

Overseas Oil and Gas Operations

In response to the declining oil prices and fluctuating exchange rates in 2015, we proactively adjusted our operational strategy and achieved safe, stable and effective growth in our overseas oil and gas operations. Risk exploration and progressive exploration led to a number of discoveries. Oil and gas production saw sustained growth. Pipelines and refining and chemical projects operated smoothly, while ones under construction saw progress. Besides, our cooperation with Belt and Road Initiative countries was further deepened.

Exploration and Development

In 2015, we optimized the deployment of our overseas exploration, by focusing on effective exploration, enhancing progressive exploration, and holding back risk exploration. We postponed offshore exploration and unconventional resource exploration that featured high risk, huge investment, and a long return cycle. Through technical innovation and well-organized exploration program, we obtained a number of major breakthroughs and discoveries.

Progressive exploration: New reserves were added in oil-rich blocks by progressive exploration. In Sudan, we discovered two reserves of 100 million tons of oil for each, one in Sufyan sag of Block 6 and the other in Hilba region of Block 4. In Chad, a high-yield oil reserve was found in buried hills in Block H. In Kazakhstan, we made progress in No. 1057 central uplift area and Block Doshan of the South Turgai Basin, and had more outcomes from lithologic exploration on the western slope of Hope Oilfield in the Pre-Caspian Basin. Moreover, we revealed potential in new bed series for the first time in the west of Block T of the Andes project in Ecuador, and obtained important discoveries in new bed series and low-resistance reservoirs in Block Jabung of Indonesia.

Risk exploration: We focused on the preliminary prospecting at the eastern piedmont zone on the Right Bank of Amu-Darya in Turkmenistan. Natural gas flows of more than 1 million cubic meters per day were obtained from well testing in each of the two formations of the Joramergen structure. Testing of exploration wells in the Gokmiyar structure showed good results in Upper Jurassic limestone and Jurassic and Lower Jurassic sandstone. Appraisal wells in the Agayry structure further proved gas reserves, leading to the formation of two gas zones with the reserves of 100 billion cubic meters for each, one being Hojakashmir-Gokmiyar in the south, and the other being Agayry-Tagara in the north.

Offshore exploration: By deploying key exploration wells, we obtained a high-yield oil flow from the first deep-water subsalt exploration well in two formations being tested in our Libra project in Brazil. The flow essentially proved an uncompartimentalized oilfield with a reserve of 500 million tons in the western Libra structure.

Production

In 2015, we took a series of measures to ensure the efficient and sustainable development of overseas projects, and achieved an increment in profitable production, under the principle of profit-oriented and project-specific management. These measures included pushing forward the redevelopment of mature oilfields, focusing on waterflooding, optimizing development program, cutting down the number of newly drilled wells and stimulation work, reducing cost, and promoting technological innovation.

We produced 138.26 million tons of oil equivalent, of which CNPC's equity oil was 72.03 million tons, up 10.5% year-on-year, including 115.50 million tons of crude oil and 28.65 billion cubic meters of natural gas, with CNPC's taking up of 55.15 million tons and 21.19 billion cubic meters.

Central Asia and Russia: Despite the number of new wells greatly reduced, our Kazakh company withheld the fast decrease in output from some major oilfields by optimizing E&P program and surface engineering design. AktobeMunaiGas started Phase-III production of its Third Oil & Gas Processing Plant in Zhanazhol Oilfield. Completion of water injection facilities in North Truva Oilfield greatly mitigated the decline in formation pressure and improved development profitability. Amu Darya project in Turkmenistan ran smoothly. The captive power station expansion project and surface construction works in Girsan, Bota, Tangiguyi and Uzyngyi gas fields were put into operation, with CNPC's equity gas of 11.9 billion cubic meters in 2015. The Yamal LNG project, an integrated condensate gas development and gas liquefaction project together with Russia's Novatek and France's Total, was launched and progressed smoothly in Russia near the Arctic.

CNPC's share in overseas crude production



55.15
mmt

CNPC's share in overseas natural gas production



21.19
bcm

Latin America: Our Latin American company kept stable production through enhancing oilfield management, achieving an output of 14.02 million tons of oil and 820 million cubic meters of natural gas in 2015. In Venezuela, the 40,000 bbl/d production buildup project and a new diluting agent pipeline were put into operation in the MPE3 project.

Middle East: Our Iraqi company produced more than 57 million tons of oil by continuous waterflooding. In Iran, our North Azadegan project began trial production and the MIS project progressed smoothly to resume production. In the United Arab Emirates, high yield was obtained in the formation testing of the first offshore appraisal well in our Al Yasat UAE project.

Africa: Despite the unfavorable conditions in Sudan and South Sudan, we achieved an equity oil production of 6.91 million tons in 2015, thanks to an optimized investment structure, accelerated commissioning of new wells, and improved production management. Daily production of 160,000 bbls was maintained through fine management and potential release in Block 3/7 in South Sudan; and the capacity building project in Sufyan Oilfield of Block 6 in Sudan started production ahead of schedule. In Chad, we enhanced study on reservoir geology and optimized stimulating operations, achieving an equity production of 2.6 million tons. Our newly built degassing tower and settling tanks were put into operation as planned. In Niger, we completed the surface construction of the Agadi Oilfield, greatly increasing its production capacity.

Pipeline Construction and Operation

In 2015, we operated 14,507 kilometers of overseas oil/gas pipelines, including 6,604 kilometers for crude and 7,903 kilometers for gas, which transported 26.54 million tons of crude and 40.3 billion cubic meters of natural gas throughout the year. The Central Asia-China Gas Pipeline, the Kazakhstan-China Crude Pipeline, the Russia-China Crude Pipeline, and the Myanmar-China Gas Pipeline (Myanmar Section) saw safe and stable operation. Major pipeline construction projects proceeded smoothly. The Myanmar-China Crude Pipeline (Myanmar Section) started trial operation and Maday Island Port was opened for operation. The 306km-long Stage-2 of Phase-II Kazakhstan-China Gas Pipeline (Southern Kazakhstan Line) was completed and put into operation. Construction of the Chinese section of eastern route of the Russia-China Gas Pipeline commenced.

Refining and Chemicals

In 2015, our overseas refineries processed 43.92 million tons of crude oil. Khartoum Refinery in Sudan, N'Djamena Refinery in Chad and Zinder Refinery in Niger achieved safe, steady and efficient operation with optimized processes and production plans. In Kazakhstan, Phase-I of PetroKazakhstan's refinery revamping project was pushed ahead with a 4kt/a sulfur production unit brought into operation.

Project Cooperation and Development

In 2015, CNPC kept conducting extensive international petroleum cooperation. We signed a series of JV and cooperation agreements with peer companies in the energy sector, further expanding the areas of our collaboration. Meanwhile, we expeditiously implemented the joint projects with the countries along the Belt and Road, in pursuit of mutually beneficial results.

Our energy cooperation with Russian partners was further deepened. CNPC and Gazprom signed an agreement to design and construct the cross-border section of the Eastern Route of the Russia-China Gas Pipeline, and an MOU on cooperation between CNPC and Gazprom Neft. The agreement set the procedures for the design, engineering and construction of the cross-border section, and provided requirements on project quality and environmental protection. According to the MOU, the two sides will jointly seek upstream cooperation opportunities in Russia and third countries, and conduct cooperation in petroleum exploration and development, oil products marketing, oilfield services, and trading of petroleum equipment.

In the Middle East, CNPC and Mubadala Petroleum signed a strategic cooperation agreement. Under the agreement, the two companies will cooperate in upstream investment and relevant project services outside the United Arab Emirates, specifically in conventional onshore projects, offshore projects, and LNG projects, etc.

In Africa, CPECC, a subsidiary of CNPC, signed a JV agreement with ENH Logística (ENHL) of Mozambique to set up China-Mozambique Petroleum Engineering Company, which will provide consultation, survey, measurement, design and construction services for oil/gas field surface works, long-distance pipelines, storage and transportation, refining and chemical installations.

In addition, CNPC and BP signed a framework agreement on strategic cooperation to further strengthen cooperation in oil and gas development, and continuously develop fuel retailing cooperation in China in both scope and mode. The two sides will push forward with cooperation in the redevelopment of Rumaila oilfield in Iraq, explore cooperation opportunities in international marketing of crude oil, oil products and natural gas, and carbon emissions trading, and share best practices and experience on technology and corporate governance.

Regarding technical cooperation, CNPC and GE signed an MOU on R&D cooperation in CCUS, low carbon and environmental protection technologies, and the development of unconventional oil and gas.

Eastern Route of Russia-China Gas Pipeline

Construction commenced of the Chinese section of the eastern route of the Russia-China Gas Pipeline in Heihe, Heilongjiang Province, on June 29, 2015.

The pipeline runs from the Kovykta Gas Field in Irkutsk Oblast of East Siberia and the Chayanda Gas Field in the Sakha Republic, and enters China at the Russia-China border at Heihe, Heilongjiang Province, before running through eight provinces, municipalities and autonomous regions such as Heilongjiang, Jilin and Inner Mongolia and ending in Shanghai. Construction of the 2,680km-long Russian section started on September 1, 2014. In China, a 3,170km-long pipeline and auxiliary underground gas storages will be built, and an existing 1,800km-long pipeline in parallel will be used.

The eastern route is expected to be completed and become operational in 2018. According to a gas purchase and sales contract with CNPC, Gazprom will export gas to China via the route for 30 years since its commencement of operation, with the delivery gradually increasing to 38 billion cubic meters per year.

To build the route, which is China's first long-distance gas pipeline of 1,422mm in diameter, we initiated research on the application of X80 steel pipes of 1,422mm in diameter beforehand. We took three years to overcome the difficulties in pipe making, fracture control, and equipment development, and formulated 13 technical standards.

Construction of the Chinese section faces challenges from the complex geology, rivers, frosts, and natural reserves, as well as permafrost along most of its route. In the preliminary planning of the section, we took into full consideration the potential environmental risks, and took measures for water protection, forest-fire prevention, and layered backfill to minimize the environmental impact.

The eastern route is one of the underpinning projects of China's Belt and Road Initiative. Its construction and operation will drive the development of infrastructure and associated industries, which will create job opportunities and boost the local economy along its route.

