

## 02

## The Eastern Russia-China Natural Gas Pipeline in Operation

The Eastern Russia-China Natural Gas Pipeline was officially put into operation on December 2, 2019. With CNPC's participation in its investment and construction, the Pipeline includes the section in Russia, often referred to as Power of Siberia gas pipeline, the cross-border section and the section in China. The gas is mainly supplied from the Kovyktinskoye Gas Field in Irkutsk Oblast and the Chayandinskoye Gas Field in Sakha Republic (Yakutia) in East Siberia, Russia.

### Project Background

The Chinese section of the Eastern Russia-China Natural Gas Pipeline with the largest diameter and the highest pressure currently in the country, starts from Heihe city, Heilongjiang Province in the north and winds its way to Shanghai municipality in the south. As planned, it will be constructed and put into operation in three subsections. The north subsection (Heihe-Changling) was put into operation this time, and the middle subsection (Changling-Yongqing) and the south subsection (Yongqing-Shanghai) are scheduled to come on stream in 2020 and 2023 respectively.

In May 2014, Gazprom and CNPC signed the *Gas Sales and Purchase Agreement via the Eastern Russia-China Natural Gas Pipeline*. According to the contract, Russia will export gas to China for 30 years via the route since it is put into operation, and the volume will gradually increase to 38 billion cubic meters per annum.





## Intelligent Pipeline

To build China's first long-distance gas pipeline of 1,422mm in diameter, the company initiated research on applicable technologies of X80 steel pipes of 1,422mm in diameter. It took three years to overcome difficulties in pipe manufacturing, fracture control, welding and construction equipment development.

This pipeline is the company's first pilot program on intelligent pipeline systems. The project integrates a real-time data acquisition and transmission system, intelligent site monitoring system, a lifecycle project management system, crew and project management platforms to enable standardized design, intelligent detection, IT-aided management and digital hand-over along the entire pipeline, which has promoted a shift from digital to intelligent pipeline construction for the company.



## A Green Project

The pipeline is also a green project in China. Construction and operation of the Chinese section faced remarkable

challenges from the complex geological and topographical conditions, including permafrost, rivers, forests, and natural reserves. During initial pipeline design, the company took into full consideration the potential environmental impacts, and took tailor-made measures for different regions with regards to water protection, forest-fire prevention or layered backfill, in order to minimize the environmental footprints. In particular, culvert and shield crossing techniques and measures were applied in environmentally-sensitive areas such as rivers, lakes, forests, roads and bridges.

The Eastern Russia-China Natural Gas Pipeline is a landmark project of Russia-China energy cooperation and a paradigm of the deep convergence of both countries' interests and win-win cooperation. The operation of the pipeline will further optimize China's regional gas consumption structure and enable a multisource supply of gas, which is of great significance for China to ensure gas supply in winter and to control air pollution. The construction and operation of the pipeline have also driven the development of infrastructure and supporting industries, created job opportunities, and promoted the economic growth in places along the route.

