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## **GAS EXPORT FROM SIBERIA. BRINGING RUSSIAN GAS TO CHINA, KOREA AND OTHER MARKETS - THE JOINING OF NORTHEAST AND SOUTHEAST ASIA BY GAS PIPELINES**

Russia contains the world's largest gas reserve. During the next few years, various projects are planned to bring gas out of Russia, southward to the rapidly growing markets of China, the Korean peninsula and other nearby areas.

This paper discusses some of the challenges involved in these projects and how they are being addressed:

- geopolitics, and the bringing together of many countries into long term ventures
- construction and operation of giant, long distance gas pipelines
- financing of multi-nation gas projects
- organising the gas customers and marketplace
- development schemes and techniques for the remote gas reservoirs of Far East Russia

The project that currently ranks no.1 in bringing Russian gas southward into China and Korea is the development of the giant Kovyktinskoye gas condensate field. This field is located in eastern Siberia and has reserves of around 50 Tcf and 400 MMb of condensate. The development scheme involves production of around 3Bcf/d of gas that is transported to markets in China and South Korea by a pipeline more than 3000 km in length.

Regions of Russia, and potentially Mongolia and Japan, are also markets. The gas is expected to be mostly used in power generation and petrochemicals.

The total development costs are around US \$10 billion. The field covers an area of more than 5000 km<sup>2</sup>, with the main braidplain and tidal deltaic pre-Cambian sandstone reservoirs lying at a depth of around 3000 m in remote forested hills. The climate is extreme; the area is snow covered for more than 150 days every year, and temperatures during the winter are typically -10 to -50°C.

More than 200 wells will likely be needed, most with horizontal reservoir completions, and up to 5 km stepout. Production is expected to last at least 30 years and could easily be 50 years or more. A Feasibility Study for the field is nearing completion, a PSA is being developed, a pipeline route is being finalised and gas pricing discussions are ongoing.