

RUSSIAN GAS ABYSS

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Overview

The mid-2000's brought significant changes in commercial and regulatory frameworks for natural gas and electric power in Russia. These changes substantially broadened possible scenarios for natural gas supply/demand equilibrium in the region. This paper analyzes current and potential factors affecting development of the natural gas industry in the country, such as the major shift in the country's energy balance to coal and nuclear replacing natural gas in power generation, scheduled liberalization of natural gas and electricity prices, evolving fiscal regimes for upstream oil and gas, and the emergence of LNG exports. Changing energy balance and rationalization of prices are expected to reduce domestic demand, while the fiscal regime changes and growing world market for LNG will likely influence the natural gas production by both Gazprom and independent oil and gas companies.

Methods

Recently, officials from the IEA and EU raised serious concerns about overdependence on and long-term availability of Russian gas. We will revisit the validity of this widespread notion of a potential natural gas deficit in Russia and the possible negative implications for major consumers in Europe and Asia by major factors which might affect Russian natural gas balance and quantifying our observations above into a demand-supply scenario analysis.

Results

Results of our analysis are presented in the table below and are clustered in high and low Russian natural gas exports cases for both mid-term and long-term prospectives:

	<i>Low Natural Gas Exports Case</i>	<i>High Natural Gas Exports Case</i>
<i>Mid-term</i>	<ul style="list-style-type: none"> • Temporary slump in commodity markets around 2009-2011 with rapid recovery • Delays in wholesale electricity market reform • Rapid growth in domestic electricity demand • Gazprom delays LNG projects in European part of Russia • Limited access to gas pipeline network for non-Gazprom companies • Restrictions on natural gas exports • Monopoly on gas processing capacity by SIBUR persists • Current pricing system on associated gas stays in place • Introduction of new tax regime (MET) for non-associated natural gas • China establishes a long-term relationship with Central Asian suppliers • Insufficient gas pipeline network capacity • Gazprom successfully continues marketing and distribution efforts in Europe • Implementation of Caspian natural gas pipeline is postponed 	<ul style="list-style-type: none"> • End of commodity cycle by 2010-2011 • Liberalization of non-residential wholesale electricity market by 2011 and natural gas market • Switching from natural gas to coal generation (5-25 bcm/year) • Investment commitments, approved in the General Scheme of Power Generation Objects till 2020, are confirmed and undertaken by private investors • Introduction of long-term natural gas and power contract frameworks • Oil and gas companies expand into power generation based on their own supply or swap deliveries • RAO UES falls behind the schedule of new gas power generation • Continuation of retrofits and upgrades to energy efficient technologies and equipment in industrial sector • Improvements in natural gas consumption tracking in residential sector (from current 15% to at least 40-50%)

	<i>Low Natural Gas Exports Case</i>	<i>High Natural Gas Exports Case</i>
Long-term	<ul style="list-style-type: none"> • High economy growth rate • Continuation of regional gasification program • Natural gas exchange trade remains insignificant or winds up • Rapid development of domestic refining and petrochemical sectors • European consumers increasingly switch to new supply alternatives (LNG, Nabucco, Trans-Sahara pipelines) • Gazprom procrastinates on new large-scale E&P projects in Yamal Peninsula and Offshore • Gazprom and independent companies continue E&P expansion abroad to the prejudice of domestic projects • Implementation of GHG mitigation system in Russia is delayed • Plans to develop major fields in Eastern Siberia are shelved • Centralized heat supply system remains inefficient and outdated 	<ul style="list-style-type: none"> • Moderate consumption rate with significant market volatility • Current trend of population loss (1.4%) continues • Implementation of announced shift to coal and nuclear generation • Gradual replacements of obsolete gas-fueled power generation • Gazprom remains a major decision maker in allotments of natural gas volumes for both industrial and power sector, while expanding in both lines of business • Shift of FSU countries from imports of Russian natural gas to alternative suppliers/ technologies • Central Asian countries ramp up natural gas production and export • Implementation of economically non-feasible new natural gas export routs to Far East and Asian markets

Conclusions

We believe that current catastrophic forecasts¹ on Russian domestic natural gas balance are somewhat exaggerated. Our base scenario calls for commodity markets to enter a downward trend in 2010-2011, while energy efficiency actions start taking effect at the same time.

Russian estimates for domestic supply are rather in line with foreign projections. Gazprom gives a range of 683.1-710.1 bcm for 2010 and 788.9-921.6 for 2030, while the Ministry of Economic Development and Trade projects 702 bcm for 2010 under its base scenario and 717 bcm for the same year, assuming unrestricted access to pipeline network for independent producers.

The U.S. EIA projects domestic production of 705 bcm in 2010, 776 bcm in 2015 and 997 bcm in 2030. We believe that a level of 710-720 is realistic for 2010, at the same time being a little bullish for 2015 with a 780-810 bcm projection.

Further research of the subject requires a major general equilibrium modelling effort. Currently, CEE-UT researchers are expanding the Center's analysis resources and modeling activities to deal with complex issues and decisions. CEE-UT anticipates research outputs on energy/economy and energy/environment for special studies, ongoing assessments in the U.S., and new challenges stemming from carbon management and emerging new value chains.

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¹ The range of domestic natural gas deficit is really impressive: from 40 bcm in 2010 according to RAO UES to Former deputy energy minister Vladimir Milov with 126 bcm as a worst case scenario (as cited in Riley & Umbach. Out of Gas. IP, Spring 2007, p.83)