



## Phase I of Yamal LNG Project Became Operational

On December 8, 2017, Phase I of the Yamal LNG Project, the world's largest and most complex one of its sort in the Arctic region, was put into operation. Yamal LNG is the largest overseas oil and gas cooperation project that CNPC has participated in under the Belt and Road Initiative. Being engaged in the full industry chain, CNPC is emerging as an important global player in the LNG sector.

Located in the Arctic region of Russia, Yamal LNG is an integrated project that covers the entire chain of natural gas exploration and production, processing, liquefaction, shipping and sales. South Tambey condensate gas field, the gas source of the project, harbors the proven reserves of approximately 1.3 trillion cubic meters for natural gas and 60.18 million tons for gas condensate. The project's LNG trains are planned to be built in three phases. Besides the Phase I which has already been operational, the Phase II and Phase III are expected to come on stream in 2018 and 2019 respectively. Upon full completion, the project will be capable of delivering 16.50 million tons of LNG and 1 million tons of gas condensate per year.

In 2013, CNPC signed an agreement with Novatek to acquire 20% share in the Yamal LNG Project to jointly develop and construct the project with Novatek and Total. In 2014, the project became cash-strapped after its kickoff. CNPC brought in Chinese lenders to meet the capital needs. In 2016, the Silk Road Fund bought 9.9% share of Yamal LNG from Novatek to be the fourth shareholder of the project. Currently, CNPC holds 20% share in the project, with Novatek (Russia), Total (France) and Silk Road Fund (China) owning 50.1%, 20% and 9.9% respectively.

Construction of the Yamal LNG project went into full swing in 2016. A dozen of CNPC subsidiaries, including CNPC International Russia Corp., CNPC Offshore Engineering Company Ltd. (CPOE), China Huanqiu Contracting & Engineering Company Ltd. (HQC), China Petroleum Technology & Development Corp. (CPTDC) and CNPC Global Solutions Ltd., were involved in the construction and operation of the project. In particular, CPOE and HQC jointly completed the construction of 16 modules for four work packages, i.e., FWP5, MWP4, MWP10A and FWP1D, and delivered the modules on schedule with high-quality.

Following the example of CNPC, a number of Chinese companies were engaged in the project construction across the board, ranging from geological study, rig manufacturing, module construction, engineering

supervision, shipping & logistics, material supply to ship building and LNG procurement. Due to harsh environment in the Arctic region, 147 fabricated modules are assembled for main functional units. 120 modules, a number of ice-class LNG carriers and one polar drilling rig are sourced from Chinese companies. More than 100 products used in the project are supplied by 45 Chinese manufactures. In such a way, Yamal LNG has greatly facilitated technological innovation as well as industrial transformation and upgrading in many relevant sectors, and has successfully showcased and driven China's manufacturing industry ahead.

Yamal LNG has also opened up a more convenient alternative to the existing transport corridors, i.e., the Arctic Northeast Passage, or the Ice Silk Road. Since 2015, more than 60% of the modules for the project have been transported via the Arctic Northeast Passage through the Bering Strait, which is one-third shorter than traditional routes through the Suez Canal, reducing logistics costs significantly.

The Yamal LNG Project bolsters the win-win, mutually beneficial economic and trade ties between China and Russia. The project not only gives a strong boost to the development of Russia's energy industry and its remote regions, but also helps diversify China's clean energy sources and enable further optimization of China's energy mix. In November 2017, CNPC signed a strategic partnership agreement with Novatek to further expand bilateral cooperation in both upstream and downstream of the gas industry.

As the largest platform for Sino-Russia economic and trade cooperation and an important stronghold along the Ice Silk Road, Yamal LNG is now deemed as a model of international energy cooperation in the Arctic Region. CNPC, thereby, becomes a frontrunner in the resource development in the Arctic.