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PGC C: Developing markets

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Gas Supply to Europe: Ukrainian Component

Background

Russia is the largest exporter of natural gas to Europe. About 80 percent of Russian gas supply to the EU countries is delivered through the gas-transmission system of Ukraine (GTS) with also about 70 bcma of gas deliveries to the internal market. For the last decades, gas transit to European countries has been gradually increasing, and in 2004-2008 it stabilized at the level of 110-120 bcma representing around 25 percent of the EU gas consumption. Therefore, reliable and uninterrupted transit of natural gas through Ukraine has a key value for reliability and security of the European gas market.

Aims

In order to guarantee reliability and security of both gas supply to internal users and transit gas deliveries to the European gas market it is needed to provide flexibility and mobility of the Ukrainian GTS, accident-free and reliable functioning of its all links.

Methods

The objective of providing reliable internal and transit gas deliveries is achieved due to flexibility and wide branching of the gas-transmission system, considerable capacity of the UGS facilities located mainly near EU borders, and by realization of the system rehabilitation program, introduction of European operating standards and regulations, application of energy saving technologies and equipment, secondary energy resources recycling, and abating of environmental impact. High qualification and experience of the personnel have an important value. Domestic gas production at the level of 20 bcm per year along with decreasing gas consumption in Ukraine, which went down from 118.8 bcm in 1990 to 66.3 bcm in 2008, is also of key importance.

Construction of the Ukrainian GTS consequent to gas discoveries in the west, then in the east and south of the country, thus altering directions of gas transmission flows, gradually increasing volumes of gas transit deliveries through the western, then south-western borders resulted in forming a very flexible, wide branched, multiline system of gas pipelines, including interconnector lines and pipelines being able to operate in reverse regime. This was evidenced by the situation of January 2009, when gas flow from Russia was halted, and the GTS operated in an autonomous regime supplying domestic users with gas of indigenous production and

from the UGS facilities. Even in this situation, reasonable volumes of gas were also delivered to Moldova and Bulgaria.

The complex of UGS facilities with 250 million cubic meters per day productivity is a very important element for providing reliability of gas supply. The western complex of UGS facilities with working gas capacity of 25.3 bcm, which substantially exceeds the needs of that region, is the major component securing reliable gas supply to the European gas market. The western complex facilities were designed mainly for providing reliability of the former Soviet Union export gas deliveries, major sources of which are located in the difficult access districts of Siberia, 3-4 thousand kilometers away from the consumers.

In order to provide reliability of the GTS its renovation and reconstruction is carried out, including:

- Inspection of pipelines with intelligent pigs;
- Development and application of GIS techniques;
- Repair and/or replacement of pipelines on the bases of inspection data;
- Liquidation of honeycombs with bandage sleeves and/or arc welding under pressure;
- Pipeline hot tapping and branching without breaking gas supply and gas escape;
- Implementation of new generation gas turbines;
- Renovation of gas metering stations.

Inline inspection of the pipelines commenced in 1996, when 98 km of gas pipelines were inspected, during 2007-2008 a corrosive inspection was conducted over 3,120 km, and stress-corrosive – over 1,750 km. All the transit mains have been inspected with intelligent pigs.

Implementation of new generation gas turbines is accomplished according to Compressor Stations Rehabilitation Program. During the last 10 years, 50 new gas turbines with 10-25 MW output were installed on existing or newly built compressor stations, with 13 new engines installed on the UGS facilities compressor stations.

Close attention is paid to providing reliable gas metering. Natural gas transported outside Ukraine via 15 trunk pipelines is measured at 10 frontier gas metering stations located on the Ukrainian territory. Gas transported into Ukraine is measured by the stations located in Russia and Belarus close to Ukrainian borders. All of the frontier GMS are equipped with automated electronic gas metering complexes, including backup units, and gas quality determination instrumentation.

Under EU technical assistance Naftogaz of Ukraine – the GTS operator – carries out construction of East Europe Metrological Center in Boyarka (near Kyiv) aimed at introducing uniform standards of gas quality and quantity measuring in Ukraine and neighboring countries.

Establishing an LNG market in the Black Sea region could be an additional measure for providing reliability of the European gas market. This would require building a terminal at one of the Ukrainian ports, where LNG would be received, regasified and transmitted to the existing GTS. Such a system could serve for

supplying gas not only to Ukraine, but a lso to Bulgaria, Romania, Moldova an d other countries, thus enhancing gas supply safety and security of the whole region.

Summary

Ukraine is a reliable partner in providing secure gas de liveries to the European gas market.

Over 60 year s experience in natural gas exports and transit from and via Ukraine have proved reliability and security of these deliveries.

Ukraine is both a principal gas transit country and a major gas consuming country. The substantial level of domestic gas production along with sustainable supply of imported gas to Ukraine is a key factor of reliable and secure gas transit via Ukraine. This is a good ground for mutually beneficial cooperation between U kraine, EU and gas supplying countries.