



USDA Foreign Agricultural Service

GAIN Report

Global Agriculture Information Network

Template Version 2.09

Required Report - public distribution

Date: 6/1/2008

GAIN Report Number: RS8040

Russian Federation

Bio-Fuels

Annual

2008

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Report Highlights:

As one of the world's leading producers and exporters of oil and natural gas, interest and demand for biofuel remains limited in Russia. Although interest is growing, government policy and lack thereof constrain growth. Biofuel production is minimal and is mostly driven by demand from the European market.

Includes PSD Changes: No
Includes Trade Matrix: No
Annual Report
Moscow [RS1]
[RS]

Table of Contents

Executive Summary	3
Policies Supporting the Production and Use of Biofuels	3
Biomass Energy Potential	4
Graphic. Russia: Renewable in Electricity Generation, 2005	4
Petroleum, Natural Gas and Coal Based Energy Market	5
Table 1. Russia: Production of Major Energy Sources, 2007	5
Table 2. Russia: Distribution of Petroleum Products in 2005-2007, in 1, 000 metric tons ...	6
The Status of Bioenergy Projects in Russia	6
Table 3. Russia: Status of Biofuel Facilities, April 2008	7
Table 4. Russia: Production of Ethanol from 1 MT of Raw Material	8
Table 5. Russia: Production of Distiller's Dried Grains with Solubles (DDGS) (co-product of bioethanol production).....	8
Table 6. Russia: Potential Biofuel Source Export data, Metric Tons.....	8
Table 7. Russia: Exports of Fuel in Logs, Chips, Etc., by Countries, CYs 2005-2007, Metric Tons.....	9
Rapeseed Production for Biodiesel	10
Relevant Reports	10

Executive Summary

Russia produces small amounts of biofuels and has little domestic demand for biofuels due to its abundance of petroleum and natural gas. According to the International Energy Agency, renewable energies account for less than one percent of Russia's total fuel energy sector, with biomass accounting for only 0.2 percent of the total. The Ministry of Agriculture estimates that Russia has 20 million hectares of low value land available for the production of bioenergy with a goal of nearly 2.4 billion barrels of oil equivalent per year, but high taxes and bureaucracy are major constraints to increasing biofuel production as a clean and cheaper alternative to gasoline.

Policies Supporting the Production and Use of Biofuels

Russia's abundant resources of petroleum and natural gas, as well as subsidized natural gas prices, have removed most incentives for both a more efficient use of fuel, and the development of alternative energy sources. Russian legislation discourages the use of bioethanol for domestic consumption due to higher taxes, although bioethanol destined for export is exempt from taxes. Little has been accomplished at the national level, although the issue of renewable energy sources has been raised at several national conferences and meetings throughout Russia.

In April 2008, the First International Exhibition on "Alternative Energy Resources" was held in Moscow. The exhibition was organized by the Russian Ministry of Agriculture and the Academy of Agricultural Sciences, and brought together 132 companies from 16 regions of Russia and 10 foreign countries. A number of specialized expositions were featured at the exhibition, including "Alternative motor fuels", "Waste-to-energy recycling", "Small-scale energy power" and "Innovation technologies of the growing, storage and transportation of raw materials for the future biofuels production". For more detailed information about the exhibition please visit www.alt-energy.ru.

Former Prime Minister Zubkov (currently First Deputy PM) recently spoke about government support for the construction of biofuel plants which is likely to stimulate the industry. According to Zubkov, the government will support the construction of 30 new plants to develop biofuel production in 2008-09, including ethanol. The program also foresees modernization of old existing biofuel facilities. During his speech at the last timber industry conference, he sees forest resources as Russia's greatest source of biofuels, rather than grains and oilseeds. According to Director of National Biofuel Association, researchers are working on a technology to make fuel out of timber waste that will be as efficient as the current conversion of crops into fuel.

According to Andrey Shapovalyants, President of National Bioenergy Association, Russia faces at least five major constraints in the development of the bioenergy sector:

1. Development of raw material base. Though officially 90 percent of agricultural land is privately owned, the vast bulk of it has not been surveyed or registered due to shortages of surveyors and appraisers and serious problems with official corruption. The banks will not finance the project before land ownership is settled and an agreement is established to allocate certain agricultural lands for production;
2. Production of modern equipment. Obsolete equipment is not in compliance with European requirements;
3. Problem of personnel training. There is a lack of qualified specialists in bioenergy;
4. Creating favorable conditions for investment projects. Currently six projects are under consideration by the government;

5. Promoting of bio-energy production to the domestic and international markets. This type of product should occupy a certain niche in energy balance of the country.

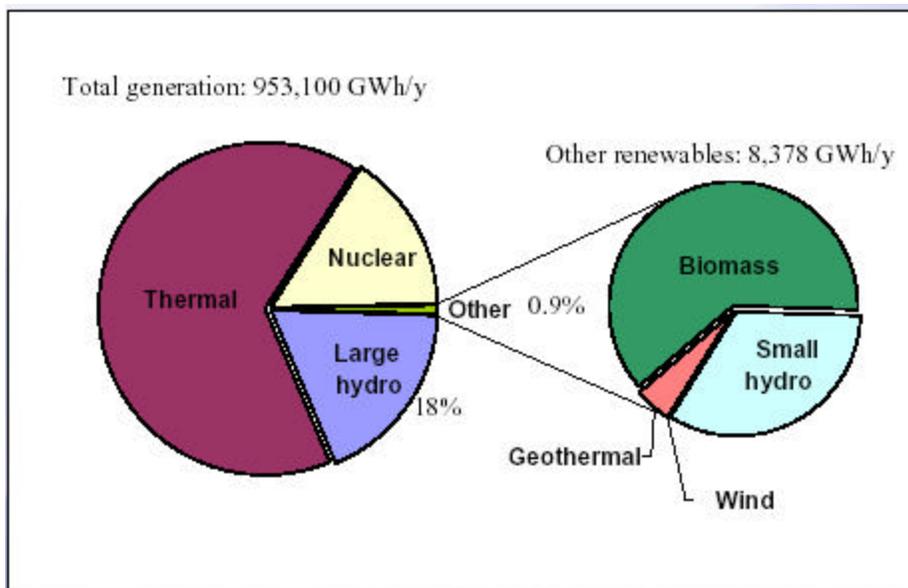
Biomass Energy Potential

According to the International Energy Agency, renewable energies account for less than one percent of Russia's total energy supply (see graphic below), with biomass making up less than 0.2 percent of the total. However, the Russian government plans to increase the share of renewable energies to three percent, with biomass accounting for most of the increase. The Russian Ministry of Industrial Energy is currently developing a separate program on renewable energy sources, including legislation that will regulate its use. The Federal Forestry Agency also sees major potential in biomass production in Russia. Russia is endowed with abundant forest resources; comprising one-fifth of the world's forested area and one-quarter of the world's timber stock. Furthermore, northwestern Russia offers tremendous potential for bioenergy for Europe.

An alternative project that the bioenergy department is currently developing involves the production of wood waste, pellets and briquettes, with an annual production level at 200,000 MT, and liquid and gaseous fuels for European market. However, these exports face a number of obstacles, including lack of transport infrastructure, lack of Russian standards on biofuels, lack of professional expertise on bio energy issues, as well as obsolete production facilities.

The Bioenergy Department of the Federal Forestry Agency drafted a project that will create the State Bioenergy Corporation financed by Investment Funds. The objective of the corporation is to develop the use of wood chips as an energy source and to reconstruct about 9,000 boilers with 2 MW capacities throughout Russia. The production of the energy source is aimed only at the domestic market. The energy will provide heating for the local population and will be also used in greenhouses for growing fruits and vegetables in areas with severe winters. Fast growing bushes can be cultivated and used in the woodless regions in Russia, therefore making the energy cost lower than that of coal and oil.

Graphic. Russia: Renewable in Electricity Generation, 2005



Source: International Energy Agency

Petroleum, Natural Gas and Coal Based Energy Market

By mid-March 2008, the supply of diesel fuel increased by two percent from the same period last year. Reported gasoline supplies have reached 98 percent of last year's level. As scheduled, natural gas prices increased in early 2008 by 25 percent and other fossil energy prices by 15 percent, which may result in further increases in fuel prices. However, fuel supplies should not present major problems for producers in 2008, as many of them had already secured stocks of fuel prior to the price increase.

Minister Gordeyev stated in a November 2007 speech that, if by the end of the year price disparities are evident, the Ministry of Agriculture has the right, in accordance with the "Federal Program 2008-2012," to calculate what portion of Federal subsidies will be allocated to farmers due to the increase in energy prices. Recalculations have yet to be made, which suggests that fuel prices are not the most important limiting factor. (Please refer to GAIN RS8024 for more details).

According to Gazprom, the company plans to increase gas production from 549 billion m³ currently to 570 billion m³ by 2010 and to 610-615 billion m³ by 2015. New fields will account for more than 50 percent of production by 2020.

Press reports suggest Economy Minister Nabiullina intends to delay full implementation of the government's plan to bring domestic gas prices in Russia to parity (minus transportation costs and taxes) with the export price by 2011. Recent rises in the European price for gas could translate in domestic consumers paying over 50 percent more than current prices by 2011. Nabiullina reportedly believes this is politically and economically unfeasible.

Delaying price liberalization would have a negative impact on Gazprom and independent producers looking toward a more rational and profitable domestic market. It would also be a setback for Russia's efforts to improve energy efficiency and increase gas production.

Table 1. Russia: Production of Major Energy Sources, 2007

Source	2007	As a percent of 2006
Production of oil with gas condensate, million MT	491.3	10.8
Production of gas, billion m ³	654.1	- 3.4
Coal production	314.2	4.8
Electricity, billion kW	1,016,0	20.2
Source: Min Top Magazine #1, 2008		

Table 2. Russia: Distribution of Petroleum Products in 2005-2007, in 1, 000 metric tons

	2005	2006	2007 preliminary
Automobile Gasoline			
Resources	31,996.8	31,098.0	31,954.3
- production	32,011.3	31,205.6	31,901.5
- imports	8.3	6.9	13.6
- change of stocks	+22.8	+114.5	-39.2
Use			
- sales in the domestic market	26,068.5	25,253.9	26,305.9
- - - through gas stations	19,956.7	19,318.2	22,627.2
- exports	5,928.3	5,844.1	5,648.4
Diesel Fuel			
Resources	59,555.1	57,929.4	59,999.8
- production	60,003.3	58,319.9	60,316.9
- imports	0.5	0.3	0.6
- change of stocks	+448.7	+390.8	+317.7
Use			
- sales in the domestic market	25,285.9	24,458.3	26,403.4
- exports	34,269.2	33,471.1	33,596.4
Bunker Oil (Mazut)			
Resources	60,160.2	57,431.5	59,723.8
- production	60,308.2	57,544.0	60,092.0
- imports	14.7	24.7	19.9
- change of stocks	+162.7	+137.2	+388.1
Use			
- sales in the domestic market	18,088.4	17,336.3	13,454.7
- exports	42,071.8	40,095.2	46,269.1
Source: Social-Economic Situation in Russia (Monthly statistics of the Federal Statistical Service), January 2007, January 2008			

The Status of Bioenergy Projects in Russia

In 2006, 25 companies intended to construct biofuel facilities in Russia with potential investments of \$1 billion. However, none of these projects are fully operating. The main reasons for the "freeze" in these projects are the lack of government subsidies, high alcohol taxes, and high prices of agricultural feedstock.

According to trade sources, developing biofuel in Russia can be profitable if the price of feedstock is stable and the price for traditional energy sources increase above subsidized levels. Currently, farmers are not interested in biofuel production since prices for agricultural commodities provide high profitability and the government has not financially supported biofuel projects. Also, the development of biofuel sector is not a priority in the recent National Agricultural Priority Project, and with the lack of government support the sector is doomed for failure.

The company "Titan" plans two approaches for increasing long-term profitability: alternative raw material and diversification. The company will use straw and sawdust in the production instead of wheat as was originally planned. The cost of cellulose raw material and wheat is approximately the same. However, the productivity of cellulose base is 2.5-3 times higher.

For diversification of its business and in order to avoid price fluctuations, the company will construct a feed facility, a pork facility (100,000 heads), and a poultry facility (1.2 million heads). The project is scheduled to start operation in 2009.

According to Dmitriy Rylko, Director of the Institute for Agricultural Market Studies, bioethanol production in Russia can become profitable if the Russian government abolishes the excise tax for bioethanol (163 rubbles per liter). However, the government has not moved in this direction yet and is influenced by the lobby of the oil industry. He also believes that if Russia had favorable legislation in place for biofuel production, bioethanol production could potentially exceed one million MT annually, in grain equivalent. Because of the lack of clear and transparent policies for biofuels, banks are very cautious in providing financing for the projects.

In 2007, "Efko" company announced that would invest in a biodiesel facility with production capacity of 10,000 MT per year. The company planned to use sunflower seed, rapeseed and soybean oil for biodiesel production. However, the project was shelved since the price for sunflower seed has more than doubled since 2007.

Table 3. Russia: Status of Biofuel Facilities, April 2008

Company	Region	Capacity (ready product, in thousand MT/hectare)	Investments, million Euros (as planned)	Current Status
Agrotop Ltd *	Penza oblast	n/a	115	Frozen
Aston *	Rostov oblast	250	100-120	Frozen
Bashneft-Yug*	Rostov oblast	250	130	Closed
Vipoil-Agro*	Volgograd oblast	300	320	Closed
Direct-Holding*	Lipetsk oblast	300	320	Looking for location
Metasintez *	Tambov oblast	250	220	Looking for location
Pava*	Altay Kray	100	150	Looking for location
Pava*	Altay Kray	100	150	Looking for location
Rusbio-diesel**	Krasnodar kray	100	17	Preparation of documentation
Titan-agro*	Omsk oblast	150	150	Preparation of documentation
Extrasib*	Tomsk oblast	15	8	Frozen
Efko **	Krasnodar Kray	10	6-9	Frozen
Yugtransitservice*	Rostov Oblast	n/a	80-120	Closed
* bio-ethanol				
** bio-diesel				
Source: Agroinvestor magazine # 3, April 2008				

Table 4. Russia: Production of Ethanol from 1 MT of Raw Material

Raw material, 1 MT	Ethanol, liter
Grain	375
Rye	357
Barley	330
Corn	410
Cellulose (straw, sawdust)	800
Source: Russian Biofuel Association "Titan"	

Table 5. Russia: Production of Distiller's Dried Grains with Solubles (DDGS) (co-product of bioethanol production)

Raw material, 1 MT	DDGS, kg	CO ₂
Wheat	330	370
Rye	390	350
Barley	430	320
Corn	300	400
Source: Russian Biofuel Association		

Analysts believe there are few ways to make biofuel production profitable. One of them is to integrate or grow raw material for biofuel production. The second approach is to look for alternative raw material. For example, in March 2007 company "Rusbiodiesel" declared its intention to invest Eu17 million into a rapeseed biodiesel facility with capacity 100,000 MT annually. The facility will be located in Krasnodar kray and will start operating in late 2008. However, currently the company considers using oil and fat waste from food industry as raw material for its potential biodiesel production which would considerably lower costs.

According to Agriinvestor Magazine, diversification is another option to make biofuel production more cost-effective. Thus, two companies from Lipetsk oblast "Direct-Holding" and "ZeRos" recently set up a joint venture for bioethanol and agricultural food production, including corn, rapeseed and milk. Roughly 100,000 hectares are allocated for grain that will be processed for ethanol while DDGS will be used as cattle feed. Experts believe that this joint venture has potential to be profitable since the company can save more on feed and transportation expenses.

Table 6. Russia: Potential Biofuel Source Export data, Metric Tons

HS	Description	2005	2006	2007
Oilseeds				
1206	Sunflower Seeds	284,761	233,534	99,317
1205	Rape Or Colza Seeds	64,369	63,235	75,522
1201	Soybeans	5,566	3,245	16,501

Oils				
151211	Sun/Safflower Crude	283,802	619,208	519,677
151219	Sun/Safflower Refin	29,758	65,556	94,016
1514	Rapeseed, Colzo/Mustrd	5,692	50,305	28,111
1511	Palm Oil, N Chem Modif	430	900	749
1518	Chem Modified; Inedbl	283	409	726
1513	Coconut, Palm, Babassu	96	82	113
1507	Soybean Oil	25	1,192	5,215
Corn				
110812	Corn (Maize)	2,020	11,985	250
100590	Not Seed	69,373	55,489	52,987
Wood Granules				
4401	Fuel In Log; Chips, Etc	1,307,411	1,422,421	1,436,819
	Including			
440110	Log, Billet, Twig, Etc	200,100	152,007	97,634
440121	Chips, Coniferous	700,626	784,386	758,354
440122	Chips, Nonconiferous	81,305	78,835	91,289
440130	Sawdust, Waste, Scrap	325,379	407,191	489,541
Source: State Customs Service of the Russian Federation				

Table 7. Russia: Exports of Fuel in Logs, Chips, Etc., by Countries, CYs 2005-2007, Metric Tons

Country	2005	2006	2007
The World	1,307,411	1,422,421	1,436,819
Finland	1,000,812	1,114,462	1,024,222
Sweden	48,407	96,169	126,897
Turkey	41,687	54,102	63,412
Denmark	47,623	23,048	47,518
Japan	103,178	55,705	44,634
United Kingdom	14,398	228	35,318
Netherlands	0	4,706	20,085
Poland	57	926	18,537
Lithuania	422	3,661	15,11
Latvia	6,467	1,007	14,223
Norway	24,807	6,704	9,446
Germany	21	2,397	4,738
China	1,484	5,008	4,241
Ireland	125	171	2,661
Estonia	3,278	7,308	2,151
Source: State Customs Service of the Russian Federation			

It is estimated that Russian agricultural enterprises consume around 5.5 million MT diesel oil and about 2 million MT of petroleum annually. Rapidly rising oil prices have pushed up the share of oil in the prime cost of agricultural production by 370 – 470 percent over the past 5 years.

Rapeseed Production for Biodiesel

Russia's area sown to rapeseeds is forecast at 690,000 hectares, 30,000 hectares more than in 2007, and production is forecast to increase by 18,000 MT to 650,000 MT. In 2007, the Russian Ministry of Agriculture announced the beginning of a special program "Rapeseeds". According to this plan, in the 5-10 years, area sown to rapeseeds may increase to 7-8 million hectares and production may reach 20-21 MMT. However, the program is not supported by any comprehensive financing, and relies on hypothetical significant increase in domestic and foreign demand for biofuel. Setting aside growing competition for arable land, experts point out two major obstacles on the way to increase rapeseeds production in Russia significantly: yields and processing.

Interfax reports that during an opening ceremony for a new rapeseed plant in Lipetsk in the beginning of April 2008, Russian Minister of Agriculture Aleksey Gordeyev stated that Russia will triple rapeseed production to 3.5 million MT in the next three years. According to the Minister, rapeseed production totaled 1.5 million MT in 2007 compared to 720,000 MT in 2006. Minister Gordeyev stressed the need to pass a law that would stipulate mandatory use of biofuel for 5 percent of motor oil.

Investment in the new rapeseed processing plant called Liboil totaled 500 million rubles. The plant reportedly was built with the use of loans from Sberbank. The first phase of the plant includes capacity to process 80,000 MT of oil per year. Output will increase to 120,000 MT in 2009-2010 when the plant is expected to reach full production capacity. The plant will be the largest rapeseed processor in the Central Federal District. The second phase of the plant envisions the construction of a plant that will produce biodiesel fuel.

Relevant Reports

RS7044 Bio-Fuel Annual 2007

<http://www.fas.usda.gov/gainfiles/200706/146291296.pdf>

RS8026 Grain and Feed / Russia Begins Wheat Futures Trade

<http://www.fas.usda.gov/gainfiles/200804/146294261.pdf>

RS8024 Grain and Feed / Annual

<http://www.fas.usda.gov/gainfiles/200804/146294162.pdf>

RS8022 Grain and Feed / Grain Intervention (Procurement) Prices for 2008

<http://www.fas.usda.gov/gainfiles/200803/146294105.pdf>

RS8033 Grain and Feed / May Monthly Update

<http://www.fas.usda.gov/gainfiles/200804/146294513.pdf>

RS7042 Oilseeds and Products/Annual 2007

<http://www.fas.usda.gov/gainfiles/200705/146281200.pdf>