

Energy Fact Sheet

# PECOB'S ENERGY POLICY STUDIES

## RUSSIA

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# I. OVERVIEW

## I/1 Key economic indicators

Population .....	141.79 million
GDP .....	429.55 billion 2000 USD
Energy production .....	1253.92 MTOE
Energy consumption per capita.....	4.84 TOE per capita
Energy efficiency of economy .....	2,6 2005 PPP \$/BEP
Electricity consumption.....	6443 kWh per capita
CO2 emission per capita.....	11.24 t CO2 per capita

Source: IEA 2008

## I/2 The Energy Mix

Russia is a great energy power, due to its natural resources.

The Russian Federation has abundant oil and natural gas reserves. Coal production has a relevant role, positioning the country at the sixth place in world coal production.

Russian energy consumption are higher than EU-27 area, due to high energy intensity of the economy and low energy efficiency.

Domestic consumptions cover only an half of the total Russian energy production. Electricity production stems from traditional CHP plants, which cover 67% of total demand. The remaining share is satisfied by hydroelectric and nuclear power. As results from the table above, renewable sources represent an insignificant part in energy mix.

In 2009, Russia surpassed Saudi Arabia and became the largest world producer of crude oil, with an estimated production capacity of 9.9 million bbl/d. In the same year, its domestic consumption was "only" 2.9 million bbl/d. It means Russian export was about 7.7 million bbl/d.

For Russia, energy means natural gas. The country has the world's largest natural gas reserves (1,680 tcf).

In 2009, Russia was the first natural gas exporter, even if it was the second country in terms of production (19.3 tcf) , due to its domestic demand, lower than in the US, the first producer.

(ktoe)	Production	Imports	Exports
Coal and Peat	167.180	18.839	-64.341
Crude oil	488.530	2.468	-244.312
Oil products	0	980	-97.291
Gas	534.645	6.393	-157.786
Nuclear	42.829	0	0
Hydro	14.170	0	0
Geothermal, solar	400	0	0
Other renewables	6.168	0	0
Electricity	0	267	-1.783
Heat	0	0	0
<b>Total</b>	<b>1.253.922</b>	<b>28.947</b>	<b>-565.513</b>

**Table 1: The Russian Energy Mix: consumption**  
Source: IEA, 2008

(ktoe)	Industry	Transport	Residential	Commercial and Public Services	Agriculture and Forestry	Fishing	Non-energy	Other
Coal and Peat	10,117	0	3,014	3,151	85	3	263	6,254
Crude oil	20	17	0	0	19	0	0	19
Oil products	13,039	54,667	7,588	2,094	4,461	790	23,948	14,934
Gas	30,128	35,408	39,900	3,918	836	0	23,749	44,654
Nuclear	0	0	0	0	0	0	0	0
Hydro	0	0	0	0	0	0	0	0
Geothermal, solar	0	0	0	0	0	0	0	0
Other renewables	269	0	1,223	572	232	1	0	2,028
Electricity	30,967	7,146	10,074	12,844	1,335	23	0	24,276
Heat	40,571	0	52,148	18,029	2,823	42	0	73,042
<b>Total</b>	<b>125,111</b>	<b>97,238</b>	<b>113,946</b>	<b>40,609</b>	<b>9,792</b>	<b>860</b>	<b>47,960</b>	<b>165,207</b>

**Table 2: The Russian Energy Mix: use**  
Source: IEA, 2008

(Tcfm)	Russia	Eurasia	World
Production	23,386	29,959	109,921
Consumption	16,799	24,222	110,915
Net export	6,586	5,606	--
Proved reserves	1,68	2,015	6,212

**Table 3: The world role of Russian gas**  
Source: IEA 2009

year	Billion cubic meters
2000	193.09
2001	180.9
2002	185.5
2003	189.4
2004	200.4
2005	209.2
2006	202.8
2007	191.9
2008	194.4
2009	166.4

**Table 4: Volume of natural gas exports**  
Source: Bank of Russia, 2010

## II. ENERGY LEGISLATION

### II/1 General Legal Framework

After the dissolution of the USSR, Russia has become progressively conservative in its constitutional and legislative clauses regarding the use of subsoil resources. The provisions contained in the Constitution (1993) reflected the earlier law on Subsoil Use (1992) which posed restrictive standards for the access to natural resources, with a specific effect on hydrocarbon handling.

*The Law on underground mineral sources.* It was passed by Duma in 1992. It established the State as the unique owner of all mineral resources, but allowed private and State-owned entities to lead exploration and production with licenses, obtained through public competitive tenders.

In 2005, the law was amended, introducing a civil law-based contracts, which grant better protection for investors' rights. The main aim was to create an equal relationship between State and investor.

*The Law on continental shelf.* The Law was approved in 1995. It stated the Federal Authorities had an exclusive right to permit and regulate exploration and development of the shelf, by either foreign or Russian investors, offering tenders and auctions. It established the Russian jurisdiction over exploration and production of all mineral resources, the construction of facilities for drilling and the laying of pipelines.

*The Law on Production sharing agreements.* It was signed by President Yeltsin in 1995 and it aimed at enabling the State and the investor to conclude a PSA contract. The provisions of the law referred to the existing legislation to regulate specific aspects in the PSA contracts: use of land (art. 1.2) ; licensing (art. 2.2) ; modification of the agreement (art. 17) ; termination of the contract (art. 21) ; cost recovery (art. 8) ; calculation of profit tax (art. 3.2) ; application of VAT tax (art. 13.3) ; account procedures (art. 14.1) ; state immunity (art. 23) .

After its transformation into a joint stock company (1995), Rosneft became the unique representative of Russian interests in PSAs.

Further legislation weakened PSAs development in Russia.

In 1999, the first amendment limited PSAs only on certain listed fields, minor in size and non-strategic in scope. The restriction also referred to nationwide production sharing, which could not exceed 30% of total production, representing almost the whole share already allocated by previous PSAs. Second, another ar-

ticle was amended as follows: "a PSA may be put in place where a tender was previously held and later declared invalid due to the absence of investors interested in the opportunity under the general tax regime". Reportedly, Prime Minister Mikhail Kasyanov said the government had reconsidered the role of PSAs, introducing more stringent conditions on access to such contracts, thus relegating PSAs to being the exception, in a legal "concentration camp" that would ultimately lead to their extinction.

*The Law on Foreign investments.* It was the result of a three year legislative process (2005-2008) . It was approved in April, 2008. According to its provisions, " (...) any foreign purchase of a controlling stake in a state-owned or private company in *strategic sectors* or a purchase of more than 10% in larger oil and gas deposits are subject to approval by a government commission".

*The law on Monopolies.* It came to force in 1995. It established monopolistic entities to control the energy supply chain section. It refers to: transmission of oil and oil products through trunk pipelines; pipeline transportation of gas; services on the transmission of electric power and heat generation.

## II/2 Energy Taxation

In Russia, the tax system was comprehensively addressed by the Codes approved by the state Duma in 1998 (part one) and in 2000 (part two) . These documents underwent significant amendments in 2001 and 2006, in order to adjust fiscal pressure on enterprises and to comply with international standards.

The energy taxation contributes to federal revenues, proving the relevance of energy sector in the national economic system. During the last decade with the upturn in public participation within the industry, the provisions are subject to change as taxes on oil are no longer regulated through the Tax Code, but via governmental decrees.

The direct mineral resources extraction tax (MRET, introduced in 2002) is the second most lucrative federal invoice chapter, accounting for more than 32% of the total input from taxation. Nonetheless, it does not take into account technical field conditions, which may have a negative economic impact on the development of "green" fields and on any improvements to depleting ones.

Apart from the MRET, other imposts enter into the account. Value-added tax on petroleum products, corporate-profit tax on firms' revenues, excise taxes on fuels, and export tariffs explain the high reliance of the Russian economy on the energy sector.

### III. ENERGY HYDROCARBONS INDUSTRY STRUCTURE

After the collapse of the USSR, Russian oil and gas industrial sectors were totally reformed.

As per the oil industry, during the Nineties a number of vertically integrated operator (VICs) were born and involved in each stage of the supply chain, from upstream to downstream.

LUKoil, Yukos and NK SUGUNNEFTGAZ were the first operators.

The collapse of the Soviet Union caused the privatization of the energy sector. Today, oil production is completely controlled by domestic operators.

In 2003, BP invested in TNK, creating a new major oil producer. This market operation remains unique as subsequent attempts by foreign operators to enter in Russia oil production were unsuccessful. After Yukos went bankrupt, the State-run company Rosneft acquired most of its assets and challenged LUKoil as the largest oil producer of the country.

With regards to gas sector, Gazprom controls 90% of gas production and 65% of Russian gas reserves. In addition, it is part of joint ventures with other operators. According to the company's financial data, it represents 8% of Russian GDP. Gazprom was born in 1965, as a Department at the Ministry of Gas. In 1993, it was transformed into a joint stock company. Regarding the oil sector, it became a vertically integrated firm, with 38% State ownership.

In the gas sector, Gazprom's role obstacles the presence of other independent firms.

Other historical operators (Itera, Novatek) were assigned to regional affairs and in many cases, Gazprom gained controlling shares within these companies as well.

The Russian gas industry underwent significant changes in ownership and governmental control.

The reform increased the State's presence in gas production and trade, while private shares never exceeded 25%.

The most important step was the re-acquisition of an absolute majority within Gazprom.

The state-owned Rosneft bought just as much to increase the share retained by the Russian government from a 38% to a 50.002% "scepter". In 2006, the Gazprom role was enforced by a law which recognized its exclusive rights for gas

trade abroad. With control over the export routes and market, Gazprom gained world leadership as the biggest natural gas company and increased its role as a major player in international relations.

Gazprom's grip on Transneft's gas pipelines was a natural inheritance of the Soviet gas export organization "Soyuzgazexport", which became part of the Ministry and then part of Gazprom itself. The role of the independent gas companies was therefore relegated to domestic supply. Moreover, since prices for Russia's internal gas trade were subsidized, these companies were forced into a smaller share of the market and therefore to lower profits.

In 2010, however, Gazprom's non-core assets accounted for a greater share of the company's budget than actual hydrocarbon trade, also due to a shrinkage in exports.



## IV. ENERGY POLICY

In 2009, the Russian government approved the "Russian energy strategy for the period up to 2030". It aimed to maximize the use of natural energy resources and the potential of the energy sector to sustain economic recovery and growth. It replaced the previous Energy strategy (2003) up to 2020, extending the timeline and adapting the policy to the new context.

The document stated the main guidelines of the strategy:

- (a) Energy security
- (b) Energy efficiency of the economy
- (c) Budget efficiency of the energy sector
- (d) Environmental safety of energy sector

The Strategy will be implemented stage by stage, in three phases:

- (1) First, the reform of the energy sector towards a new economy should help the energy sector's ride out of the crisis.
- (2) The second phase focuses on energy efficiency both in the fuel and energy economy and in the economy in general, as a result of modernization in production infrastructures, realization of innovative and low energy intensity projects in Russia's Eastern Siberia and Far East.
- (3) the final step will consist in a transition towards a new energy sector based on a highly energy efficient use of fuel resources and new non-hydrocarbon resources and technologies. It aims to the shift towards alternative energies in the energy mix, rising the share of nuclear hydro and renewable energies to 30% up to 2030 and increasing the share of non-fuel energy in the primary energy consumption to 13-14% up to 2030.

## V. RENEWABLE ENERGY AND ENERGY EFFICIENCY

The energy sector is one of the major sources of environmental pollution, contributing to 20% of dirty polluted discharge into the surface water; 50% of pollutants emission in the air; 70% of greenhouse emissions. The change towards a sustainable energy mix is necessary, as stated in the Energy Strategy, and it needs a more efficient use of energy resources and the creation of conditions to expand electricity and heat production on the basis of renewable energy.

The starting point is the *Federal Law on energy saving and energy efficiency increase*, signed on November 2009, accompanied by various legislative changes whose main goal is the creation of legislative, economic and organizational stimulus for energy saving and energy efficiency.

The Law stated the basic principles to implement it:

- (a) Efficient use of energy resources
- (b) Support and encourage for energy saving and energy efficiency
- (c) Systematic and integrated character of energy saving and energy efficiency
- (d) Planning and integration of activities
- (e) Use of resources taking into account technological, ecological and social conditions

According to the provisions of this Law, the requirements concerning energy efficiency must be applied to the circulation of goods, buildings, installations and structures.

It is crucial that the law mentions renewable energy. The original text of the bill even provided incentives for "equipment and facilities, the actual power consumption of which is achieved for more than a half at the expense of secondary and renewable energy resources, as well as alternative fuel sources."

After a few State Duma hearings, this rule disappeared from the text of the bill, along with other "state regulatory actions". However, it is important that the law amends the Tax Code (article 67 of the first part) : now organizations investing in facilities related to renewable energy are rewarded with investment tax credit (the same measure is provided for investments into objects with highest energy efficiency and heat and electricity facilities with energy efficiency of 57%) .

	Municipal Waste	Industrial Waste	Primary Solid	Biogas	Liquid Biofuels	Geothermal	Solar-Thermal	Hydro	Solar PV	Tide, Wave, Ocean	Wind
Unit	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
Grass Electricity Generation	0	2520	24	0	0	465	0	166711	0	0	5
Unit	TJ	TJ	TJ	TJ	TJ	TJ	TJ				
Grass Heat Production	0	79846	35027	0	0	0	0				
Unit	TJ	TJ	TJ	TJ	1,000 tonnes	TJ	TJ				
Production	0	128221	130081	0	0	16740	0				
Imports	0	0	0	0	0	0	0				
Exports	0	0	0	0	0	0	0				
Stock Change	0	498	2179	0	0	0	0				
Domestic Supply	0	128719	132260	0	0	16740	0				
Transformation	0	119925	39965	0	0	16740	0				
Electricity Plants	0	0	0	0	0	16740	0				
CHP Plants	0	67009	586	0	0	0	0				
Heat Plants	0	52916	39379	0	0	0	0				
Energy Industry Own Use	0	4352	547	0	0	0	0				
Losses	0	0	0	0	0	0	0				
Final Consumption	0	4442	91748	0	0	0	0				
Industry	0	2910	8357	0	0	0	0				
Transport	0	0	0	0	0	0	0				
Residential	0	0	51210	0	0	0	0				
Commercial and Public Services	0	1210	22740	0	0	0	0				
Agriculture	0	322	9402	0	0	0	0				
Fishing	0	0	39	0	0	0	0				
Other Non-specified	0	0	0	0	0	0	0				
Non-energy Use	0	0	0	0	0	0	0				

**Table 5:** Renewable energy in Russia: The state of play  
Source: IEA, 2008

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