

## Cooperation between Russia and EU in solving the problems of power generation security in Europe

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**Abstract.** The article deals with the problems of ensuring of power generation security of European countries within the framework of bilateral cooperation between Russia and EU. The author outlines the main tendencies of world power generation evolution and analyzes the consumption of power generation resources in Europe. A typical feature in Europe is a strong power generation dependency on the Russian import. The currently implemented set of measures by EU implies the 'third package' which intensifies tension between Russia and EU. A compromise is needed with EU about the norms of application of the third package to Russian projects. To consolidate the power generation security on the European continent, the political dialog should be encouraged in order to stimulate cooperation in power generation supply.

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### Introduction

The growth of the world population, the progressing civilization evolution, dictate higher power generation consumption in the world which, in its turn, leads to the intensified rivalry for power generation resources and poses the problems of supporting global competitiveness of the countries lacking any considerable fuel and power generation resources [1].

The power generation significance as the basis of human life necessitates the national governmental and international bodies to treat the matter of power generation security as the most essential factor for global players interested in stable progress at the world market [2].

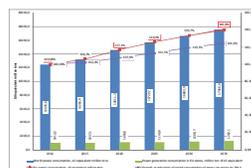
The power generation security is one of the most essential trends of the policy of European states to be treated within the framework of global power generation system [3].

### Main part

The main tendencies of world power generation progress are the following:

- World demand for primary carriers.

According to the forecast published by British Petroleum (BP) [4], the world power consumption will grow until 2035 by 40.8%. The global power demand will grow on the average 1.5% per year until 2035. It is expected that the growth tempo will remain at 2% until 2020; the consumption will reduce by 1.2% annually to the same amount approximately at that tempo per year.

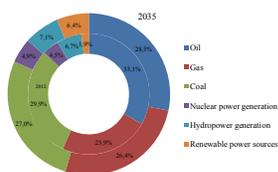


**Fig. 1. Power consumption growth in the world and in EU countries until 2035**

2) The world power consumption is getting gradually diversified and balanced: by 2035 the fossil fuel proportion is gradually getting balanced (oil – 28.3%. gas – 26.4%. coal – 27%) and non-fossil types (18.4%) proving the intensified interfuel competition and the growing power supply stability [5].

No radical changes are forecast in the world fuel basket – the world economy will remain dependent on fossil fuel (Figure 2).

3) The technological progress and growth of consumption of renewable power generation sources demonstrate the highest growth in the predictable period until 2035 (4.7 times versus the 2012 level). Gas is the leader by absolute consumption growth and its niche in the fuel basket (+1643.9 million tons of the oil equivalents). It is noteworthy that the development of technologies of renewable power enjoys broad encouragement in many developed countries, in the EU in the first place.



**Fig. 2. Primary power generation structure by fuel types in the world in 2012 and 2035**

4) Irregular distribution of world oil and gas reserves has led to the division of countries into import-oriented (almost all countries in Europe, the USA) and export-oriented (Russia, Venezuela, Saudi Arabia). Russia has the reserves of 87.2 thousand billion barrels of proven oil reserves (or 5.2% of the world reserves), 32.9 thousand billion cubic meters of the proven natural gas reserves (17.8% of the total world reserve).

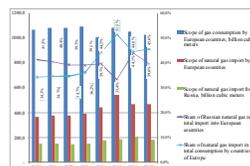
The countries of EU are among main importers accounting for 1.7 thousand billion cubic meters of the world gas reserves pressure less than 1% of the world proven reserves and just 6.8 thousand billion barrels of the oil proven reserve (0.4% of the world proven reserve). It explains a considerable dependence of the power generation security of Europe on the Russian power generation strategy and on that of other exporters.

For instance, the dependence of Europe on natural gas import has grown from 34.3% in 2005 to 45.6% in 2012 (Figure 3).

The import dependence grows in Europe, the more challenging is to explore the chances of self-sufficiency through own resources in EU countries (including they renewable ones) and oil production by national companies elsewhere.

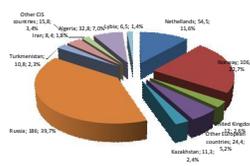
One of the largest power generation suppliers to EU and the European countries is Russia. The oil deliveries to Europe from RF are quite formidable amounting to about 200 million tons annually (for comparison: china — 15 million tons, the CIS countries — 30 million tons). In addition, Europe imports about 115 million tons of petroproducts (china — 5 million tons, CIS countries — 15 million tons). The total import by the countries of Europe is 475 million tons of oil and 143 million tons of petroproducts (for 2012, from the BP Statistical Review of World Power Generation). Thus, it is quite understandable that the share of

Russia in imports to Europe is 42% of oil 80% and petroproducts.



**Fig. 3. Relation between scope of consumption and natural gas import into countries of Europe in 2005-2012 years**

The share of Russian gas deliveries into European countries resulted in 2012 to be equal to 186 billion cubic meters or 39.7 % of the total natural gas European imports (Fig. 4).



**Fig. 4. Natural gas import structure into countries of Europe**

Until 2011, Russia expanded its presence at the European natural gas market every year: for instance, the results of 2011 show that its share in the total import reached 44.1%. During the last two years a tendency has been observed that his indicator kept reducing to 39.6% by the results of 2012. It is primarily due to the diversification strategy and the emergence of new variants of gas deliveries, including underwater gas pipelines from Northern Africa, LNG and Cathar. The European countries most independent of Russian gas are in the eastern and central Europe which does not have the LNG-terminals.

In addition to Russian gas, it is pumped to the European market from Great Britain, Netherlands, Norway, Algeria and Libya. According to the BP statistics, Norway from 2002 to 2012 has augmented production from 65,5 billion cubic meters to 115 billion; Netherlands reached the production peak in 2010 — 70.5 billion cubic meters and then it began to decline (63,9 billion cubic meters in 2012); production in Great Britain dropped during the decade from 103.6 to 41 billion cubic meters; in Denmark, Germany and Italy the insignificant production dropped too 1.5—2 times; the production in Algeria in 2002—2012 range between 80—85 billion cubic meters; Libya manifested peak in 2010 or 16.8 billion cubic meters but the preceding level was not recovered due to the crisis caused by the Caddafi regime and actual disintegration of the country into the territories run by various groups of fighters. In fact, the gas consumption reduces too but not so rapidly.

The European states manifest concern because a limited circle of suppliers to EU followed the policy of the countries suppliers, particularly, Russia, being directly dependent on the situation hardly predictable for Europe. The stiff system of deliveries, lack of direct market dependence on demand and 'marketable excess' inhibit the internal European competition and successful project implementation of united European market of gas and power.

Because the situation at the European market remains unstable, the exporting countries; like the importing countries rank their top priority the national power policies of risk reduction and assurance of power generation security [6]. The power generation security as the most essential task is governed by the severity of dependence of countries on external supplies and probable interruptions of deliveries.

At present the EU countries belong to the number of importers of Russian power carriers [7]. The main risk concentrates among exporting countries to EU and beyond control of importing European states. Therefore, the main trend of assuring power generation security for countries of Europe is the political dialog between exporters and transiting countries.

For power exporters the security reflects both deliveries to internal market and the marketing stability taking into account strong dependence of the budgets of these countries on export earnings.

The main portion of Russian gas is delivered to Europe via Ukraine. In case the transit is suspended in January of 2009 due to Kiev debts because of the illegal gas pumping off from the pipe, Russia initiated the diversification of deliveries to

European countries. To this end the Northern stream sea pipeline has already been commissioned to bypass Ukraine. The successful natural gas deliveries along the Northern stream predetermined search for opportunities for their further expansion. In addition, the Jamal-Europe-2 project envisages the deliveries of up to 15 billion cubic meters annually since 2018. The reliable partners in these plans provided by the route map of cooperation between EU and Russia until 2050 [8].

In the effort to reinforce its position in the south-eastern Europe with alternative projects of gas deliveries from the Near East and Caspian Sea and at the same time to protect from transiting crises, Russia is implementing the Southern stream project.

To promote cooperation between Russia and European countries in the sphere of power generation security, it is necessary to control together the power generation risk implying establishment of common legal framework governing the relations between suppliers and consumers [9]. However, exactly the sphere of power generation conceals the growing tension between Russia and EU. In many respects it relates to the position of EU bodies, such as the European Parliament, Eurocomission and numerous committees and consultative boards set up under specific legal and administrative acts, often aimed at 'restricting' Russian power generation companies.

For instance, the third power package adopted by Eurocomission in March of 2011 to the end of liberalizing the power generation and gas market, contradicts to a number of agreements between RF and EU, including the basic one in which the EU incorporated the article fixing the non-violation of investment terms.

The package of documents outlines the division of property and legal rights from the producing facilities and transport nets which cover the foreign companies operating in the EU market. The third power package was approved by EU in 2009; its implementation started at the countries EU members in March of 2011.

The EU third power package is aimed at setting up an efficient gas wholesale market in EU with the participants enjoying efficient various tools of gas deliveries.

Yet the gas market model of EU deals predominantly with the matter transforming gas sales into the short-trade at virtual hubs formed in market zones. It enables to estimate the role and structure of effective long-term contracts as the basis of gas supplies to Europe [10].

Europe planned by elaborating the third power package to diminish in the first place the monopoly of giants ENI, Ruhrgas, Gas de France at the national gas markets of countries EU members.

But such changes would reduce Gasprom to this group like the concern having a portion of contracts within the EU territory.

A set of measures has been developed to protect the transport nets separate the oil company from being engulfed by foreign corporations. In brief, it is proposed to create equal conditions for own company and foreign companies: the producing company of EU cannot own the transport nets and so is the foreign producing company which is forbidden to procure the net company even to be owned under partial control within the EU territory. If implemented, this provision would render EU in the Gasprom plan of expansion into the producing companies of EU countries; re a random it is termed the 'clause about Gasprom'.

Gasprom which has been presently contributing to assurance of the power generation security of European continent cannot already be the supplier for Europe and at the same time act as the owner of its constructed gas pipelines. In addition, the third package encroaches on the law in the sphere of both acting gas pipelines and those under construction (the Southern stream). It is absolutely apparent that these new deeds are aimed exactly against Gasprom as the leading gas supplier to European countries.

Under the requirements, which Europe incorporated into the third power generation package, Gasprom should provide access to its gas pipelines to other suppliers who may want to deliver gas to Europe. If such are unavailable, they should reserve anyway a part of gas transporting capacities.

It would reduce the profitability of power projects of Gasprom, would create problems in relations with partners, to direct and indirect losses.

This situation affected two Northern flow branches - OPAL и NEL. Both these branches are owned by Wingas, one of the largest gas companies in Germany controlled by Gasprom.

The request of Wingas and E.ON Ruhrgas to exclude the data about gas pipelines fro the EU antitrust rules was rejected. As a result the OPAL designed to pump through 35 billion cubic meters of gas per year pumped just have of the rated capacity, the balance 50% oa they capacity the Eurocomission demanded to reserve for other gas suppliers. Though it is unclear where the rest would come from, the requirement has been strictly fulfilled until recent time. It is apparent that 'Gasprom' had not had any substantial cost to be paid to the Northern stream share holders for the full transit capacity of gas pipeline on the terms 'pump or pay' (the gas monopoly owns just 51% shares) . It means about 500 million dollars a year. The indirect losses make up approximately as much because the company is

obliged to use the services of Ukraine pumping extra gas through this country and paying the relevant amount for transit.

Thus, the third power generation package has crated certain problems without promoting cooperation between Russia and EU: the investment attractiveness has lost its attraction to some European countries in the Russian business, growth of system risk, expropriation of assets of Russian companies. Such measures can undermine trust and generally affect negatively the power generation security of European countries.

Therefore, the third power generation package needs amendments because it ignores equally the interests of producers and consumers.

To assure power generation security, the European countries should develop the political dialogue in order to promote foreign economic cooperation between countries exporters and transiting countries. This dialog between Russia and EU is the main form of determination of cooperation trends in the power generation sphere. The main subject of discussion can be the insurance of stable deliveries, propagation of power generation saving ideology and technologies, power generation progress, evolution of renewable resources and other subjects. In other words, the power generation system should be the arena of mutually profitable cooperation rather than political struggle.

There is all the sense to use negotiation platforms of international structures, their full-fledged members are Russia and EU. The power problems are being discussed, for instance, by the 'Big twenty' ad 'Big eight'. The advantage of cooperation in international bodies is that it limits the opportunities of EU to expand its legislation to Russia unilaterally. There talks at international forums between partners to elaborate mutually acceptable mechanisms and later to incorporate them into their legislation. They would ensure the equality of partners which as noted above, is the basic category of Russian foreign policy.

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