous improvement in quality, profitability and business portfolio. Oil and gas cooperation in Central Asia and Russia made good headway. A series of oil and gas cooperation agreements were concluded with Russian counterparts. A number of packaged deals were signed with our partners in Kazakhstan, Uzbekistan, Tajikistan, Kyrgyzstan and Turkmenistan, further facilitating the progress of the Central Asia demonstration area for oil and gas cooperation. We also reached cooperation agreements with counterparts in Mongolia, Peru, Cuba, Pakistan and Venezuela, respectively.

We identified considerable reserves in cooperation blocks in Sudan, Ecuador, the Pre-Caspian Basin, Turkmenistan, Niger and Chad, by leveraging our experience and expertise in domestic exploration activities and organizing dedicated comprehensive studies. In 2014, our overseas operating production amounted to 127 million tons of oil equivalent, of which CNPC’s share was 65.2 million tons. Our international trade business continued to grow both in terms of scale and performance, with our full-year trade volume standing at 386 million tons.

Consolidating comprehensive and integrated strength
Oilfield services is an essential part of CNPC’s comprehensive and integrated strength. In 2014, we stepped up the pace of business transformation in the sector, placing emphasis on streamlining project organization, promoting factory-like operations, and expanding high-end markets, resulting in enhanced service capability and better performance.

Our competence in market-oriented and international operations was further strengthened in the engineering & construction and equipment manufacturing sectors. Management and control of key links during project engineering & construction was enhanced, including design, procurement, construction and supervision. Project quality and construction efficiency were improved, and our EPC and PMC capabilities were further enhanced. We pushed forward the restructuring program in the equipment manufacturing business, encouraged technological innovation, optimized product offerings, and made great efforts to develop proprietary state-of-the-art petroleum equipment in order to facilitate our oil and gas operations. We have also maintained a petroleum equipment marketing network covering all major oil and gas producing areas around the world.

Enhanced sustainability
We made steady progress in partnership with private and social capital and entered into a number of new joint ventures or cooperation agreements with our partners in Xinjiang, Heilongjiang and Shaanxi. We launched a pilot initiative to give Liaohe Oilfield Company and Jilin Oilfield Company a greater autonomy, which led to the introduction of a more flexible managerial mechanism and improved operating performance. Conforming with international practices on corporate governance and internal control, CNPC established a Board of Directors and relevant management bodies in a significant step towards building a comprehensive corporate governance system, with emphasis on bolstering business vitality and promoting reforms and innovation.

Technological progress has become an increasingly important driving force of the company’s business growth. ASP flooding as a tertiary recovery method has been put into commercial application. A package of ASP flooding-EOR technology and the technical standard & code system were worked out. New breakthroughs in geological theories and technologies for unconventional hydrocarbon have effectively guided the exploration of tight oil. In addition, we have developed and put into use a number of new technologies in oil and gas exploration, improved water flooding for high-water-cut oilfields, catalysts for refining and petrochemical processes, oilfield services, pipeline construction and operation, and domestic manufacturing of key equipment, underpinning sustained growth in the company’s core businesses.

While securing energy supply, we give top priority to operational safety, environmental protection, energy efficiency, and emission reduction. In 2014, we maintained a steady and sound HSE performance by further improving our HSE framework and enhancing our risk control capabilities. By pushing ahead with a series of energy conservation initiatives and emission reduction measures, we reduced our energy use by 1.26 million tons of standard coal and fresh water use by 24.62 million cubic meters throughout the year, with all indexes for resource saving and pollutant control meeting the authorities’ requirements.
## Operation Highlights

### Financial Index

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<th>2012</th>
<th>2013</th>
<th>2014</th>
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<tbody>
<tr>
<td>Operating income (billion RMB yuan)</td>
<td>2,683.5</td>
<td>2,759.3</td>
<td>2,730.0</td>
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<tr>
<td>Total profit (billion RMB yuan)</td>
<td>183.9</td>
<td>188.0</td>
<td>173.4</td>
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<td>Net profit (billion RMB yuan)</td>
<td>139.2</td>
<td>140.8</td>
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<td>Tax payable (billion RMB yuan)</td>
<td>393.0</td>
<td>407.8</td>
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### Oil and Gas Production

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<tr>
<td>Oil production (mmt)</td>
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<tr>
<td>Domestic</td>
<td>110.33</td>
<td>112.60</td>
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<td>Overseas (CNPC's share)</td>
<td>41.55</td>
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<td>Gas production (bcm)</td>
<td>93.52</td>
<td>103.89</td>
<td>113.92</td>
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<td>Domestic</td>
<td>79.86</td>
<td>88.84</td>
<td>95.46</td>
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<tr>
<td>Overseas (CNPC's share)</td>
<td>13.66</td>
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### Refining, Chemicals and Sales

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<td>Crude runs (mmt)</td>
<td>191.45</td>
<td>188.55</td>
<td>196.98</td>
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<tr>
<td>Domestic</td>
<td>147.16</td>
<td>146.02</td>
<td>150.16</td>
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<td>Overseas</td>
<td>44.29</td>
<td>42.53</td>
<td>46.82</td>
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<tr>
<td>Domestic refined products output (mmt)</td>
<td>96.38</td>
<td>97.90</td>
<td>101.84</td>
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<tr>
<td>Domestic lube oil output (mmt)</td>
<td>1.84</td>
<td>1.89</td>
<td>1.58</td>
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<td>Domestic ethylene output (mmt)</td>
<td>3.69</td>
<td>3.98</td>
<td>4.98</td>
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<tr>
<td>Domestic refined products sales (mmt)</td>
<td>116.62</td>
<td>118.33</td>
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<td>Domestic service stations</td>
<td>19,840</td>
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### Pipeline

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<th>2012</th>
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<td>Domestic pipeline mileage (km)</td>
<td>66,801</td>
<td>72,878</td>
<td>79,054</td>
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<tr>
<td>Crude oil</td>
<td>16,369</td>
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<td>Natural gas</td>
<td>40,995</td>
<td>45,704</td>
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<td>Oil products</td>
<td>9,437</td>
<td>9,534</td>
<td>10,086</td>
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<tr>
<td>Overseas pipeline mileage (km)</td>
<td>10,494</td>
<td>13,257</td>
<td>15,218</td>
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<tr>
<td>Crude oil</td>
<td>6,672</td>
<td>6,671</td>
<td>7,653</td>
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<tr>
<td>Natural gas</td>
<td>3,822</td>
<td>6,586</td>
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China National Petroleum Corporation
2014 Industry Review

In 2014, due to continued weak recovery of the world economy and subdued growth in oil demand, oil supply continued to exceed demand, and oil prices fluctuated, experiencing a slight rise before a huge decline. Global markets saw sustained surplus supply of crude oil, overall ample supply of refined products, and a preliminary excess supply of natural gas, leading to sharp falls in both oil prices and the spot prices of natural gas. As China has shifted its economic growth to a lower gear, downward pressure on the economy has continued to mount, with the growth rate of oil consumption remaining at a low level and the growth of natural gas consumption slowing down sharply.

The world economy as a whole failed to gain momentum in 2014 due to the continued influence of the global financial crisis. The performance of the major economies has been divergent. The US did gain some strength, while Europe’s economic revival was sluggish. The emerging economies witnessed a slowdown in growth. Global primary energy consumption increased by 1.33% year-on-year, with growth in demand still mainly attributable to non-OECD countries, especially emerging economies. China’s economic development has entered a new normal, achieving stable performance while securing progress. The country consumed 2.7% more energy than in 2013, registering a slower increase.

In 2014, as the global oil supply continued to exceed demand, the market was thrown off balance, and oil prices plunged. A global supply surplus of 760,000bbl/d resulted from 92.44 million bbl/d of oil demand and 93.20 million bbl/day of oil supply. Since the second half of the year, the price of Brent crude fell to USD 57.33/bbl in December from its highest of USD 115.06/bbl in the year, averaging USD 99.45/bbl in 2014, down by USD 9.21/bbl year-on-year, due to an array of interwoven factors such as the rapid growth in US crude oil output, geopolitics, the appreciation of the US dollar and the growing divergence among OPEC members. China’s oil consumption continued its slow growth as a result of the transformation and adjustment of the nation’s economic structure. China’s apparent oil consumption increased by 3.7% year-on-year, 1.5% higher than in 2013, with dependence on foreign oil reaching 59.5%.

Globally, investment in oil and gas E&P slowed down. Significant discoveries continued to be obtained in hot spot offshore areas and unconventional fields, with the Europe’s Barents Sea and the Norwegian...
Sea becoming new hot spots for E&P activities. Global production totaled 4.15 billion tons of crude and 3.57 trillion cubic meters of natural gas, up 1.25% and 2.7% year-on-year respectively. Since shale oil and gas production kept soaring in the US, the country’s oil imports from Africa and the Middle East decreased to varying degrees. Oil producers in these two regions have started to seek new markets in Asia and other areas with robust demand, resulting in an accelerating eastward shift in the focus of the world’s oil trade. Natural gas trade volume in the global market continued to grow at a relatively low rate. Pipeline gas exports from Russia to Europe reduced dramatically, and the increment in pipeline gas trade volume was mainly attributable to China. LNG trade volume increased by 1.3% year-on-year, with the flow continuing to be from Qatar, Malaysia, Indonesia, Australia and Nigeria to the Asia-Pacific and Europe.

In 2014, China maintained rapid growth in its oil and gas reserves. Natural gas exploration remained at a rapid development stage, with gas recoveries accounting for half of the year’s total major oil and gas discoveries. Continuous heavy investment and theoretical innovations and breakthroughs have greatly supported exploration activities, directing oil and gas exploration and development towards multiple areas and series of strata. Tight oil exploration was carried out comprehensively, leading to important discoveries in several basins. An intensified degree of development has helped stabilize production in major fields, and yielded a slight rise in crude output. Gas output registered an increase of 7.8% year-on-year, as production capacity building for conventional gas proceeded smoothly with increased output from major gas fields, and breakthroughs were made in tapping unconventional gases.

The annual global refining capacity increased to 4.63 billion tons, an increase of 61.25 million tons year-on-year, resulting in an overall overcapacity. On the whole, oil refineries worldwide operated smoothly, registering a record high daily crude run of 77.30 million barrels, up 2% year-on-year. The average utilization rate of refineries was 83%, slightly higher than in 2013. Due to the steep fall in oil prices, the refining margins in Europe, Asia-Pacific and the central US declined to different degrees. For refineries in the coastal areas of the US, however, the gross margin from HLS/LLS cracking increased, thanks to their adaption to processing cheap tight oil and light shale oil. Global ethylene capacity totaled 153 million tons per annum, up 2.6% year-on-year.

In 2014, China’s refining capacity continued to increase rapidly, with the total amount reaching 702 million tons, up 6% year-on-year. Crude runs totaled 496 million tons, up 3.6% year-on-year. The average utilization rate of refineries across the country declined for the third consecutive year. The ethylene production capacity was 20.41 million tons, an increase of 12.8% over the previous year, featuring diversified feedstock and a higher proportion of domestically developed equipment and technology.

The year 2014 saw an overall ample supply of major oil products globally. Gasoline and naphtha were in slightly tight demand/supply dynamics, while diesel, jet fuel and residual fuel oil were obviously over-supplied. Global demand for gasoline, diesel and kerosene increased by 1.7%, 1.7% and 2.7% year-on-year, respectively. Refined products were traded in a wider variety of regions, including North America, Middle East, Central Asia and Russia, where exports were a more common occurrence, and Europe, Latin America and Africa saw more imports. Since the refining capacity spared in Asia-Pacific, refined products, in particular diesel, were increasingly in surplus supply within the region. China’s refined products market saw a generally medium-low demand growth, featuring a divergent growth rate for each major refined product; more ample supply than in 2013, and a further increase in net exports. The ample supply was reflected by a year-round production of 313 million tons, up 5.7% year-on-year, compared with an apparent consumption of 297 million tons, up 4% year-on-year. The robust passenger car market has pushed demand for gasoline up to over 100 million tons. On the other hand, diesel consumption registered negative growth for two consecutive years, and growth in kerosene consumption decreased slightly.

In 2014, due to the downward trend in the macro-economy, the adjustment of gas prices, and the accelerated development of alternative energies, the growth rate of China’s natural gas market slowed down noticeably, as evidenced by an apparent consumption of 183 billion cubic meters, up 8.9% year-on-year, the lowest in the past 10 years. Imports of LNG and pipeline gas accounted for 32.2% of domestic gas consumption, totaling 59 billion cubic meters. However, the slowing growth in gas demand has led to an easing of the tight supply and demand situation in the domestic market, and the whole year witnessed a relatively ample supply.

It is projected that, in 2015, greater volatility and uncertainty will continue to exist in global growth, and the overall economic situation is not optimistic. China’s economy is entering a critical period of changing growth pace. In the global market, ample supply of oil will remain, and oil prices will remain volatile at a low level. In China, oil demand will continue to grow at a low rate, and gas demand will maintain relatively rapid growth. Considering the impacts of geopolitics, over-supply of oil and gas, and oil prices tumbling, upstream oil and gas investment will probably be further slashed. Oil companies will emphasize E&P investment in well-proven regions, while cutting back those in the projects with high risks and high costs.
Safety, Environment, Quality and Energy Conservation
In 2014, the company continued to emphasize safe, environmentally friendly and resource-saving development and further improved its HSE system focused on risk assessment and control. By taking measures such as strengthening hidden risk control, and further promoting pollution and emission reduction activities, we achieved continuous improvements in key environmental indicators and maintained sound HSE performance.

With a strong commitment to our vision for the environment, safety, quality and people, we gave high priority to HSE management and security in our overseas operations. Over the past year, we managed to mitigate various risks and maintained an excellent track record in security and HSE, with zero reporting of major incidents.

Operational Safety

In 2014, to emphasize safety management responsibility, we compiled and implemented a series of new regulations, including Risk Control Measures for Operational Safety, Guidance on HSE Responsibilities at CNPC Headquarters, and Implementation Rules for HSE Performance Reviews. In accordance with the recently enacted Production Safety Law of the People’s Republic of China, we launched a company-wide compliance check-up and took corrective actions against offenses and violations which were identified.

In a bid to improve HSE-related risk prevention and control, we continued to improve our risk control mechanisms and safety monitoring and inspection procedures. In particular, safety hazard control measures were adopted at production sites, special examination for onshore operational safety were launched, on-site safety inspections were conducted, and the supervision of contractors’ HSE performance was reinforced. Meanwhile, we reviewed and addressed safety issues in relation to oil and gas pipelines. A pipeline safety supervision platform was developed to enable the uploading and tracking of pipeline information, hazard data, corrective measures and follow-up actions. In addition, case study video workshops were held to analyze and learn from accidents and prevent any repetition.

Environmental Protection

Environmental protection is a common concern around the world and environmental issues are attracting increasing public attention. As an energy company, CNPC is always committed to promoting environmentally friendly development and clean operations in order to reduce emissions and minimize the environmental footprint of our operations.

In 2014, we continued to push ahead with emission reduction projects. 10 FCC flue-gas desulfurization projects and three refinery wastewater treatment projects became operational. We further strengthened supervision of our affiliates’ emission reduction activities and improved the network for the online monitoring of pollution sources, covering a further 79 wastewater monitoring stations and 185 flue gas monitoring stations, with online measuring devices being equipped, which enabled real-time information to be shared.

Occupational Health

CNPC adopts and implements an integrated, prevention-oriented approach to ensure the occupational health of our employees in accordance with the Law of the People’s Republic of China on Prevention and Control of Occupational Diseases. We continue to strengthen our capacity to safeguard employees’ occupational health through a range of schemes and training workshops on hazard prevention and control as well as health management. In 2014, more than 97% of our employees received occupational health checks, and 97% of the specific workplaces received occupational disease hazards detection.
To improve the supervision of our occupational health program, we strictly implemented the management system and standardized procedures for occupational health archiving and clearly specified the types of information to be filed and the management requirements for the archives. A range of training courses and workshops on occupational health issues have been held to help build up the expertise and skills of related staff at the company’s affiliates.

With regard to employee health at our overseas projects, we issued the Guide to Occupational Health Management for Overseas Employees. A completed employee healthcare network has been established in most of the host countries where we operate. In 2014, we further reinforced health security competence in disease prevention, dietetic hygiene, and mental health counseling etc., giving consideration to specific geological locations, climate environments, and the medical conditions of our overseas projects. By taking a range of preventive measures, we eliminated deaths due to clusters of illness and epidemic diseases, and achieve a zero occupational disease rate among overseas employees. During the Ebola outbreak, we invited Chinese disease control experts to provide our employees in African countries, including Sudan, South Sudan, Niger, Chad and Mozambique, with necessary prevention knowledge and measures to counter this highly contagious disease. In addition, the online platform of the employee assistance program (EAP) was launched in September 2014, to provide mental health counseling for overseas employees in an online interactive manner.

**Energy Efficiency**

We make constant efforts to enhance energy efficiency through the promotion of major energy conservation projects, reinforcing comprehensive energy-saving activities and intensifying monitoring measures, in a bid to build a resource-efficient company.

In 2014, 43 energy conversation projects were carried out, covering oilfield pumping systems, surface systems, heating furnaces, refining waste heat boilers and steam systems. 10 projects were completed, including the upgrading of thermal injection systems at Liaohe Oilfield, reducing energy consumption by 74,000 tons of standard coal. Energy system optimization techniques started to deliver results. Three optimization programs were conducted, including the 2.6Mt/a RFCC CO-firing boiler upgrading project at Ningxia Petrochemical, with estimated annual energy savings up to 38,000 tons of standard coal.

We have established and implemented an online energy/water conservation information system to facilitate comprehensive management. With regard to energy conservation standardization, we have worked out or amended nine industrial standards and four corporate standards, such as Energy Conservation Technical Specifications for the Design of Oilfield Surface Engineering. The Implementation Guide to Energy System Optimization in Refining Processes was filed for review as a draft national standard. In addition, we intensified our efforts in energy consumption supervision, reviewing our affiliated petrochemical companies’ compliance with the government’s mandatory requirements such as refining and ethylene plants’ upper limits of energy consumption per unit of product. In 2014, the company reduced energy consumption by 1.26 million tons of standard coal and water consumption by 24.62 million cubic meters.
Quality Control

Remaining firmly committed to the principles of honesty, trustworthiness and quality, we provide high-standard and high-quality products and services. In accordance with the State Council’s Quality Development Outline (2011-2020) and the Metrology Development Plan (2013-2020), we achieved a continuous improvement in quality control in 2014. Our quality management system (QMS) was streamlined and third-party QMS certification for our affiliates proceeded well. QMS reviews were promoted to ensure effective operation of the system.

As part of our quality control and supervision efforts in 2014, we conducted random quality inspections of 2,172 batches of products produced, sold or purchased by our subsidiaries, focusing on consumer products such as automobile gasoline and diesel, LPG, and natural gas, and HSE-related materials such as valves, pipes and chemicals purchased from contracted suppliers. In addition, we closely monitored the quality of engineering & construction projects, keeping all 2,270 ongoing projects with 24,121 quality monitoring points under supervision. As a result, potential project quality risks have been satisfactorily controlled by eliminating a great number of hazards.

We further improved our corporate standard system in 2014 by formulating or amending 219 enterprise standards. We led the formulation or amending of 186 national or industrial standards. More than 3,700 various criteria in the company’s standard system were upgraded and completed. We compiled the standards for tight oil and gas and shale gas, and established the national shale gas technology standardization committee entrusted by the National Energy Administration, indicating CNPC’s leading role in setting the standard for unconventional hydrocarbons.

In particular, the Natural gas—Determination of sulfur compounds (ISO 16960) and Natural gas—Calculation of methane number (ISO/TR 22302) drafted by our affiliated Southwest Oil and Gas Field Company have been issued by the International Organization for Standardization. So far, CNPC has worked on and proposed 19 international (foreign) standards.
Human Resources
CNPC attaches great importance to and protects employees’ rights and interests. We strive to create a workplace based on fairness, impartiality and harmony, and build favorable career development platforms and promotion channels for our employees. We are trying to foster strong human resources composed of various tiers of skills in order to underpin the company’s goal of building a major integrated international energy company.

We recruit the best people for technical and management positions from both inside and outside the company on an open, fair and competitive basis. In 2014, we enrolled 9,037 college graduates and 136 overseas students. As at the end of 2014, CNPC had 19 academicians of the Chinese Academy of Sciences or the Chinese Academy of Engineering, 428 senior technical experts, 100 management experts, 322 senior skilled experts, 4,503 senior technicians and 24,801 technicians.

We provide various types of career development and training opportunities for employees and effectively conduct well-targeted training programs based on business demands in order to build up the professional skills and competence of our staff. In 2014, we launched 163 training programs at headquarters level with participants exceeding 20,000. On-the-job training on new knowledge, expertise and skills remained the focus of the company’s training initiatives. We have constantly invested in the e-learning platform to improve its functionality and offer more and diverse courses. More than 670,000 employees registered on the platform in the past year to take online training courses.

Skill competitions play an active role in developing vocational excellence. In 2014, we organized skill competitions for employees working on oil production, fuel oil hydrogenation units, natural gas purifiers and light hydrocarbon units, providing a good platform for expertise and experience sharing. A number of our highly skilled employees excelled at the 2014 Beijing “ARC Cup” International Welding Contest. Eight CNPC employees won the title of National Technical Master.

Overseas, we are committed to hiring more locals and providing more jobs for local communities. As a multinational enterprise, we embrace a corporate culture valuing respect, openness, inclusiveness and diversity, and treat our employees in a fair and impartial way regardless of nationality, race, gender, religion or cultural background.

Given our oversea business status as well as relevant laws and regulations of the host countries, we have established specific systems for the hiring, training, clocking-in, leave, performance review, promotion, rewards and punishment of local employees. By the end of 2014, local employees accounted for 91% of the total workforce of our overseas projects.

In 2014, training programs for our local employees focused on building management skills and updating technical expertise through on-the-job training, receiving local training services and training in a third-party country or China. This has helped local employees raise their professional knowledge, skills and competences. A total of 8,632 local employees received such training throughout the year. In Turkmenistan, the Amu Darya Project made significant headway in training local management staff, experts and technicians. As the No. 2 Gas Processing Plant went on stream in 2014, 55 local employees were appointed to posts previously held by their Chinese colleagues.

In recent years, our engineering and construction companies established four overseas training centers in Sudan, Kazakhstan, Turkmenistan and Iraq, which have trained about 10,000 local employees. Training programs of various forms have been conducted, which greatly enhanced local employees’ technical competences.

Meanwhile, we have taken the initiative in sponsoring the education programs for the local youth. In Iraq, we have launched cooperation on education, research and training between the University of Basra and the China University of Petroleum (Beijing), which was aimed at improving the skill levels of local employees and preparing young talents for a career in the local oil industry. In Kazakhstan, Trans-Asia Gas Pipeline Company Limited has been covering the tuition and miscellaneous fees of young students, so far involving 10-15 students annually for three years, to support their education at the Kazakh-British Technical University. In 2014, another 14 students were selected to join this program.

In addition, the company recognizes high-performing local employees and regularly selects “Outstanding Employee” or “Excellent Employee” to boost morale and creativity. Those who won the titles can be managers or frontline workers. Some of them have been invited to CNPC headquarters in Beijing, Daqing/Changqing Oilfield or BGP for studying, visits, sightseeing and cultural experiencing.
Technology
In 2014, CNPC continued to improve its technological innovation system and enhanced its research work and field tests. R&D progress in exploration and development, refining and chemicals, oilfield services, storage and transportation, operational safety, environmental friendliness and cutting-edge technologies strongly supported the growth of our oil and gas businesses.

Construction of Technological Innovation System

In 2014, CNPC further improved its technological research system to reallocate and leverage the innovation resources at its affiliated research institutes, technology centers and regional companies. We also accelerated the construction of technology enablement platforms, resulting in enhanced lab/testing capabilities. A total of 16 platforms were selected as state-level infrastructural enablement platforms. With an improved system and supporting environment for innovation-driven development, CNPC has become a more dominant innovator of China’s petroleum technologies.

Major R&D Advancements

Exploration and Development

Improved geological theories and technologies for gas accumulation in deep paleo-marine carbonates guided the rapid identification of China’s largest monomer uncompartmentalized gas reservoir at Longwangmiao Formation of Moxi Block in Anyue Gas Field.

Innovative geological modeling of salt-related structures and understanding of the formation of deep gas reservoirs resulted in major breakthroughs in exploration depth and engineering technologies of extremely-thick salt layers, supporting the construction of Keshen Gas Field with a reserve of more than one trillion cubic meters.

Our world-leading ASP flooding technologies consisting of six packages, including the R&D and production of surfactant series, had been most widely used by our company. These packages cover the entire development process of oilfields and enable the tapping of high-water-cut and high-recovery-degree oilfields that would otherwise be impossible using conventional technologies. In fact, they have improved recovery efficiency by more than 20% over waterflooding.

Our innovative horizontal well and reservoir stimulation technologies for the development of ultra-low-permeability or tight oil and gas reservoirs helped Changqing Oilfield continue to increase its oil and gas output, which exceeded 55 million tons in 2014.

Refining and Chemicals

We successfully developed hydrorefining catalyst series and technical package for the production of ultra-low sulfur content diesel, which meet the demand for upgrading CNPC’s automobile diesel to the National IV/National V standard.

We developed the capacity of independent engineering design for 10Mt/a refineries and rolled out desulfurization and denitration technologies for catalytic cracking flue gas.

Delayed coking was used and worked excellently at seven 1Mt/a coking units, marking major progress in the development and application of the technological package for the processing of inferior heavy oil.

A unit enabled by China’s first package of technologies for large-scale industrial ethylene units with independent intellectual property rights has operated for a long period of time. CNPC has become one of the six patent holders of such packages in the world.

Oilfield Services

Regarding geophysical prospecting, GeoEast Software V3.0 became world leading in terms of functionality and performance and boasted much a higher forecasting precision and utilization rate. With more octaves of excitation signals, our low-frequency seismic technologies improved the capacity of lithology and fluid identification.

In logging, our 15-meter one-string logging devices precisely collected all conventional log curves in a single down-hole pass, shortening the time by more than 30%. A multi-frequency MRI logging unit was added to our family of domestically manufactured imaging logging devices that played important roles in the identification and assessment of complex and unconventional oil and gas reservoirs.

In terms of drilling, a 9,000m quadruple-stand AC VFD drilling rig enhanced comprehensive ROP by approximately 15% in field tests. The 12V175 high-performance diesel engine and an automated drill string handling system were developed. We also completed testing of 21MPa/35MPa snubbing operation equipment for gas wells, which can meet the operational demand of 60% of our gas wells.
Oil & Gas Storage and Transportation

Trial production of 1,219mm X90 and 1,422mm X80 steel plate rolls, sheets, welding pipes and associated fittings, was completed, technically enabling the 1,422mm pipes to be used on the eastern route of the Russia-China Gas Pipeline.

Regarding equipment manufacturing, we completed industrial testing of a 20MW electric compressor unit, developed a 30MW gas-driven compressor unit and SCADA software V1.0, and finished ex-factory verification of domestically manufactured heavy-duty oil transport pumps, mission-critical valves and actuators, and flow meters.

We independently developed a double-circulation mixed-refrigerant process and a circulated multi-stage single-component-refrigerant process for gas liquefaction, and developed the capability to manufacture key equipment, including refrigerant compressors, cold boxes, and low-temperature valves, and build 3.5Mt/a gas liquefaction facilities.

HSE and Energy Conservation

Our special low-carbon R&D led to the development of digital oil pumping units which have been extensively deployed in Changqing Oilfield. We originated recycling of wastewater from heavy oil thermal recovery without removing silicon, resulting in savings in terms of capital investment and operating costs. Important progress was made in heating furnace efficiency. Methods were created to forecast energy conservation potential and assess energy and water conservation in oil and gas fields, and technologies were in place to optimize heat supply systems in our staff communities.

HSE development included technologies for the blowout response of oil and gas wells and disaster-prevention evaluation of large-scale petroleum storage, in addition to two lightning-proof products for external float-roof tanks and six absorbent materials for river oil spills.

Cutting-edge Technology Research

CNPC pays great attention to basic research and advanced research of the industry’s cutting-edge technologies in order to ensure future oil and gas supply. In 2014, we made remarkable progress in the research of unconventional hydrocarbon exploration and development technologies and state-of-the-art refining and petrochemical techniques.

Our basic and proactive research on unconventional and deep oil and gas enriched the geological theories of hydrocarbon generation, drainage, migration, and accumulation mechanisms, improved the parameter system and standards for a new round of resource assessment, and made major progress in lab simulation technologies. We independently developed new technology for the lab testing of three-phase relative permeability. Helping us precisely describe the complex seepage patterns of underground crude oil, the technology will provide a new core approach and theoretical guide for optimizing the development of oil and gas fields. We researched molecule-scale-management-based refining technologies. With a set of methods for the analysis and description of the composition, structure and properties of heavy oil, we drove heavy-oil chemistry towards molecule-scale methodology, and became a world leader in the basic theoretical study of heavy oil processing.

Technological Cooperation

We communicated and worked with IOCs, NOCs, high-end manufacturers, and high-tech players in EOR, unconventional oil and gas development, treatment and recycling of oil-containing sludge, and new engineering technologies. Progress was made in R&D projects, skills training, and technical exchanges. A number of outcomes from our joint R&D efforts have been put into commercial application. We set up a high-level alliance with the Chinese Academy of Sciences (CAS) in line with China’s innovation-driven development strategy, and focused on six prioritized research projects including “R&D and application of elastic wave seismic imaging technologies” for synergistic innovation among industries, colleges, research institutes and enterprises. We also participated in the communication activities of international and industrial organizations to advance our scientific and technological cooperation.

We applied for 5,095 patents, including 2,358 invention patents, both at home and abroad, and were granted 4,049 patents, including 914 invention patents. Nine of our major achievements won China’s national science and technology awards. In particular, “Key Technologies for the Construction and Operation of China’s Strategic Oil and Gas Channels” was awarded the First-class National Scientific and Technological Advancement Award.
Technical Packages for Alkaline-surfactant-polymer (ASP) Flooding Put into Industrial Application

Research on ASP flooding technologies and large-scale field tests have been carried out in Daqing Oilfield with good application results. The technical packages and standard specification system of ASP flooding for EOR were formed. Daqing has thereby become the only oilfield in the world that realized the commercial application of ASP flooding.

Six innovative technical packages have been developed for ASP flooding: (1) A package of diversified technologies for the R&D and production of surfactant series; (2) Technologies for the design of the reservoir engineering program. The reservoir engineering program design method was developed for the first time and put into large-scale application; (3) Technologies for whole process tracing and control. The principle of staged control and implementation standards of main measures were established; (4) Preparation and injection techniques featuring “centralized preparation and dispersed injection” were developed, reducing the occupied area by 50% and costs by 30% compared with the original techniques; (5) Anti-scale lifting technologies. The mechanisms and characteristics of scale forming in oil wells were figured out, and an expert real-time diagnostic system was developed; and (6) Technologies for produced liquid treatment. Difficulties in produced liquid treatment were revealed, with dewatering equipment and treating agents optimized, treatment effects improved, and processing costs reduced.

Oil production by ASP flooding in Daqing Oilfield exceeded 2 million tons in 2014, with recovery efficiency improving by more than 20% on the basis of waterflooding. ASP flooding has become one of the major EOR technologies for Daqing Oilfield, which can help boost oil production to 25 million tons during the 13th Five-Year Plan period and can be applied at similar oilfields at home and abroad.
Exploration and Production

In 2014, we maintained reserve growth by intensifying exploration in China’s major petroliferous basins and target blocks and tapping unconventional resources. We stepped up the construction of major projects and enhanced oilfield management, resulting in steady growth in oil and gas production and increased profitability.

Exploration

In 2014, our domestic exploration resulted in newly proven oil and gas in place of 689.8 million tons and 484 billion cubic meters respectively, and proven oil and gas reserves exceeding 1 billion tons of oil equivalent for the eighth consecutive year. A large part of the newly proven reserves are entrapped in low-permeability, lithological, and deep reservoirs. The reserve-production rate has continuously increased and the reserve replacement ratio remained above 100%, helping to sustain oil and gas production growth.

Major Discoveries

We identified more reserves in Longdong, Shanbei and Jiyuan regions of the Ordos Basin. A high-output oil-rich region was discovered in Mahu sag of the Junggar Basin. Yingdong Oilfield was proved in the Qaidam Basin, featuring large monomer reservoirs of high abundance and favorable physical properties. Several blocks with 10 million tons of reserves were ascertained in Xinzhan region of the Songliao Basin and Leijia region of the Bohai Bay Basin. We also made important breakthroughs in the exploration of tight oil in the Ordos Basin, Songliao Basin and Santanghu Basin. In particular, 100 million tons of tight oil reserves were proved in Chang-7 Series of Changqing’s Xin’ anbian Oilfield.

Gas exploration in the northwestern and central part of the Sichuan Basin proved to be promising by exploration wells in the regions. In the Tarim Basin, a giant premium gas reservoir featuring high abundance and low burial depth was discovered in Kuqa depression, and high-yield industrial gas flows were obtained from the Ordovician System in Tadong region. We also verified three regions with gas reserves of one trillion cubic meters each at Sulige of the Ordos Basin, Gaoshiti-Moxi of the Sichuan Basin, and the deep Kelasu region of the Tarim Basin, respectively.

<table>
<thead>
<tr>
<th>Reserves and operating data (Domestic)</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newly proven oil in place (mmto)</td>
<td>711.00</td>
<td>670.13</td>
<td>689.80</td>
</tr>
<tr>
<td>Newly proven gas in place (bcm)</td>
<td>450.40</td>
<td>492.30</td>
<td>484.00</td>
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<td>2D seismic (kilometers)</td>
<td>23,987</td>
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<td>19,170</td>
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<td>3D seismic (square kilometers)</td>
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<tr>
<td>Exploration wells</td>
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<td>1,746</td>
<td>1,584</td>
</tr>
<tr>
<td>Preliminary prospecting wells</td>
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<td>1,006</td>
<td>910</td>
</tr>
<tr>
<td>Appraisal wells</td>
<td>708</td>
<td>740</td>
<td>674</td>
</tr>
</tbody>
</table>
Development and Production

In 2014, our domestic oil production increased steadily and gas production witnessed rapid growth. The economic benefits of oil and gas field development were boosted by focusing on output with higher profitability, following generally optimized development plans, carrying out finely controlled waterflooding, promoting redevelopment, performing major pilot development, and rolling out horizontal drilling and multi-layer/multi-stage SRV fracturing. We achieved production capacity increments of 13.83 million tons for crude oil and 17.2 billion cubic meters for natural gas. Throughout the year, we produced 189.74 million tons of oil equivalent, up 3.5% year-on-year.

Crude Oil

In 2014, we produced 113.67 million tons of crude oil by scientifically organizing production, stepping up major capacity building projects, rolling out full-life-cycle project management in new oilfields, and increasing recovery efficiency and daily output per well at mature fields. Dqing Oilfield stabilized its production at more than 40 million tons for the 12th consecutive year through finely controlled waterflooding to tap potential, optimized polymer flooding for higher sweep efficiency, massive deployment of ASP flooding and industrial deployment of carbon dioxide flooding. In particular, production by tertiary recovery maintained steady growth to reach 14.02 million tons, exceeding 10 million tons for the 13th consecutive year. Changqing Oilfield achieved an output of 55.45 million tons of oil equivalent by switching from massive capacity building to fine management and improving the “horizontal drilling + SRV fracturing” technique to extract low-permeability, ultra-low-permeability, and tight oil reservoirs. Tuha Oilfield registered highest production growth among CNPC operated oilfields through R&D on heavy oil and tight oil.

Waterflooding in Mature Oilfields

To enhance the oil recovery of mature fields, CNPC switched in 2009 from an approach of injecting a sufficient volume of water to a comprehensive development approach based on finely-controlled and effective water injection. We rolled out separate-layer water injection techniques based on bridge eccentric design and developed techniques of low-flow and slant-well/ultra-deep-well separate layer water injection, resulting in an average natural decline rate drop from 13.8% in 2008 to 10.35% in 2014, with an accumulative decrease in crude decline of 16 million tons, and the rise in the water cut being less than 0.5% for the fifth consecutive year.

As a major production stabilizer, waterflooding contributed 64% to the total output of Daqing Oilfield, thanks to adjustment of the injection/production system and fine stimulation measures adopted to tap the potential of oil wells. At Changyuan Oilfield, output by waterflooding continued to increase to 18.8 million tons in 2014. Tuha Oilfield has performed the waterflood control program for five years. During such a period, the profile water-intake thickness ratio of water flooded blocks increased from 73.4% to 82.2%, the natural decline rate and water cut rise were effectively controlled, and the recovery factor increased by 2.5%, thanks to separate layer water injection, boosted water injection volume, and chemical-based profile control.

Pilot Development

In 2014, we pushed forward with research programs and pilot development targeting heavy oil, high-water-cut and unconventional reservoirs, and carried out the industrial application of chemical flooding and fireflooding. Research on ASP flooding technologies and large-scale tests was carried out in Dqing Oilfield with good application results. The technical packages and standard specification system of ASP flooding for EOR were formed. A 300kt/a polymer flooding project for conglomerate reservoirs was formally put into operation in Xinjiang. Fireflooding projects were deployed in Liaohle Oilfield and Xinjiang Oilfield, producing 350,000 tons of oil per year and increasing recovery by 30%. SAGD enabled six ultra-heavy oil wells in Liaohle Oilfield to reach a daily output of 100 tons each through intensified field organization and follow-up adjustment. The gas-oil ratio significantly improved in SAGD tests in Xinjiang Oilfield. A five-year air/foam flooding test greatly increased the rate of producible reserves and decreased the rate of production decline and the rate of the rise in the water cut in Changqing Oilfield.
Natural Gas
In 2014, we produced 95.46 billion cubic meters of natural gas domestically, an increase of 7.5% year-on-year. Gas output from Changqing Oilfield reached 38.15 billion cubic meters, accounting for one-third of China’s total, thanks to the continued application of cluster well groups, horizontal wells and fracturing stimulation. Tarim Oilfield produced 23.55 billion cubic meters of natural gas by speeding up the development of the gas reservoir at Longwangmiao Formation of Moxi Block and adjusting mature blocks. Southwest Oil and Gas Field produced 13.73 billion cubic meters of gas, up 8.9% year-on-year, by accelerating capacity building at the Longwangmiao Formation of Moxi Block and adjusting mature blocks. Qinghai Oilfield saw steady growth in its gas output by balancing the production of the three major gas fields in Sebei region, and advancing capacity building at Dongping-Niudong Gas Field.

Sulige Gas Field
Sulige, located in the Ordos Basin, is a tight sandstone gas field featuring low permeability, low pressure and low abundance. Its gas output has been increasing at a steady rate, thanks to support from a series of dewatering gas recovery technologies mainly consisting of foam dewatering assisted by velocity strings, plunger lifts and compressor-based lifts developed after years of pioneering work. The field has accumulatively produced more than 100 billion cubic meters of natural gas since been put into development. In 2014, Sulige became the largest gas field in China, with additional capacity of 3.11 billion cubic meters per year, and produced 23.65 billion cubic meters of natural gas.

Gas Reservoir at Longwangmiao Formation in Anyue Gas Field
In 2014, CNPC proved 440.3 billion cubic meters of natural gas in place and 308.2 billion cubic meters of technically recoverable reserves from a gas reservoir at Longwangmiao Formation of Moxi Block in the Sichuan Basin. This reservoir has so far been the largest monomer uncompartmentalized marine-facies carbonate gas reservoir in China. The 4bcm/a Phase-I development project commenced its operation on October 8, 2014. The development wells have already started producing an average of 830,000 cubic meters of gas per day per well, and reached an output of 2.97 billion cubic meters in 2014.

Exploration and Development of Unconventional Oil and Gas
CNPC attaches great importance to the exploration and development of CBM, shale gas, shale oil, tight gas, tight oil and other unconventional hydrocarbon resources, and made steady progress in 2014.

CBM
In 2014, we supplied 1.37 billion cubic meters of commercial CBM to the market, an increase of 57.7% year-on-year. In particular, 750 million cubic meters were produced in Qinshui Basin of Shanxi, and 620 million cubic meters, up 192% year-on-year, from the eastern edge of the Ordos Basin, thanks to the fine drainage to control bottom hole flowing pressure and pilot development in the Daning-Jixian block.

Shale Gas
We continuously promoted research and application of shale gas exploration and development technologies and accelerated the pace in tapping this kind of unconventional resources. A total of 41 horizontal wells were drilled in 2014, producing 177 million cubic meters of shale gas. In April and October, the trunk pipeline for the trial production in Changning Block and the trunk pipeline from Weiyuan Block began supplying shale gas from Sichuan to the major Sichuan-Chongqing pipeline network, respectively. We also accelerated shale gas development through cooperation with both domestic and international partners, risk operation, and independent operation.

Tight Oil
The abundant tight oil potential in China’s Ordos, Junggar, Songliao, Sichuan, and Qaidam basins provides a solid resource base for our oil and gas development. In 2014, we made important breakthroughs through intensified exploration and development in the Ordos, Songliao, and Santanghu basins. In particular, we identified 359 million tons of proved and possible oil in place in Chang-7 Series of Xin’anbian Block in the Ordos Basin, and found an additional 184 million tons of controlled and possible oil in place in Qijia and Weixing blocks in the Songliao Basin.

We primarily developed tight oil using long horizontal intervals, casing cementing, fast drillable bridge plugs, high-flowrate operation, and SRV fracturing technologies. Industrial development had been initiated in the pilot zones of Chang-7 in Changqing Oilfield, Santanghu in Tuha Oilfield, and Yuanping in Daqing Oilfield, with the capacity to produce nearly one million tons of tight oil per year.
Joint E&P in China

As authorized by the Chinese government, CNPC works with international partners to explore and develop oil and gas resources in China. Most of the joint projects concern low-permeability reservoirs, heavy oil, tidal and shallow water zones, sour gas, high-temperature and high-pressure gas reservoirs, CBM and shale gas.

By the end of 2014, we had 35 joint exploration and development projects in operation, including 15 for crude oil, nine for natural gas, 10 for CBM and one for shale gas. In 2014, these projects produced 4.15 million tons of crude oil and 6.34 billion cubic meters of natural gas, which totaled 9.20 million tons of oil equivalent, up 11.2% year-on-year.

Executive Summary of Major Projects

Changbei Natural Gas Project

The 1,691-square-kilometer Changbei Block is our joint block with Shell Group. In 2014, the block maintained a high output of 3.68 billion cubic meters of natural gas.

South Sulige Natural Gas Project

South Sulige Block is located in the Ordos Basin, covering an area of 2,392 square kilometers. Total is our partner in the project. In 2014, the block produced 1.58 billion cubic meters of natural gas, or more than one million tons of oil equivalent. The matching technologies for tight gas development represented by factory-like drilling and completion and sequential fracturing and gas testing operations were improved and widely applied in our independent operations in China. The project was named “Global Project of Excellence” by Total.

Chuandongbei Natural Gas Project

Chuandongbei Natural Gas Project is located in the northeast of Sichuan Province, covering an area of 876 square kilometers. Chevron is our partner in the project. By the end of 2014, main bodies of well site A, the purification plant and the sulfur plant had been completed. Gas production is expected to commence in October 2015.

<table>
<thead>
<tr>
<th>4.15</th>
<th>Crude output from joint E&amp;P projects (mmt)</th>
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</thead>
<tbody>
<tr>
<td>6.34</td>
<td>Natural gas output from joint E&amp;P projects (bcm)</td>
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</table>
Natural Gas and Pipelines

2014 saw continued rapid momentum in our natural gas business. Gas production from major producing regions experienced steady growth. Construction of pipelines and gas storages in key regions witnessed steady progress. All of this contributed to the rapid growth of both gas production and sales, and significantly enhanced our market deliverability. In 2014, we sold 119.48 billion cubic meters of natural gas, an increase of 8.1% year-on-year.

By the end of 2014, we operated 79,054 kilometers of pipelines in China, including 18,132 kilometers for crude oil, 50,836 kilometers for natural gas and 10,086 kilometers for refined products, around 70%, 78% and 47% of China's total respectively.

Pipeline Operation and Control

In 2014, our nationwide pipeline networks operated in a stable, balanced, efficient and controlled manner under centralized control and management. In particular, crude pipeline operations were optimized. We controlled the pace of pipeline construction and improved domestic trunk pipeline networks, underground gas storages and LNG terminals based on gas resources and the market. By doing so, we have built a system featuring diversified resources, flexible dispatching and efficient operation to supply the domestic market as well as peak shaving capacity in case of emergency.

Underground Gas Storages

In 2014, our new underground gas storages at Hutubi in Xinjiang and Suqiao in Huabei Oilfield, in addition to the existing ones in Dagang and Jintan, performed effectively in terms of seasonal peak shaving and gas supply for emergency response. Bannan Underground Gas Storage in Dagang was put into production and is expected to mitigate the tight gas supply in Beijing, Tianjin and Hebei. In 2014, Xiangguosi Underground Gas Storage obtained peak shaving and gas collection capacity by receiving 1.66 billion cubic meters of natural gas. In fact, it played an important role in seasonal peak shaving and emergency response of our nationwide trunk network, as well as strategic storage.

Storage and Transportation Facilities

In 2014, the western section of the Third West-East Gas Pipeline was completed. Moreover, a number of trunk lines and branches were completed and became operational, including the Third Shaanxi-Beijing Gas Pipeline, the Hohhot-Baotou-Ordos Products Pipeline, the Jilin-Changchun Products Pipeline and the Tianshui Branch of Zhongwei-Guiyang Pipeline. Progress was made in the construction of the Fourth Shaanxi-Beijing Gas Pipeline and the Jinzhou-Zhengzhou Products Pipeline.

The Third West-East Gas Pipeline

The Third West-East Gas Pipeline, including one trunk and eight branches, runs from Horgos in Xinjiang to Fuzhou in Fujian, with a total length of 7,378 kilometers. The 5,220km-long trunk line has a designed pipe diameter of 1,016-1,219mm, transport pressure of 10-12MPa and an annual delivery capacity of 30 billion cubic meters. It has been constructed and put into production on a section-by-section basis.

Construction of its western section commenced in October 2012. The western section runs from Horgos to Zhongwei in the Ningxia Hui Autonomous Region, with a total length of 2,445 kilometers, including the 670km-long section from Horgos to Urumqi and the 1,789km-long section from Urumqi to Zhongwei. It has a designed pipe diameter of 1,219mm, transport pressure of 12MPa and an annual delivery capacity of 30 billion cubic meters. This section was completed on August 25, 2014. The eastern section runs from Ji’an in Jiangxi Province to Fuzhou in Fujian Province, with a total length of 825 kilometers. It has a designed transport pressure of 10MPa, a pipe diameter of 1,016-1,219mm, and an annual delivery capacity of 15 billion cubic meters. Construction of this section commenced in May 2013, and is expected to be completed by the end of 2015.

The Third Shaanxi-Beijing Gas Pipeline

The Third Shaanxi-Beijing Pipeline runs from Yulin in Shaanxi in the west to Xishatun in Beijing in the east, with a total length of 1,011 kilometers. It has a designed pipe diameter of 1,016mm, transport pressure of 10MPa and an annual delivery capacity of 15 billion cubic meters. The pipeline includes a section of more than 400 kilometers in length running in parallel to the Second Shaanxi-Beijing Pipeline already in operation. Its Yulin-Liangxiang section was put into production on December 31, 2010, and the Liangxiang-Xishatun section completed natural gas displacement and began to supply gas to urban pipes on January 7, 2015. This marked the completion and launch of the entire pipeline, which will supply clean energy to the Bohai Rim Economic Circle, thereby mitigating the tight gas supply in Beijing, optimizing the energy structure and improving the environment.
Hohhot-Baotou-Ordos Products Pipeline

The Hohhot-Baotou-Ordos Products Pipeline, consisting of one trunk and one branch, is 316.5 kilometers long. The trunk runs from Hohhot Initial Station in Inner Mongolia, through Saihan District, Yuquan District, and Tumotezuo Qi of Hohhot City, Tumoteyou Qi of Baotou City, Dalate Qi and Dongsheng District of Ordos City, and ends at Ordos Terminal Station. The pipeline is designed to transport 3.5 million tons of refined products per year. It was launched on June 10, 2012 and became operational on June 18, 2014. It is the first products pipeline connecting Hohhot to Ordos, and will further optimize the products pipeline network in northwestern China.

Natural Gas Utilization and Marketing

CNPC has built a nationwide gas supply grid centered on the West-East and the Shaanxi-Beijing gas pipelines, covering 29 provinces, municipalities and autonomous region as well as Hong Kong SAR in China. In 2014, CNPC maintained stable supply during peak seasons by optimally deploying gas imported through pipelines and gas imported as LNG, despite changing market supply and demand and the growing difference between peak demand in winter and off-peak demand in summer. In addition, we successfully sold natural gas at promotional prices and LNG at profitable prices by communicating and coordinating with local governments and users. We also tapped potential from the major and profitable markets of the Bohai Rim, Yangtze Delta and Zhujiang Delta, and actively developed high-end users. All of this helped us increase overall profits. We sold 119.48 billion cubic meters of natural gas throughout the year, an increase of 8.1% year-on-year.

Our gas utilization business continued to expand, focusing on scale and economic benefits. We had 4.18 million urban gas customers of different types. Progress was made in the development and construction of our CNG sale terminal network, through which 1.66 billion cubic meters of compressed natural gas was sold in 2014.

Liquefied Natural Gas (LNG)

In 2014, we developed the LNG market and built LNG facilities to support the “substitution of natural gas for oil” program. A 5Mcm/d LNG plant was completed and became operational in Hubei Province, which will produce LNG products totaling 2 billion cubic meters of natural gas equivalent per year, and become an LNG supply base in Central and Southern China. A 600kt LNG plant, equipped with domestically manufactured liquefaction facilities, was operational in Tai’an, Shandong Province. Development of LNG-fueled vehicles and LNG filling stations saw progress. An LNG plant as part of a comprehensive coke oven gas recycling project for energy conservation and emission reduction was built and made operational by Kunlun Energy Company in Wuhai City of Inner Mongolia. The project will supply LNG as a clean energy to central and western Inner Mongolia as well as surrounding provinces and cities, helping to improve the structure of energy consumption in those regions.

Our LNG terminals in Jiangsu, Dalian and Tangshan have done a good job in peak shaving since they became operational. In 2014, 2.83 billion cubic meters of natural gas which was gasified from imported LNG was delivered by truck from the Jiangsu terminal, 2.19 billion cubic meters by truck from the Tangshan terminal, and 2.14 billion cubic meters by truck (vessels) from the Dalian terminal, stabilizing the gas supply to the Yangtze Delta, Beijing, Tianjin, Hebei and Northeast China.
Refining and Chemicals

In 2014, in response to changing market demand, we optimized crude resource allocation and refined products portfolio, and reasonably controlled the load of our refining and chemical units, resulting in further improved business profitability and safe and stable operation of facilities.

A total of 20 major technical and economic indicators improved compared to 2013, with light oil yield and ethylene and propylene yields taking the lead in the industry. Domestically, we processed 150.16 million tons of crude, and produced 101.84 million tons of refined products and 4.98 million tons of ethylene, up 3%, 4% and 25% year-on-year, respectively. Our refining technologies were further upgraded to supply cleaner and more efficient oil products to the market. The contributions of high-efficiency products and jet fuels increased. High-efficiency products accounted for 42.3%, up 7.4% year-on-year. In addition, we produced 5.69 million tons of 95° and higher grade gasoline, 5.45 million tons of National V standard refined products, and 7.11 million tons of jet fuels, up 13.9%, 177% and 18.3% year-on-year, respectively.

Construction and Operation of Large Refining Bases

Our major large petrochemical facilities in China operated smoothly in 2014. Hohhot Petrochemical exceeded its annual targets by improving management and profitability. The 5Mt/a refining unit at Ningxia Petrochemical continuously and smoothly operated for 800 days.

Construction of major refining and chemical projects proceeded steadily. All the 19 main units of Sichuan Petrochemical’s integrated refining/petrochemical project were put into production. The residue hydrogenation and other seven units of Guangxi Petrochemical’s matching works for sour oil processing were started. Dalian West Pacific Petrochemical’s 1.5Mt/a continuous reforming unit was completed and delivered. Construction of Yunnan Petrochemical, Guangdong Petrochemical, and the centralized heavy oil processing and upgrading works at Karamay Petrochemical proceeded well as planned.

<table>
<thead>
<tr>
<th>Refining and chemicals operating data (Domestic)</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude runs (mmt)</td>
<td>147.16</td>
<td>146.02</td>
<td>150.16</td>
</tr>
<tr>
<td>Utilization rate of refining units (%)</td>
<td>89.5</td>
<td>86.9</td>
<td>82.6</td>
</tr>
<tr>
<td>Refine products output (mmt)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gasoline</td>
<td>96.38</td>
<td>97.90</td>
<td>101.84</td>
</tr>
<tr>
<td>Kerosene</td>
<td>31.00</td>
<td>32.97</td>
<td>34.10</td>
</tr>
<tr>
<td>Diesel</td>
<td>4.78</td>
<td>6.06</td>
<td>7.14</td>
</tr>
<tr>
<td>Lubricating oil output (mmt)</td>
<td>60.61</td>
<td>58.87</td>
<td>60.60</td>
</tr>
<tr>
<td>Ethylene output (mmt)</td>
<td>1.84</td>
<td>1.89</td>
<td>1.58</td>
</tr>
<tr>
<td>Synthetic resin output (mmt)</td>
<td>3.69</td>
<td>3.98</td>
<td>4.98</td>
</tr>
<tr>
<td>Synthetic fiber output (mmt)</td>
<td>6.18</td>
<td>6.64</td>
<td>8.07</td>
</tr>
<tr>
<td>Synthetic rubber output (mmt)</td>
<td>0.09</td>
<td>0.07</td>
<td>0.07</td>
</tr>
<tr>
<td>Urea output (mmt)</td>
<td>0.63</td>
<td>0.67</td>
<td>0.75</td>
</tr>
<tr>
<td>Synthetic ammonia output (mmt)</td>
<td>4.41</td>
<td>3.77</td>
<td>2.66</td>
</tr>
</tbody>
</table>
Marketing and Sales

In 2014, the market-oriented optimization of our sales structure and product portfolio resulted in strong supply capacity and enhanced profitability through reasonable marketing arrangements and innovative operating modes.

Refined Products

We sold 117.02 million tons of refined products in 2014. In particular, retail sales were 83.21 million tons. The sales volume of high-efficiency products, including high-grade gasoline and jet fuel, saw fast growth. The marketing capabilities of our service stations continued to improve, with a steady increase in average daily sales per station.

Upgrading of Refined Products and Development of New Products

China's widespread smog necessitates immediate action to prevent and control air pollution. In June 2014, the National Energy Administration issued the Upgrading Plan of Refined Products for Air Pollution Prevention and Control. As one of the major suppliers of refined products in China, CNPC assumes responsibility to provide clean oil and is upgrading gasoline and diesel products at a faster pace. Following the upgrading of automobile gasoline to the National IV standard in 2013, we started to upgrade our automobile diesel to the National IV standard in 2014. When the 13 oil products upgrading projects are completed and become operational, we will supply automobile diesel in compliance with the National IV standard by 2015. In addition, some of our enterprises were ready to produce automobile gasoline and diesel in compliance with the National V standard, and began to supply such products to Beijing, Tianjin, and other major cities in Hebei Province, the Yangtze Delta and the Zhujiang Delta.

In 2014, we launched 62 new petrochemical products with a total output of 740,000 tons. In particular, our PA14D took 30% share in the domestic market and was recognized as a "Renowned Brand of the Petroleum and Petrochemical Industry". Major breakthroughs were obtained in the industrialization of environmentally-friendly synthetic rubber technologies. Technical packages for environmentally-friendly NBR and SBR and supporting extender oil have been put into industrial production at Dushanzi Petrochemical, Lanzhou Petrochemical, Karamay Petrochemical and Liaohe Petrochemical. Our ABS and ESBR became designated suppliers to Haier Group and Goodyear, respectively. Our PERT, EPDM, and asphalt modifier became unique and popular products on the market.

Marketing Network

We built the marketing network and optimized its layout through joint ventures, cooperation, operating leasing, franchising and joint service station development. In 2014, 485 new service stations were put into operation, adding 1.57 million tons to the existing retailing capacity. Nine oil depots were built, reconstructed or expanded, increasing the storage capacity by 790,000 tons. Chengdu Oil Depot was formally put into operation. It not only ensures the steady operation of Sichuan Petrochemical, but also improves our refined products supply to southwestern China. By the end of 2014, we had 20,386 service stations in 31 provinces, municipalities, and autonomous regions as well as Hong Kong SAR in China, and had issued 64 million Kunlun fuel cards that accounted for 39.4% of total sales. In 2014, the Kunlun fuel card was recognized as the "Most Reputable Brand" at the 5th Prepaid Card Industry Summit of China. In addition, we continuously improved the Internet service channel by launching online recharging, creating a trading value of RMB 547 million in 2014. We also reorganized www.95504.net which was launched in 2011 and introduced the Micro Message service platform named "uSmile e-Station", attracting 456,000 registrations.

Non-Fuel Products

In 2014, our non-fuel products maintained sound growth and rising profitability, reporting a revenue of RMB 9.88 billion and a profit of RMB 1.02 billion, exceeding RMB one billion for the first time, while profits increased by 1.7%. We also registered a 5.4% increase in per store profit from our uSmile convenience stores, 28% of which earned an annual revenue of more than RMB 500,000.

Lube Oil

In 2014, we sold 1.53 million tons of lube oil (grease), including 880,000 tons of premium lube, by integrating trading, production, research and marketing, initiating pilot sales, and enhancing the marketing of premium products including "New Tianrun" for greater economic benefits. The Kunlun Tianrun family was upgraded and launched in new packages. Multiple series with different anti-abrasion characteristics cater to different markets and vehicles.
Overseas Oil and Gas Operations

Despite the risks and challenges caused by the changing geopolitical and investment environment, our overseas oil and gas operations achieved their objectives safely and steadily in 2014, thanks to enhanced management and risk prevention. A number of major projects and capacity expansion works proceeded smoothly. New breakthroughs were made in Central Asia-Russia, the Middle East and Latin America, enhancing our capability for sustainable business growth in the regions.

Exploration and Development

Our enhanced research and exploration efforts in conventional, deep-sea, and unconventional resources resulted in major breakthroughs and progress in multiple aspects. Newly added reserves from our overseas cooperation regions were more than 100 million tons for the sixth consecutive year.

Progressive exploration: Discoveries included a new oilfield with 50 million tons of reserves in Hilba structure zone of Block 4 in Sudan, a potential reserve of 100 million tons of oil in the east-central part of Block T of the Andes project in Ecuador, and high-yield oil flows from the southern part of the Central Block of the Pre-Caspian Basin. Exploration prospect of the lithological structure in the western slope of Hope Oilfield proved to be promising. And high-yield gas flows were obtained from Jabung Block in Indonesia.

Risk exploration: High-yield gas flows were obtained from geological structures in the eastern part of Amu Darya in Turkmenistan. An oil reserve of 100 million tons was identified in the buried hill reservoirs of the Bongor Basin in Chad. Significant progress was made in the exploration of the Agadem Block in Niger.

Offshore exploration: Tremendous reserves were proved in the western structure and central structure of the Libra project in Brazil. High-yield gas flows were obtained from the Poseidon project in Western Australia. Successful assessment of the Agulha gas reservoirs of Block 4 in Mozambique revealed many more reserves.

Production

In 2014, we kept our production stable, efficient and generally under control, and maintained steady growth in oil and gas output by optimizing the production rate and implementing waterflooding, horizontal drilling and EOR measures. In particular, the Amu Darya project in Turkmenistan, the Halfaya project in Iraq, the Agadem project in Niger, and the MPE3 project in Venezuela exceeded their annual objectives. We produced 127.47 million tons of oil equivalent throughout the year, of which CNPC’s share was 65.20 million tons. Total production included 107.62 million tons of crude oil and 24.9 billion cubic meters of natural gas, with CNPC’s share being 50.50 million tons and 18.45 billion cubic meters respectively.

Central Asia: Our projects in Kazakhstan maintained stable oil and gas production by optimizing management. The capacity building project at Zhanazhol’s A-South gas-in-gas-cap field of AktobeMunaiGas was put into production with a production capacity of 2.2 billion cubic meters of natural gas per year. In 2014, the Mangystau project produced a record 6.28 million tons of oil by tapping high-water-cut residual oil through enhanced study on reservoir geology, intensified drilling and stimulation measures of new wells, improved flood patterns, and finely controlled waterflood. The Amu Darya project in Turkmenistan operated smoothly and has had an output of more than 30 billion cubic meters of natural gas since its launch in 2009. It was also recognized as CNPC’s “Safe Work of Excellence” for the sixth consecutive year due to its 150 million safe working-hours.
Latin America: Our projects in Latin America maintained safe and steady production which exceeded expectations through enhanced coordination and fine management. The MPE3 Project in Venezuela increased its crude output from 137,000 bbl/d at the beginning of the year to 163,000 bbl/d by optimizing new well locations, speeding up drilling deployment and new-well commissioning, and enhancing oilfield production management. The Andes project in Ecuador maintained steady oil and gas production by enhancing fine management, comprehensively tapping oilfield potential, and optimizing the deployment of new well site locations. Production at Block 6/7 project in Peru exceeded 4,000 barrels per day by enhancing stimulation measures, rejuvenating long idle wells, and scientifically transforming the production mode of oil wells. We received all of the shares in the Peruvian petroleum assets we acquired from Petrobras. These assets maintained steady production. The Libra project in Brazil operated better than expected. Its general plan of oilfield development was finalized. Important oil and gas discoveries from two spudded exploration wells indicated its tremendous exploration potential.

Middle East: In 2014, our projects in Iraq maintained a high oil output of 49.92 million tons by optimizing the oil-well production system, speeding up the commissioning of new wells, and the continued application of waterflooding. The Rumaila project mitigated a production decline through optimized management and intensified pace of converting oil wells to water injection wells. Phase-II construction of the Halfaya project was put into production ahead of schedule, pushing the daily output of the oilfield to the designed 200,000 bbl/d, and construction of Phase-III project commenced. The Al-Ahdb project reversed its decline in oil output by building ESP wells, converting oil wells to water-injection wells, and optimizing mature wells. In 2014, it produced 7.08 million tons of oil, of which 6.93 million tons were exported.

Pipeline Construction and Operation

In 2014, we operated 15,218 kilometers of overseas oil/gas pipelines, including 7,653 kilometers of crude pipelines and 7,565 kilometers of gas pipelines, which transported 46.93 million tons of crude and 36.6 billion cubic meters of natural gas throughout the year. The Central Asia-China Gas Pipeline, the Kazakhstan-China Crude Pipeline, and the Russia-China Crude Pipeline saw safe and steady operations. Major pipeline construction projects proceeded smoothly. Line C of the Central Asia-China Gas Pipeline became operational with a capacity to transport 14 billion cubic meters of natural gas per year. The construction of the Tajik section of Line D of the Central Asia-China Gas Pipeline and the Russian section of the Russia-China Gas Pipeline commenced.

Line C of the Central Asia-China Gas Pipeline starts at the Turkmen-Uzbek border city of Gdaim and runs through Uzbekistan and Kazakhstan before reaching Horgos in China’s Xinjiang Uygur Autonomous Region, where it joins the Third West-East Gas Pipeline. Line C runs in parallel to Line A and B, with a total length of 1,830 kilometers and a designed capacity of 25 billion cubic meters per year. It commenced in September 2012 and became operational on May 31, 2014. Upon the completion of all of the supporting facilities by the end of 2015, Line C will reach its designed capacity, boosting the overall delivery capacity of the Central Asia-China Gas Pipeline to 55 billion cubic meters per year, equal to more than one-fifth of China’s annual natural gas consumption. By the end of 2014, the Central Asia-China Gas Pipeline had operated safely and steadily for five years, and transported 104.7 billion cubic meters of gas. Moreover, the pipeline is the winner of China’s Golden Award for Construction Excellence.

Refining and Chemicals

In 2014, our overseas refineries processed 46.82 million tons of crude oil. The Khartoum Refinery in Sudan, the N’Djamena Refinery in Chad and the Zinder Refinery in Niger were overhauled and fulfilled their annual production targets. The KAR Refinery in Iraq and the Soralahin Refinery in Algeria were reconstructed or expanded as planned. In Kazakhstan, a reconstruction project at the Shymkent Refinery and an upgrading project at the PK Refinery proceeded smoothly.

Project Cooperation and Development

2014 saw substantial returns from our cooperation with Russia and Central Asian countries. As part of our ongoing efforts to play an active role in global energy supply, CNPC signed a number of cooperation agreements with Mongolia, Myanmar, Peru, Cuba, Pakistan and Venezuela, forging closer partnerships with our partners.

Central Asia-Russia: We continued to develop our cooperation with Russia. In 2014, we reaped impressive returns from our cooperation with Russian energy companies. In May, CNPC and Gazprom signed a purchase and sales contract on gas imports from Russia via the eastern route of the Russia-China Gas Pipeline. Under the contract, Russia will supply China with 38 billion cubic meters of natural gas per year via the eastern route for 30 years from 2018. CNPC also signed a contract with Russia’s Novatek to purchase 3 million tons of LNG annually from Yamal for 20 years. In another step forward for gas cooperation, CNPC and Gazprom signed a technical agreement on the construction and operation of the eastern route of the Russia-China Gas Pipeline and a framework agreement on gas imports from Russia via the western route in October and November, respectively. In November, CNPC and Rosneft signed a cooperation framework agreement on the Vankor Oilfield project, marking a new breakthrough in upstream cooperation.

Steady progress in the construction of the Central Asia Demonstration Area for oil and gas cooperation was demonstrated by a number of cooperation documents including: a framework agreement with KazMunayGas on building a large diameter steel pipe plant in Kazakhstan, an agreement with Tajiktransgaz on jointly establishing a natural gas pipeline company to manage the construction of Line D of the Central Asia-China Gas Pipeline,
International Trade

In 2014, our international trade saw further improvement in both volume and operation performance supported by overseas operation centers and distribution networks. CNPC made excellent profits from the trading of crude oil, refined products, natural gas and petrochemicals through imports and exports, consigned processing, transportation, storage, wholesaling, and retailing, as well as international carbon trading and transactions in oil futures. In 2014, we reported 386 million tons in trade volume and USD 265.3 billion in trade value, reaching markets in over 80 countries and regions, including the world’s major oil and gas producers and consumers.

In 2014, our crude trade volume was 230 million tons, up 4.9% year-on-year. We reduced the purchasing costs of refineries by optimizing logistics and groupage. We participated in the trading of physical BFEO contracts for the first time by establishing a portfolio benchmarked by Brent Complex, and took a further step in the WTI Complex. In addition, we supplied oil to refineries in Turkey, Croatia and Greece for the first time.

Our refined products trade volume was 100 million tons, up 7.3% year-on-year. In addition to the existing market in Asia, we developed new markets in eastern Africa, northern Africa, the Middle East and South America. We were one of the leading diesel suppliers in eastern Africa. Our market share greatly increased in the jet fuel market in Ireland, Hong Kong and Vietnam. Jinzhou Petrochemical and Singapore Refinery began selling jet fuel to western Africa. Our gasoline market share in Pakistan and the United Arab Emirates kept increasing.

Our natural gas trade volume was 57.6 billion cubic meters, up 53% year-on-year. Supplies from the Central Asia-China Gas Pipeline, the Myanmar-China Gas Pipeline, long-term LNG deals, and spot LNG deals in winter were ensured. Both the volume and profit of the pipeline-gas business in the US, Canada, and Europe were increased. We improved our paper hedging capacity by incorporating the global paper LNG operating team.

Despite the gloomy in chemicals market conditions, we made good profits by improving trading professionalism through the combination of production, financing and hedging. We began to sell urea directly to the US.

We took advantage of our three oil and gas operation centers to better optimize our global resources. The Asian center remained the leader in the East Asian fuel market and the largest refueling service provider for vessels and aircraft in Hong Kong. It also became the largest refueling service provider for vessels in Taiwan and began providing refueling service to airports in the region; and exported fertilizer to South Korea for the first time. Despite a market decline, the European center expanded its geographical coverage of oil sales and became the most important supplier of jet fuel in southern France. In addition, its physical trading of natural gas and electricity took shape. The American center traded crude for the first time in the US and became more influential in trade referencing Gulf Coast crude. It also conducted crude and gasoline blending and became one of the large crude traders in the Bakken region. The center also enhanced its control of crude and refined product resources in South America.
Oilfield Services, Engineering & Construction, and Equipment Manufacturing

In 2014, we continued to speed up the transformation and upgrading of the oilfield services, engineering & construction, and equipment manufacturing sectors, enhance innovation of technologies and management, optimize business structure, and expand the high-end market. These efforts has led to further improved market competitiveness and technological competence in supporting our oil and gas businesses. Globally, we provide technical services in geophysical prospecting, well drilling, well logging and mud logging, downhole operation, as well as construction and engineering services for oil/gas field surface works, large refining and chemical installations, pipelines and storage facilities. Our petroleum equipment and materials were exported to 80 countries and regions through a marketing network covering all major oil producing states around the world.

Oilfield Services

2014 saw increased operational efficiency in our oilfield services, thanks to enhanced innovation in technology and management, and the application of suitable technologies and processes including horizontal well drilling, underbalanced well drilling, snubbing operations, and reservoir stimulation, and the roll-out of factory-like operations.

Geophysical Prospecting

In 2014, CNPC deployed 180 seismic crew-times (85 2D and 95 3D crew-times), 10 VSP crew-times, and 29 non-seismic (gravity and magnetic survey, electric survey, and geochemical exploration) crew-times. We acquired data on 103,645 kilometers of 2D lines and 65,990 square kilometers of 3D profiles.

KLSeis II seismic acquisition software system, the GeoEast-ESP real-time micro-seismic monitoring system, and the GeoGME V2.0 processing and interpretation system for gravity, magnetic and electric survey data independently developed by BGP worked well in oil and gas fields at home and abroad. HAWK nodal systems were extensively deployed, significantly saving costs and operating time, and helping set the highest production records in loess-mountain exploration.

Internationally, we won 3D seismic contracts for the KOC transition zone in Kuwait, S77 in Saudi Arabia, and Genting in Indonesia. In addition, we completed United Energy’s project in Pakistan and Shell’s OML 17-Agome 3D Reshoot in Nigeria, and initiated the 3D seismic projects at the KOC transition zone in Kuwait, and S77 and S76 in Saudi Arabia.

Geophysical prospecting operations

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seismic crews in operation</td>
<td>168</td>
<td>165</td>
<td>166</td>
</tr>
<tr>
<td>Domestic</td>
<td>102</td>
<td>95</td>
<td>96</td>
</tr>
<tr>
<td>Overseas</td>
<td>66</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>2D seismic data acquired (kilometers)</td>
<td>96,739</td>
<td>114,364</td>
<td>103,645</td>
</tr>
<tr>
<td>Domestic</td>
<td>41,391</td>
<td>40,274</td>
<td>42,798</td>
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<tr>
<td>Overseas</td>
<td>55,348</td>
<td>74,090</td>
<td>60,847</td>
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<tr>
<td>3D seismic data acquired (square kilometers)</td>
<td>57,682</td>
<td>64,491</td>
<td>63,990</td>
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<tr>
<td>Domestic</td>
<td>17,900</td>
<td>17,542</td>
<td>14,485</td>
</tr>
<tr>
<td>Overseas</td>
<td>39,782</td>
<td>46,949</td>
<td>49,505</td>
</tr>
</tbody>
</table>
In 2014, we completed 24 deepwater prospecting projects, acquiring data on 52,836 kilometers of 2D lines and 16,055 square kilometers of 3D profiles, up 5% and 31.4% year-on-year, respectively. Our deepwater operation fleet was recognized by the owners of multiple exploration projects in Brazil and Uruguay for its operating excellence.

We expanded our high-end geophysical prospecting services’ market share by enhancing R&D in core software and equipment. GeoEast V2.6, one of our independently developed software systems, was significantly improved in terms of both its functions and performance. It boasted major breakthroughs in the key technologies of prestack migration imaging, OVT processing, and 5D interpretation, and included three series of technologies for prestack migration using integration, Gaussian beam, and wave equation. In fact, the software became more efficient than any other commercial software of its kind and met the needs of high-precision imaging for lithological blocks in complex structures and formations in China. KZ28L/FV3 low-frequency vibroseis was put into wide application and working well in low-frequency data acquisition projects. KLEISII, the world-leading new-generation open engineering software for seismic acquisition, was continuously improved to support the development of seismic technologies toward wide azimuth, broadband and high density.

**Well Drilling**

In 2014, our 1,018 drilling rigs spudded 12,294 wells and completed 12,286 wells, with a total footage of 24.92 million meters. The average drilling cycle was reduced by 2.16% year-on-year at an average along-hole depth of 2,001 meters, thanks to faster drilling.

With further improved capacity and application scale, horizontal drilling has become the major technology for the development of tight oil and gas and shale gas. In 2014, we drilled and completed 2,068 horizontal wells, including 1,610 domestic wells and 458 overseas.

Well Tazhong-862H drilled by Chuanqing Drilling Engineering Company in Tarim Oilfield registered a record as the deepest onshore horizontal well in China, with an along-hole depth of 8,008 meters and a horizontal interval of 1,552 meters. Well Jinyue-5H drilled by Bohai Drilling Engineering Company in Tarim Oilfield was completed at 7,010 meters TVD, the deepest TVD of a horizontal well in China. Horizontal drilling became more mature in the development of unconventional oil and gas. Well Changan-X1-5 drilled by Chuanqing Drilling Engineering Company was completed at an along-hole depth of 4,570 meters, setting CNPC’s shortest completion cycle of 33.68 days, the quickest average ROP of 9.81 meters per hour, and the highest monthly drilling rate of 4,080 meters per month among horizontal wells of the same type.

CNPC rolled out new drilling technologies and processes to maintain technical advantages and improve customer service and continue sustainable growth. In 2014, our drilling speed was greatly increased in the Kuqa Mountain Front area by rolling out nitrogen drilling, massively deploying oil-based drilling fluid, and applying turbo + diamond-impregnated bits on a trial basis. BH-WEI drilling and well-completion fluid developed by Bohai Drilling Engineering Company made a breakthrough in applications at Dagang Oilfield, a joint block at Changqing, and Yumen Oilfield in China, as well as Maysan Oilfield in Iraq. Expandable casing technology developed by CNPC Drilling Research Institute set nationwide records for the depth at which the casing entered the borehole, the deflection of the well, and the length where the casing was continuously expanded in Sinopac’s well TH12124CH at Tahe Oilfield, making it out as a domestic leader and worldwide state-of-the-art technology.

In 2014, we actively expanded the international drilling market and won new drilling contracts in Algeria, Kazakhstan, Venezuela, the United Arab Emirates, Niger and Chad. In addition, we won the bid on general drilling services for the Garrafl Oilfield and Rumaila Oilfield in Iraq.

**Well Logging and Mud Logging**

In 2014, CNPC deployed 760 well logging crews and completed 93,533 instances of well logging and perforation, and 10,482 instances of mud logging.

EILog, our independently developed well logging system, was technologically improved in terms of imaging logging and the extensive...
deployment of 15-meter one-string logging. The LEAP800 well logging system boasted improved geological adaptability, system stability and reliability. Seven LEAP800 systems were put into operation and worked well for 673 commercial-well times at home and abroad. The WISEYE1000 fast and integrated imaging logging platform was technologically improved and worked for 319 well times in peripheral development well zones and Halar region of Daqing Oilfield, increasing their average efficiency by more than 50%. LWD azimuthal laterolog resistivity imaging was used to acquire the LWD resistivity imaging logs in five wells that had been or were being drilled in the Sulige Gas Field, Changqing Oilfield, and Jidong Oilfield, addressing horizontal-well geosteering and formation evaluation in complex reservoirs such as thin, heterogeneous, low-porosity, or low-permeability reservoirs. Ultra-high-temperature and ultra-high-pressure perforation techniques were upgraded into a complete suite suitable for ultra-deep wells. The new DML compound logging unit features compound logging, gas logging, and geological logging, in addition to wireless sensors enabling easier installation.

In 2014, CNPC’s share of the global well logging and mud logging markets expanded, covering 19 countries including Canada, Kazakhstan, Uzbekistan and Sudan. We also won new logging contracts in Iran and Niger.

### Downhole Operations

In 2014, CNPC provided services including fracturing and acidizing, production testing, well intervention, overhaul and sidetrack drilling. We completed 143,405 downhole operations throughout the year, including 13,726 fracturing operations, 4,596 acidizing operations, and 6,965 layers of formation testing.

Snubbing operations were further rolled out. In 2014, our 166 crews applied snubbing in 4,296 wells both at home and abroad, an increase of 5.5% year-on-year. The multi-stage fracturing tool for uncased horizontal wells developed by Bohai Drilling Engineering Company can withstand a temperature of up to 170°C and a pressure difference of 90MPa. It enables fracturing for 15 stages in 3-1/2” tubing and 20 stages in a 4-1/2” casing. The tool worked well in Changqing Oilfield, Yanchang Oilfield, Daniudi Gas Field. An integrated cementing and completion tool was developed by Chuanqing Drilling Engineering Company, which was the first of its type in China. We also developed high-pressure liner hangers as substitutes for imported products, the TDY hydraulic jet fracturing tool which was the leader in the domestic market, and the PSK fracturing tool which has been recognized as one of the new key products of China. Snubbing operations proved to be effective in terms of energy conservation, environmental friendliness, maintenance of formation pressure, and saving overall operating costs. This enabled us to reduce wastewater discharges by 2.3 million cubic meters and increase injected water by 1.72 million cubic meters, oil output by 30,000 tons, and gas output by 906,000 cubic meters throughout the year.

In 2014, multi-stage fracturing was extensively deployed in 1,065 horizontal wells. We improved reservoir stimulation in terms of both its technical level and construction capability by independently developing multi-cluster coiled-tubing jetting fracturing, cable-conveyed multi-cluster perforation and multi-stage fracturing with pump-down (fast-drill or big-bore) bridge plugs, hydraulic-sleeve and zipper fracturing, and multi-stage open-hole-packer fracturing. Our first batch of field tests for factory-like fracturing operation saw progress in the Changqing and Sichuan shale gas blocks. Chuanqing Drilling Engineering Company fulfilled sand fracturing for 19 stages in well Weyuan H3-1 by applying drilling-free bridge plugs with the largest bore in China and a temporary-plugging agent for the first time. This provided experience in terms of exploring the effective fracture-network fracturing stimulation suitable to fracture-developed reservoirs in the Weyuan region.

### Annual Business Review

<table>
<thead>
<tr>
<th>Well logging operations</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
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<tbody>
<tr>
<td>Logging crews</td>
<td></td>
<td></td>
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<tr>
<td>Domestic</td>
<td>721</td>
<td>725</td>
<td>760</td>
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<tr>
<td>Overseas</td>
<td>142</td>
<td>138</td>
<td>137</td>
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<tr>
<td>Well logging operations (well-time)</td>
<td></td>
<td></td>
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<tr>
<td>Domestic</td>
<td>93,585</td>
<td>100,129</td>
<td>88,000</td>
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<td>Overseas</td>
<td>5,768</td>
<td>5,963</td>
<td>5,533</td>
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<table>
<thead>
<tr>
<th>Downhole operations</th>
<th>2012</th>
<th>2013</th>
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<tr>
<td>Downhole operation crews</td>
<td>2,023</td>
<td>2,052</td>
<td>2,090</td>
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<td>1,818</td>
<td>1,831</td>
<td>1,849</td>
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<td>Overseas</td>
<td>205</td>
<td>221</td>
<td>241</td>
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<tr>
<td>Downhole operations (well-time)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Domestic</td>
<td>146,826</td>
<td>141,019</td>
<td>140,713</td>
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<td>Overseas</td>
<td>2,436</td>
<td>2,081</td>
<td>2,692</td>
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<td>Formation test (layers)</td>
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<tr>
<td>Domestic</td>
<td>6,555</td>
<td>6,251</td>
<td>5,099</td>
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<tr>
<td>Overseas</td>
<td>1,426</td>
<td>1,307</td>
<td>1,866</td>
</tr>
</tbody>
</table>
Engineering and Construction

In 2014, we witnessed steady progress in our key engineering and construction projects with higher quality and efficiency, thanks to coordinated resources, enhanced control over design, procurement, construction and supervision, and intensified contractor management. Throughout the year, we constructed 26 key engineering projects, including one which was newly commenced and 15 which were delivered or made operational.

Our engineering and construction subsidiaries actively explored the EPC market and expanded their PMC market share. The contribution of high-end business including EPC, design and PMC to our income continued to grow. CPECC, China Petroleum Pipeline Bureau, CPE, and China Huanqiu Contracting & Engineering Corp. were listed as ENR Top 250 International Contractors for consecutive years, marking our increasing overall strength and brand influence.

Oil and Gas Field Surface Engineering

We maintained our position as the domestic leader in building onshore oil and gas fields. We have surface engineering technology packages for conventional fields, as well as for fields featuring high water cut, low permeability, ultra-heavy oil and high condensate content, high pressure, high yield, and high sulfur content. In addition, we have the capacity to build surface works to accommodate facilities with 20Mt/a oil production capacity and 10bcm/a gas production capacity.

In 2014, our major capacity building projects proceeded smoothly. Several major projects were put into production as scheduled, including the 4Mt/a capacity building work of Tazhong Oilfield in the Tarim Basin, the surface engineering work of Moxi Block of Anyue Gas Field in Sichuan, the Phase-II surface engineering work for capacity building of Halfaya Oilfield in Iraq, and the Phase-II surface engineering project for processing and integrated utilization of natural gas of Zhanazhol Oilfield in Kazakhstan. The surface engineering work of Al-Ahdab Oilfield in Iraq proceeded as planned.

The 10bcm/a commercial gas capacity building project at Galkynysh Gas Field in Turkmenistan, the first ever super-large un compartmentalized gas field independently EPC-contracted overseas by Chuanqing Drilling Engineering Company, was put into production as scheduled. CPECC completed the Andes Project in Ecuador on schedule with no pollution, emissions or accidents. Phase-I of the Badra gathering and transportation project, the first comprehensive oilfield surface construction work independently contracted by CPP in Iraq, was put into production. CPP also won the contract for the Nassiriya oil storage project in Iraq. China Huanqiu Contracting & Engineering Corp. signed the contract for the MPE3 capacity expansion project in Venezuela.

Construction of Refining and Chemical Facilities

2014 saw progress as planned at major projects and the start of a number of gasoline quality upgrading projects. Sichuan Petrochemical’s integrated refining/petrochemical project and Guangxi Petrochemical’s 4Mt/a residual hydro-desulphurization unit and 2Mt/a diesel hydro-upgrading project were completed.

We steadily advanced our overseas projects. The phase-I upgrading project of the diesel hydrogenation unit at Shymkent Refinery in Kazakhstan EPC-contracted by CPECC was completed.

Pipeline and Storage Tank Construction

As the world leader in construction capacity and engineering technology for onshore long-distance oil and gas pipelines, we can build 6,700-9,700 kilometers of pipeline with a diameter larger than 711mm every year. In addition, we have the technological capacity to design and build 150kcm crude tanks and 10kcm spherical tanks. We are capable of building 26 million cubic meters of crude tanks and 16 million cubic meters of refined product tanks annually.

In 2014, we built more than 2,400 kilometers of long-distance pipelines, and completed one underground gas storage and two LNG projects. The Hohhot-Baotou-Ordos Products Pipeline and the trunk pipeline for the trial production of Changning shale gas block in Sichuan were put into operation. The western section of the Third West-East Gas Pipeline was completed. The eastern section of the Third West-East Gas Pipeline and the Shandong Pipeline Network (including the Zibo Branch and the Rizhao Pipeline), and the Jinzhou-Zhengzhou Products Pipeline were constructed as planned.

Internationally, the Uzbek section as part of Line C of Central Asia-China Gas Pipeline became operational. The main section of onshore pipes in the Tanzania Gas Pipeline was welded. CPP completed and made operational the Badra Export Pipeline in Iraq and the Myanmar-Thailand Gas Pipeline, and proceeded with construction of the Tanzania Gas Pipeline, the Majnoon FCP Gas Pipeline in Iraq and the Nakhon Sawan Gas Pipeline in Thailand. CPP also won the contract for four sections of the Shahdol-Phulpur Gas Pipeline planned by Reliance Gas Pipeline Pvt Ltd (RGPL) in India.

A number of storage projects were put into operation, including the Suqiao Underground Gas Storage in Huabei Oilfield EPC-contracted by CPE. The 2.5Mcm/d LNG Production Work of Kunlun Energy Company in Tai’an City of Shandong Province, for which China Huanqiu Contracting & Engineering Corp. performed as the EPCC contractor, and the 5Mcm/d demonstration LNG project EPC-contracted by CPE were completed and became operational. CPP began constructing a 25kcm crude storage at Rumaila Oilfield in Iraq, and won contracts for the Nassiriya oil storage project in Iraq, the Angola product depot expansion project, and Stage-2 of the Phase-II Kazakhstan-China Gas Pipeline.
Offshore Engineering

We have the capacity to provide integrated and comprehensive support for offshore production. Our services include well drilling, well completion, well cementing, production tests, downhole operations, design and construction of marine engineering, and vessel services. We have 11 mobile drilling platforms (including a platform under construction), one modular drilling/workover rig, five production test platforms, and a variety of 24 vessels. In 2014, 21 of our vessels provided services for 4,625 working days.

In 2014, CNPC’s Offshore Engineering Ltd. (CPOE) completed a total drilling footage of 268,000 meters in the Bohai Sea, the Yellow Sea and the Persian Gulf. The company spudded 98 wells and completed 113 wells, and provided downhole operations for 54 well-times, formation testing in two layers, and acid fracturing for 66 layer-times.

With support from Qingdao offshore engineering construction base and Tangshan production support base, CPOE built and inaugurated the CPOE 16 rig in November. This has further improved its offshore equipment and drilling capacity, and marked the launch of its integrated service support capacity at a depth of 120m. The company began building its second 400-foot rig, the CPOE 17 rig, in Dalian, which is expected to be completed and made operational in the first quarter of 2016.

Petroleum Equipment Manufacturing

In 2014, in an effort to build our brand image as an excellent petroleum equipment manufacturer, we promoted structural adjustment, enhanced technological R&D, and actively expanded internal and external markets. Our global marketing network and the market layout of our petroleum materials and equipment were further improved.

New products were added to our drilling rig portfolio. The first 9,000m quadruple-stand AC VFD drilling rig passed a pilot drilling test in the mountain front region of the Tarim Basin, where it was used to drill a well with a total depth of 7,515m and a drilling cycle of 389 days. The comprehensive ROP was enhanced by 18%, and the outage time decreased four-fold. Baoji Oilfield Machinery Company Limited developed the first automatic processing system for rig strings and the first IT-based intelligent and integrated driller control system, the idriller. An 8,000m electric rig was delivered to its Pakistani customer, increasing our share of the Southern Asian rig market.

Major progress was made in the research and development of 1,422mm X80-grade and 1,219mm X90-grade steel pipes. China’s first spiral submerged arc welded steel pipe of X80 steel grade, 1,219mm in diameter, and 22mm in wall thickness was made on a trial basis to meet domestic demand for large-diameter steel pipes that can withstand high pressure.

Our power units were improved in terms of both reliability and stability. Jichai Power Equipment Company developed the highly-reliable 1100GF8 unmanned diesel engine with world-leading specifications. China’s first high-speed large-displacement 50MPa compressor was also developed.

Our portfolio of offshore petroleum equipment became diversified. A total of 26 models in seven categories, including drilling platform cranes, drilling platform windlasses, A&R winches, and platform jacking systems, were developed. We design complete drilling packages for all kinds of offshore rigs of up to 12,000 meters to meet the unique requirements of different users. Ten offshore rigs were exported to the Gulf of Mexico, the Persian Gulf, and the Caspian Sea. The CPOE 16 rig with our independent intellectual property rights was completed and inaugurated. In addition, we also developed underwater equipment such as subsea risers and subsea production trees to tap the underwater sector.

In 2014, our petroleum materials and equipment were exported to 80 countries and regions, through a marketing network providing the complete functions of storage, consignment sales, repair and service, product leasehold, assembly, and integration to major oil and gas producing countries and regions around the world. Exports of our major products including drilling rigs, long-distance pipes, and special pipes continued to increase. New customer bases were built in 32 countries. F-series mud pumps entered the Brazilian market. Special valves entered the Kazakh market, and witnessed breakthroughs in Argentina and other new markets.
## Financial Statements

### Consolidated Balance Sheet

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalent</td>
<td>322,375.35</td>
<td>312,079.87</td>
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<tr>
<td>Financial assets at fair value through profit or loss</td>
<td>8,423.41</td>
<td>15,889.06</td>
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<tr>
<td>Bills and accounts receivable</td>
<td>153,260.31</td>
<td>135,136.71</td>
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<tr>
<td>Prepayments</td>
<td>78,405.51</td>
<td>155,803.00</td>
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<tr>
<td>Other accounts receivables</td>
<td>48,537.46</td>
<td>55,428.63</td>
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<tr>
<td>Inventories</td>
<td>360,220.84</td>
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<tr>
<td>Other current assets</td>
<td>70,531.29</td>
<td>86,569.57</td>
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<td><strong>Total current assets</strong></td>
<td>1,041,754.17</td>
<td>1,038,926.90</td>
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<td><strong>Fixed assets</strong></td>
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<tr>
<td>Available-for-sale financial assets</td>
<td>97,774.44</td>
<td>112,216.48</td>
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<td>Held-to-maturity investments</td>
<td>128,811.40</td>
<td>105,424.55</td>
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<td>Long-term equity investments</td>
<td>131,601.26</td>
<td>136,432.73</td>
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<td>Fixed assets-net value</td>
<td>766,655.83</td>
<td>832,750.54</td>
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<tr>
<td>Construction in progress</td>
<td>395,385.97</td>
<td>367,628.20</td>
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<tr>
<td>Oil and gas assets</td>
<td>869,697.34</td>
<td>962,971.05</td>
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<tr>
<td>Intangible assets</td>
<td>76,923.94</td>
<td>82,617.70</td>
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<td>Other fixed assets (other long-term assets)</td>
<td>250,704.03</td>
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<tr>
<td><strong>Total fixed assets</strong></td>
<td>2,717,554.21</td>
<td>2,899,443.81</td>
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<tr>
<td><strong>Total Assets</strong></td>
<td>3,759,308.38</td>
<td>3,938,370.71</td>
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<tr>
<td><strong>Current liabilities</strong></td>
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<tr>
<td>Short-term loans</td>
<td>103,613.04</td>
<td>109,804.13</td>
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<td>Bills and accounts payable</td>
<td>415,016.81</td>
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<td>Prepayments</td>
<td>86,043.12</td>
<td>83,494.86</td>
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<td>Employee pay payable</td>
<td>20,045.47</td>
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<td>Taxes payable</td>
<td>85,804.27</td>
<td>62,837.70</td>
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<td>Other payables</td>
<td>93,151.82</td>
<td>111,929.05</td>
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<td>Other current liabilities</td>
<td>327,927.92</td>
<td>350,156.19</td>
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<td><strong>Total current liabilities</strong></td>
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<td><strong>Non-current liabilities</strong></td>
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<td>Long-term loans</td>
<td>13,730.29</td>
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<td>Estimated liabilities</td>
<td>90,533.29</td>
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<td>Deferred income tax liabilities</td>
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<td>Other non-current liabilities</td>
<td>436,744.65</td>
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<td><strong>Total non-current liabilities</strong></td>
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<td><strong>Total liabilities</strong></td>
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Consolidated Balance Sheet (continued)

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<th>2014</th>
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<tr>
<td>Owners equity</td>
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<tr>
<td>Paid-in capital</td>
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<td>Other equity instruments</td>
<td>30,484.50</td>
<td>109,540.88</td>
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<td>Capital reserves</td>
<td>264,221.24</td>
<td>264,357.13</td>
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<td>Other comprehensive income</td>
<td>-28,302.76</td>
<td>-33,637.66</td>
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<td>Special reserves</td>
<td>29,559.30</td>
<td>29,894.05</td>
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<td>Surplus reserves</td>
<td>1,035,602.97</td>
<td>1,114,849.97</td>
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<td>General risk preparation</td>
<td>5,452.65</td>
<td>7,072.37</td>
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<td>Retained profits</td>
<td>20,478.40</td>
<td>18,143.69</td>
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<tr>
<td>Total owners’ equity attributable to parent company</td>
<td>1,789,010.34</td>
<td>1,978,364.95</td>
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<tr>
<td>Minority interests</td>
<td>268,014.76</td>
<td>277,043.91</td>
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<td>Total owners’ equity</td>
<td>2,057,025.10</td>
<td>2,255,408.86</td>
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<tr>
<td>Total liabilities and owners’ equity</td>
<td>3,759,308.38</td>
<td>3,938,370.71</td>
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</table>

Consolidated Profit Statement

<table>
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<tr>
<td>Operating income</td>
<td>2,759,303.41</td>
<td>2,729,956.16</td>
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<td>Income from core businesses</td>
<td>2,753,729.56</td>
<td>2,725,330.68</td>
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<td>Income from other businesses</td>
<td>5,573.85</td>
<td>4,625.48</td>
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<tr>
<td>Less: Operating cost</td>
<td>2,101,254.46</td>
<td>2,085,698.82</td>
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<tr>
<td>Cost of core businesses</td>
<td>2,096,268.76</td>
<td>2,081,554.94</td>
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<td>Cost of other businesses</td>
<td>4,985.70</td>
<td>4,143.88</td>
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<tr>
<td>Business tax and supertax</td>
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<td>237,755.67</td>
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<tr>
<td>Sales expenses</td>
<td>72,350.51</td>
<td>73,361.80</td>
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<td>Management expenses</td>
<td>122,550.66</td>
<td>114,585.63</td>
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<td>Financial expenses</td>
<td>23,484.44</td>
<td>22,984.11</td>
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<tr>
<td>Loss on depreciation of assets</td>
<td>18,866.33</td>
<td>19,454.29</td>
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<tr>
<td>Others</td>
<td>27,184.82</td>
<td>23,896.80</td>
</tr>
<tr>
<td>Plus: Income from change in fair value (Loss is presented with &quot;-&quot;)</td>
<td>-44.74</td>
<td>50.08</td>
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<tr>
<td>Income from investments (Loss is presented with &quot;)&quot;)</td>
<td>17,446.33</td>
<td>18,522.42</td>
</tr>
<tr>
<td>Operating profit (Loss is presented with &quot;-&quot;)</td>
<td>161,290.71</td>
<td>170,791.54</td>
</tr>
<tr>
<td>Plus: Non-operating income</td>
<td>45,422.92</td>
<td>17,983.14</td>
</tr>
<tr>
<td>Less: Non-operating expense</td>
<td>18,686.14</td>
<td>15,364.71</td>
</tr>
<tr>
<td>Total profit (Loss is presented with &quot;-&quot;)</td>
<td>188,027.46</td>
<td>173,409.97</td>
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<tr>
<td>Less: Income tax expense</td>
<td>47,219.42</td>
<td>49,565.29</td>
</tr>
<tr>
<td>Net profit</td>
<td>140,808.07</td>
<td>123,844.68</td>
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<tr>
<td>Net profit attributable to owners’ equity of the parent company</td>
<td>113,775.07</td>
<td>100,798.25</td>
</tr>
<tr>
<td>Loss and gain from minority</td>
<td>27,033.00</td>
<td>23,046.43</td>
</tr>
</tbody>
</table>
A. Description of Principal Accounting Policies and Accounting Estimates

1. Accounting standard and accounting system

CNPC (hereinafter referred to as the Company) follows Accounting Standards for Business Enterprises—Basic Principles and the specific rules of accounting standards, guidelines for the application of accounting standards, interpretations of accounting standards and relevant regulations issued by the Ministry of Finance.

2. The fiscal period

The fiscal period starts on January 1 and ends on December 31 each calendar year.

3. Standard accounting currency

The Company and most of its subsidiaries adopt RMB yuan as currency used in bookkeeping. The combined financial statement of the Company is listed in RMB yuan.

4. Accounting basis and valuation

Accounting is based on the accrual system. Unless otherwise specified, all assets are measured at historical cost.

5. Foreign currency accounting and conversion of financial statements in foreign currency

(1) Foreign currency transaction

Our foreign currency transactions are converted into RMB yuan at the spot exchange rate on the days the transactions occurred; the monetary foreign currency items on the balance sheet date are converted into RMB yuan at the spot exchange rate on the balance sheet date. The exchange gains and losses arising from these translations that occurred in construction preparation, production and operation are taken into financial expenses; those related to the acquisition and construction of fixed asset, oil and gas asset and other assets in line with the capitalization condition are handled according to relevant provisions about borrowing costs; and those occurred in the period of liquidation are taken into liquidation gain or loss.

A non-monetary foreign currency asset measured at historical cost is converted into RMB yuan at the spot exchange rate on the trading day, with its amount in RMB yuan unchanged. A non-monetary foreign currency asset measured at fair value is converted into RMB yuan at the spot exchange rate for the date when the fair value was determined, with the difference thus caused taken into the current profits and losses as a change in fair value.

(2) Conversion of financial statement in foreign currency

All asset and liability items presented in Foreign Currency Balance Sheet are converted into RMB yuan at spot exchange rate on the balance sheet date; the owner’s equity other than “undistributed profit” is converted at spot exchange rate when occurred. Foreign incomes and expenses presented in the Income Statement are converted at the average of reference rates for RMB announced by PBC on a daily basis over the period of time covered by the income statement.

The opening balances of cash and cash equivalents in the Foreign Currency Cash Flow Statement are converted at statement’s initial exchange rate; and the closing balances are converted at the spot exchange rate on the balance sheet date. And other items are converted at the arithmetic average of reference rates for RMB announced by PBC on a daily basis over the period of time covered by the cash flow statement. The converted difference of cash flow statement arising from the conversions mentioned above is presented separately in Effect of the Change of Exchange Rate on Cash.

6. Recognition of cash and cash equivalents

The cash presented in the Cash Flow Statement comprises cash in hand and the deposits available for payment from time to time. Cash equivalents presented in the Cash Flow Statement are short-term (mature within three months), highly liquid investments that are readily convertible into cash and almost have no risk of change in value.

7. Financial instruments

Financial instruments include financial assets, financial liabilities and comprehensive income.

(1) Categorization of financial instruments

Financial instruments, based on the purpose of obtaining a financial asset or assuming a financial liability, are categorized into: financial assets at fair value through profit or loss; loans and receivables; available-for-sale financial assets; held-to-maturity investments; and other financial liabilities etc.
(2) Recognition and measurement of financial instruments

a. Financial assets at fair value through profit or loss (financial liabilities)

Financial assets/liabilities are initially recognized at fair value (minus: cash dividends declared but unpaid or interests on bonds due but unpaid), with the transaction costs stated in profit and loss accounts.

Interests or cash dividends from the assets held are recognized as investment income. End-of-period change in fair value is recognized in profit or loss. When disposed, the difference between its fair value and initially recognized amount is recognized as gain/loss on investment, and its gain/loss on changes in fair value is adjusted accordingly.

b. Receivables

Accounts receivable for goods supplied and/or services rendered as well as debts of other enterprises other than debt instruments quoted in active market, including accounts receivable, notes receivable and other receivables, are initially recognized at the contractual amount due from the buyer; a receivable for financing is initially recognized at its present value and measured at amortized cost using the effective interest method; when recovered or disposed, the difference between the price of obtaining such investment and the book value of receivable shall be determined as the income statement.

c. Available-for-sale financial assets

Available-for-sale financial assets are initially recognized at fair value (minus: cash dividends declared but unpaid or interests on bonds due but unpaid) plus the transaction costs. Interests or cash dividends from the assets held are recognized as investment income. End-of-period fair value is measured and the change in fair value is recognized in other comprehensive income. When disposed, the difference between the acquisition cost and the carrying value is recorded into profits from investment.

d. Held-to-maturity investments

Held-to-maturity investments are initially recognized at fair value (minus: interests on bonds due but unpaid) plus the transaction costs. Interests from the assets held are measured at amortized cost using the effective interest method and recorded as investment income. The effective interest rate is determined upon acquisition and remains unchanged in the expected life thereof or a shorter period of time, if applicable. When disposed, the difference between the acquisition cost and the carrying value is recorded into profits from investment.

e. Other financial liabilities

Other financial liabilities are initially recognized at fair value plus the transaction costs and measured at amortized cost. The Company’s other financial liabilities include accounts payable, borrowings and notes payable etc.

(3) Recognition and measurement of financial assets transfer

Upon the transfer of a financial asset, if all or a substantial part of the risks and rewards incidental to ownership of the asset are transferred to the transferee, the asset should be derecognized; if all or a substantial part of the risks and rewards incidental to ownership of the asset are retained, the asset should not be derecognized.

To decide whether the transfer of a financial asset will lead to the derecognition of such asset, the “substance over form” principle shall apply. There are two types of asset transfer, i.e. full and partial. When a full asset transfer is eligible for the derecognition of such asset, the difference between the two items listed below should be recorded into profits or losses of the current period:

a. The carrying value of the financial asset being transferred;

b. The consideration received for the transfer, plus the accumulative amount of the changes in fair value originally recorded in owner’s equity (when the financial asset being transferred falls under the category of available-for-sale financial asset).

(4) Derecognition of financial liabilities

A financial liability should be derecognized in whole or in part when the present obligation is fully or partially discharged; if the Company signs an arrangement with its creditor on replacing an existing financial liability with a new financial liability on the terms and conditions that are substantially different from those of the existing financial liability, the existing financial liability should be derecognized and, at the same time, the new financial liability should be recognized. For an existing financial liability with substantial changes in all or part of its terms and conditions, the existing financial liability should be derecognized in whole or in part and such financial liability should be recognized as a new financial liability on the revised terms and conditions. When a financial liability is derecognized in whole or in part, the difference between the carrying value of financial liability derecognized and the consideration paid (including a
8. Inventories

(1) Categories of inventory
Raw materials, work in progress and semi-finished goods, finished goods, goods sold etc.

(2) Acquisition and sales valuation for inventory
Inventories are carried at the actual cost when acquired, using perpetual inventory method; actual cost of delivered or sold inventories are carried at weighted average.

(3) Amortization of low-value consumption goods and packing materials
Low-value consumption goods and packing materials are amortized using one-off amortization method when they are put into use.

(4) Year-end inventory valuation, impairment recognition and inventory provision
Year-end inventories are carried at the lower of cost and net realizable value. Based on wall-to-wall inventory at the end of the period, provision for inventory write-down is retained at the difference between cost and net realizable value of inventory on the individual item basis in the following circumstances, where the net realizable value is lower than the cost.

a. The market price of inventory continues to fall with no hope of recovery in the foreseeable future;

b. The product using the raw material is manufactured at a cost higher than the selling price thereof;

c. The existing raw material fails to meet the needs of new products as a result of product upgrading and the market price of such raw material is lower than its carrying cost;

d. The goods or services are obsolete or there is a preference-driven change in market needs, resulting in a gradual decline in the market price thereof;

e. Other circumstances demonstrating a substantial impairment of inventory.

9. Long-term equity investment

(1) Determination of investment costs
For a long-term equity investment obtained through a combination of entities under common control, the carrying value of the owner’s equity in

non-cash asset being transferred or a new financial liability being assumed) should be recorded into profits or losses of the current period. For a partial repurchase of a financial liability, the carrying value of the financial liability as a whole should be allocated between the derecognized part and the retained part at their relative fair values on the date of such repurchase. The difference between the carrying value of the financial liability derecognized and the consideration paid (including a non-cash asset being transferred or a new financial liability being assumed) should be recorded in profits or losses of the current period.

(5) Determination of fair value for financial assets and liabilities
For an asset or liability measured at fair value, the fair value should be determined based on the following assumptions:

a. Fair value measurement assumes an orderly transaction between market participants at the measurement date under current market conditions;

b. Fair value measurement assumes a transaction taking place in the principal market for the asset or liability, or in the absence of a principal market, the most advantageous market for the asset or liability;

c. The appropriate assumptions that market participants would use in pricing to maximize their economic benefits.

A fair value measurement of a non-financial asset takes into account a market participant’s ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

(6) Impairment of financial assets
An assessment of carrying value of financial assets, except for financial assets at fair value through profit or loss, is made at the balance sheet date to determine whether there is objective evidence of impairment.

(7) Entrusted loans
a. Valuation of entrusted loans and recognition of interests
Entrusted loans are accounted for at the actual amount being entrusted. The accrued interest receivable at the end of the reporting period is recorded as investment income. For accrued interest that is due and irrecoverable, the accrual of interest should be stopped and withdrawn.

b. Recognition of and provision for impairment of entrusted loans
A comprehensive review of entrusted loans is conducted at the end of the reporting period. If the result indicates the impairment of entrusted loans, the carrying value of such entrusted loans is written down to its present value of estimated future cash flows, with the amount of impairment recognized in profits or losses of the current period.
the combined entity stated in the ultimate controlling party’s consolidated financial statements should be recognized on the combination date as investment cost. For a long-term equity investment obtained through a combination of entities not under common control, the combination cost should be accounted for the cost of the long-term equity investment. For long-term equity investments obtained in a manner other than combination of entities, if a long-term equity investment is obtained through payment of cash, the actual purchase price thus paid should be recognized as initial cost of the long-term equity investment; if a long-term equity investment is obtained through issuing equity securities, the fair value of the equity securities being issued should be recognized as initial cost of investment.

(2) Subsequent measurement and profits & losses recognition

a. Long-term equity investments under cost method

The Company’s long-term equity investments in its subsidiaries are accounted for using the cost method. In addition to the cash dividends or profits declared but not yet paid as included in the price or consideration actually paid upon acquisition, the cash dividends or profits that the investee has declared to distribute and the Company’s is entitled to are recognized in investment income.

b. Long-term equity investments under equity method

Long-term equity investments in associates and joint ventures are accounted for using the equity method. For the positive difference between the initial cost of investment and the investor’s share of the fair values of the investee’s net identifiable assets on acquisition of the investment, no adjustment to the initial cost of such long-term equity investment is made; for the negative difference between the initial cost of investment and the investor’s share of the fair values of the investee’s net identifiable assets on acquisition of the investment, such difference is recorded into profits or losses of the current period.

The investor’s share of the net profit/loss and other comprehensive income of the investee is recognized in investment income and other comprehensive income respectively, along with the adjustment to the carrying amount of the long-term equity investment; distributions of profits or cash dividends received from the investee reduce the carrying amount of the investment; adjustments in the carrying amount of the investment for the changes in the owner’s equity other than those arising from the investee’s net profit or loss, other comprehensive income and profit distribution are necessary and recognized as owner’s equity.

c. Disposal of long-term equity investments

For disposal of long-term equity investments, the difference between the carrying amount and the actual purchase price is recorded into profits or losses of the current period. Upon disposal of a long-term equity method investment, all amounts previously recognized in the Company’s other comprehensive income in relation to that investment are accounted for on the same basis as would have been required if the investee had directly disposed of the related assets or liabilities. The changes in the owner’s equity other than those arising from the investee’s net profit or loss, other comprehensive income and profit distribution are transferred to profits or losses of the current period in proportion.

(3) Determination of the basis for joint control and significant influence over the investee

Joint control means the contractually agreed sharing of control of an arrangement which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control. A joint venture is a joint arrangement whereby the parties that have joint control of the investee have rights to the net assets of the investee.

Significant influence means the power to participate in the financial and operating policy decisions of the investee but not control or joint control of those policies. For an investor with significant influence over the investee, the investee is considered an associate of the investor.

(4) Depreciation test and provisions for depreciation

At the end of the year, the long-term equity investment is reviewed and the provision for the depreciation of the long-term equity investment is retained against the difference between the recoverable amount and the carrying value. Once the provision for the depreciation of the long-term equity investment is retained, it should not be reversed during subsequent accounting periods.

For non-marketable long-term equity investment, depreciation is likely in the following circumstances:

a. There is a change in the political or legal environment of the invested business, such as an enactment of or amendment to the tax and trade regulations, that may result in huge losses of the invested business;

b. The goods or services of the invested business are obsolete or there is a change in market needs, resulting in a serious deterioration in the financial conditions of the invested business;
c. The invested business has lost its competitive edge due to a major technological change etc. in the sector, resulting in a serious deterioration in the financial conditions of the invested business such as clean-up or liquidation;

d. Other circumstances demonstrating a substantial failure of the invested business to generate economic benefits for the company.

10. Government subsidies

(1) Types of government subsidies

Government subsidies comprise mainly of treasury funding, interest subsidies, tax rebates and free allocation of non-monetary assets etc.

(2) Acknowledgment of government subsidies

The Company has acknowledged government subsidies that it is eligible for and granted.

Asset-related governmental subsidies are recognized as asset and deferred income when received, and contributed averagely to gains/losses of the period against the expected useful life of such asset. For a disposal upon or before end of the useful life of such asset, the un-contributed deferred income is carried into gains/losses of the period.

Income-related governmental subsidy used to recover related expenses or losses in the subsequent period is recognized upon receiving as deferred income, and is taken into the income statement of the period in which the related expenses is recognized; those used to recover related expenses and losses occurred in this period are directly recognized upon receiving as the gains/losses of the current period.

For those that are confirmed to be returned by governmental subsidy, involve with related deferred income or write down the book balance of deferred income, and the exceeding portion is taken into the gains/losses of the current period; those that do not involve with related deferred income are directly recognized upon receiving as the gains/losses of the current period.

(3) Measurement of government subsidies

Government subsidies in the form of monetary assets are measured at the amounts received or receivable.

Government subsidies in the form of non-monetary assets are measured at fair value, and in the case of inability to determine fair value reliably, measured at the nominal amount, which is RMB 1.

11. Deferred tax assets and deferred tax liabilities

Deferred tax assets and deferred tax liabilities are recognized at (temporary) difference between the carrying value of an asset or liability and the tax base of such asset or liability. Deductible losses and tax credits that are carried forward to reduce taxable income in future years under the tax provisions are deemed temporary differences and accounted for deferred tax assets. Deferred tax assets and deferred asset liabilities as at the balance sheet date are measured at the applicable rate for the period when such assets or liabilities are estimated to be recovered or settled.

Deferred tax assets are limited to the taxable income that is likely to be obtained to reduce temporary differences, deductible losses and tax credits. For recognized deferred tax assets, when it is unlikely to obtain sufficient taxable income to offset against deferred tax assets by the future period, a write-down of the carrying amount of deferred tax assets is necessary. If it is likely to obtain sufficient taxable income, the write-down amount should be reversed.

Deferred tax assets and deferred tax liabilities are presented on a net basis, provided that the following conditions are satisfied:

(1) Deferred tax assets and deferred tax liabilities are related to the income tax imposed by the same taxing authority on the same entity in the Company.

(2) Such entity in the Company has the legal right to offset current tax assets against current tax liabilities.
B. Main Taxes

1. Corporate income tax
The rate of corporate income tax applicable to the Company is 15% or 25%. In accordance with the Directive on Tax Policy Issues in Relation to the Further Implementation of the Western China Development Strategy announced by the Ministry of Finance, the General Administration of Customs and the State Administration of Taxation, business establishments in the industries encouraged to develop in the western region are entitled to a reduced corporate income tax rate of 15%. This preferential rate of 15% is applicable to the calculation and payment of corporate income tax of some of the Company’s branches and subsidiaries located in western China.

2. Value added tax
The value added tax rate is 17% for petroleum and petrochemical products and 13% for natural gas and LNG. Value added tax rates of 11% and 6% are applicable to some of the Company’s pipeline transportation service and R&D technology services respectively.

3. Business tax
The business tax rate is 3% for construction, 5% for oil and gas transportation services, finance and insurance, service industry, transfer of intangible assets and real estate sales. In accordance with the Directive on Business tax Exemption Policies Regarding Buying or Selling Personal Financial Products (CS [2009] No. 111) and the Directive on Business Tax Exemption for International Transportation Services (CS [2010] No.8) announced by the Ministry of Finance and the State Administration of Taxation, the Company (as a domestic enterprise) is exempt from business taxes on overseas operations in construction and international transportation.

4. Surtaxes and surcharges
The urban maintenance and construction tax rate is 1%, 5% or 7% of the amounts actually paid for business tax, value added tax and excise tax. The rate of education surcharge is 3% of the amounts actually paid for business tax, value added tax and excise tax.

5. Excise tax
In accordance with the Directive on Excise Tax Increase for Oil Products (CS [2014] No.106) announced by the Ministry of Finance and the State Administration of Taxation, the per unit tax has increased since December 13, 2014 from RMB 1.12 per liter to RMB 1.4 per liter for gasoline, naphtha, solvent oils and lubricants, and from RMB 0.94 per liter to RMB 1.1 per liter for diesel fuels and fuel oils. A suspension of excise tax remains unchanged for jet kerosene. In accordance with the Directive on Excise Tax Exemption for Oil Consumption in the Production of Oil Products announced by the Ministry of Finance and the State Administration of Taxation, the Company has been exempt from exercise tax since January 1, 2009 on self-provided refined oils used as fuel, power and raw materials to produce oil products.

6. Resources tax
The resources tax rate is 5% or 6%, based on crude oil and natural gas sales. In accordance with the Directive on Adjusting Resources Tax Policies for Crude Oil and Natural Gas announced by the Ministry of Finance and the State Administration of Taxation, the rate of mineral resources compensation fee has been reduced to zero and the rate of resources tax has been raised from 5% to 6% for crude oil and natural gas since December 1, 2014. The Company is eligible for resources tax exemption for crude oil and natural gas used for heating during the process of heavy oil transportation in the Company’s oilfields and eligible for a resources tax reduction of 40% for heavy oil, high pour point oil and high sulfur natural gas, 30% for EOR operations, 20% for low abundance oil and gas fields and 30% for deep-water oil and gas operations.

7. Mineral resources compensation fee
Mineral resources compensation fee has reduced from 1% to 0% since December 1, 2014, based on petroleum and natural gas sales.

8. Crude oil windfall profit tax
The windfall profit tax is based on excess sales revenue from domestic crude oil prices exceeding the threshold of USD 55 per barrel and imposed at the five-level progressive ad valorem rates between 20% and 40%.

9. Personal income tax
The employees are responsible for their own income tax, which is withheld and remitted by the Company.
Major Events

January

January 6 The world’s largest SNG-to-LNG project, invested and constructed by CNPC affiliated Kunlun Energy Company China Natural Gas Co., Ltd., became operational at Wuhai city in Inner Mongolia. The project commenced in April 2011.

January 14 CNPC closed the deal to purchase a 20% stake in Novatek’s Yamal LNG through China National Oil & Gas Exploration and Development Corporation, leaving Novatek with a 60% stake in the project and CNPC and Total S.A. with a 20% stake each.

February

February 4 HQCEC and Saudi Arabian Mining Company (Maaden) signed an EPC contract on Maaden’s phosphate ore dressing project. The nearly USD 600 million project is the largest of its kind in the world, with an estimated capacity to handle up to 13.5 million tons of phosphate ore per year after its completion.

February 9 China’s largest monomer marine uncompartmentalized carbonate gas reservoir was identified in the Longwangmiao formation at Moxi block in the Sichuan Basin, with newly added proven gas in place of 440.39 billion cubic meters and technically recoverable reserves of 308.2 billion cubic meters.

March

March 4 CNPC Trans-Asia Gas Pipeline Company Limited signed an agreement with Tajiktransgaz on jointly establishing a natural gas pipeline company to manage the construction of Line D of the Central Asia-China Gas Pipeline.

April

April 8 CNPC and Shell signed a global alliance agreement, under which the two companies will strengthen long-term cooperation in unconventional resources, deep water, LNG, and upstream and downstream businesses.

May

May 7 The No.2 Gas Processing Plant of the Amu Darya project in Turkmenistan became operational, as a new source of natural gas for the Central Asia-China Gas Pipeline.

May 19-20 CNPC signed a purchase and sale agreement for LNG on the Yamal Project with Novatek and a work schedule on the commissioning of and crude supply to the Tianjin JV Refinery with Rosneft. CNPC also signed an agreement with KazMunayGas on the pipeline tariff of crude through the Kazakhstan-China Crude Oil Pipeline and tariff
income distribution of each section owner, and a framework agreement on building a large diameter steel pipe plant in Kazakhstan.

**May 21** CNPC and Gazprom signed a purchase and sale contract on gas supply via the eastern route of the Russia-China Gas Pipeline.

**May 31** Line C of the Central Asia-China Gas Pipeline became operational. The 1,830km Line C runs in parallel with Line A and Line B, with a designed annual delivery capacity of 25 billion cubic meters.

**June**

**June 20** The State-owned Assets Supervision and Administration Commission of the State Council held a working meeting on the establishment of the board of CNPC and the appointment of outside directors.

**July**

**July 21** CNPC signed a new fuel oil trading contract with PDVSA through the Joint Chinese-Venezuela Fund, under which CNPC will purchase an additional 100,000 barrels of fuel oil per day from Venezuela for three years since the date of signing.

**July 22** CNPC and CUPET of Cuba signed a framework agreement on increasing crude output and production sharing of Seboruco Oilfield, and a cooperation agreement on providing drilling services with 9,000m rig.

**August**

**August 18** The second phase of CNPC’s 10Mt/a Halfaya Project in Iraq began to deliver crude oil. The project consists of a 272km-long transportation pipeline, a 5Mt/a crude processing center, pumping stations, and 43 wells to be drilled and completed.

**August 19** CNPC and Uzbekneftegaz signed an agreement on Line D of the Central Asia-China Gas Pipeline in Uzbekistan, and an MOU for building a natural gas chemical plant at Mubarek.

**August 21** CNPC and the Petroleum Authority of Mongolia signed an MOU on strengthening cooperation in the petroleum sector between the two sides.

**August 25** The western section of the Third West-East Gas Pipeline was completed. The Pipeline is the first key national project open to public and private capital.

**August 30** The auxiliary project for sour crude processing became operational at Guangxi Petrochemical.
September

**September 1** Construction commenced of the Russian section of the eastern route of the Russia-China Gas Pipeline. With a total length of 2,680km in Russia, the eastern route gas pipeline will start to transmit natural gas to China from 2018.

**September 13** Construction of the Tajik section of Line D of the Central Asia-China Gas Pipeline commenced. With a total length of 1,000km, and 840km outside China, Line D of the Central Asia-China Gas Pipeline has a designed annual delivery capacity of 30 billion cubic meters. It will be another trunk line for natural gas imports from Central Asia, such as Line A, Line B and Line C which are already operational.

October

**October 13** CNPC signed a technical agreement on the construction and operation of the eastern route of Russia-China Gas Pipeline with Gazprom, and an agreement for furthering strategic cooperation with Rosneft, respectively.

November

**November 6** CNPC closed the deal to purchase the Peruvian unit of Petrobras. PetroChina Latin America (Peru) took over Block 10, Block 57 and Block 58 from Petrobras Energia Peru S.A.

**November 9** CNPC signed a framework agreement on gas imports from Russia via the western route with Gazprom, and a cooperation framework agreement on the Vankor Oilfield project with Rosneft, respectively.

**November 12** CNPC and Peru’s Ministry of Energy and Mines signed an MOU on oil and gas cooperation. According to the MOU, the two sides will expand cooperation in exploration and development, natural gas processing and chemicals.

**November 14** CNPC and the Myanmar Ministry of Energy signed an MOU on expanding oil and gas cooperation, in a bid to bring energy cooperation between the two sides to the next level.

December

**December 14** CNPC and KazMunayGas signed an agreement on expanding cooperation in oil and gas technology.
Glossary

Proven reserves
According to China National Standards, proven reserves are estimated quantities of mineral deposits. They can be recovered from reservoirs proved by appraisal drilling during the period of reservoir evaluation, with a reasonable certainty or a relative difference of no more than 20%.

Remaining recoverable reserves
Remaining recoverable reserves are the remaining portion of recoverable reserves in an oil (gas) field (reservoir) which have been developed to a certain stage. They are the recoverable reserves minus the volume of oil (gas) that have been cumulatively extracted until that stage.

Reserve replacement ratio
The reserve replacement ratio refers to the value of the amount of oil and gas reserves added in a year divided by the amount of oil and gas produced during that same year. It can be further expressed in terms of the oil reserve replacement ratio, gas reserve replacement ratio, and oil and gas equivalent reserve replacement ratio.

Oil equivalent
Oil equivalent is the conversion coefficient by which the output of natural gas is converted to that of crude oil by calorific value. In this report, the coefficient is 1,255, i.e. 1,255 cubic meters of natural gas, is equivalent to one metric ton of crude oil.

Recovery rate
The percentage of oil/gas in place that is recoverable from underground.

Decline rate
A decline in production occurs in an oil or gas field that has been producing for a certain period of time. The natural decline rate is defined as the negative relative change of production over a period of time, without taking into account an increase in production resulting from EOR (enhanced oil recovery) techniques. The general decline rate is defined as the rate of decline in the actual production of such an oil or gas field, taking into account an increase in production from the new wells and EOR techniques.

Water injection
The pressure of the reservoirs continues to drop after the oilfield has been producing for a certain period of time. Water injection refers to the method where water is injected back into the reservoir through the water injection wells to raise and maintain the pressure, increase oil recovery, and thereby stimulate production.

Tertiary recovery
Tertiary recovery is also called enhanced oil recovery and is abbreviated as EOR. It is a method to increase the recovery of crude oil by injecting fluid or heat to physically or chemically alter the oil viscosity or the interfacial tension between the oil and another medium in the formation, in order to displace any discontinuous or hard-to-tap oil in reservoirs. EOR methods mainly include thermal recovery, chemical flooding and miscible flooding.

Polymer flooding
This is an EOR method by which a polymer solution is used as the agent to displace oil. Polymer is injected to increase the viscosity of formation water, changing the oil/water viscosity ratio and reducing the difference between water flowability and oil flowability in the formation. This will increase the swept volume of water flooding and thereby the oil displacement efficiency.

ASP flooding
A flooding system is prepared with alkali, surfactant and polymer. It not only has a high viscosity but also can create ultra-low water-oil interfacial tension to improve the oil-washing capability.

Redevelopment
It is a process to enhance the ultimate recovery of a mature field which should have reached its limit or should have been abandoned with the use of conventional primary-development techniques. The development system of the oilfield is reconstructed by consolidating new concepts, and using and developing new secondary recovery technologies.

LNG
Liquid Natural Gas is produced by dewatering, deacidifying, dehydrating and fractionating the natural gas produced from a gas field and then turning it into liquid under low temperatures and high pressure.

Underbalanced drilling
Underbalanced drilling is a well drilling technique in which the hydrostatic pressure of the drilling fluid column is lower than the pore pressure in the stratum. Formation fluid is allowed to flow into the well bore, circulate out, and be controlled on the surface. It plays an important role in discovering and protecting reservoirs.
Horizontal well
A class of nonvertical wells where the wellbore axis is near horizontal (within approximately 10 degrees of the horizontal), or fluctuating above and below 90 degrees deviation. A horizontal well may produce at rates several times greater than a vertical well, enhance recovery efficiency and prolong the production cycle, due to the increased wellbore surface area within the producing interval. Meanwhile, the environmental costs or land use problems that may pertain in some situations, such as the aggregate surface "footprint" of an oil or gas recovery operation, can be reduced by the use of horizontal wells.

EPC
Under an EPC contract, the contractor carries the project risk for quality assurance, safety, schedule and budget within the scope of work, i.e. engineering, procurement and construction.

PMC
Under a Project Management Contract (PMC), the contractor is authorized by the project owner to be responsible for managing the whole process comprising project planning, project definition, bidding, EPC contractor selection, project design, procurement and construction.

HSE management system
The HSE management system provides a framework for managing all aspects of health, safety and the environment. It is defined as the company structure, responsibilities, practices, procedures, processes and resources for implementing health, safety and environmental management.

Occupational diseases
A disease or ailment caused due to excessive exposure to noxious fumes or substances in a working environment.
About this Report

In this report, the expressions "CNPC", "the corporation", and "the company" are used for convenience where references are made to China National Petroleum Corporation in general. Likewise, the words "we", "us" and "our" are also used to refer to China National Petroleum Corporation in general or to those who work for it.

This report is presented in Chinese, English, Russian, Spanish, and French. In case there is any divergence of interpretation, the Chinese text shall prevail.

Recycled/recyclable paper are used for this annual report.