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BIOFUELS ANNUAL

Biofuels

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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 biofuels remains limited in Russia. Current biofuels production is minimal and is mostly driven by potential demand from the European Union.

Post:

Moscow

Commodities:

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Executive Summary:

Russia currently produces small amounts of biofuels from a number small-scaled projects operating

in Russia and supported mostly by foreign businesses or provincial government initiatives. Because Russia is one of the world's largest producers and exporters of fossil fuels, biofuels production has not a priority for the government and investments in the sector are considered insignificant. However, due to international environmental commitments of the Russian government and export opportunities to the European Union, the government is working on improving mechanisms to stimulate development of alternative sources of energy.

Increased grain prices and the impact of the financial crisis in the Russian economy have slowed down plans to construct new ethanol plants and upgrade existing facilities. Also, during the past few years several ethanol plants have gone bankrupt due to the high cost of the technology and lack of governmental incentives. According to Director of National Biofuels Association research in Russia is now focused on developing biofuels from timber waste.

Author Defined:

Policies Supporting Production and Use of Biofuels

On January 8, 2009, the Russian government adopted a resolution on the priorities through 2020 for increasing energy efficiency from renewable sources. The new resolution foresees a number of measures that are aimed at improving electrical power originating from renewable sources.

Currently hydro resources are the most common renewable energy sources being used in Russia. There are few projects using other types of energy sources currently under operation in Russia, including wind park station in Republic of Bashkiriya and Kaliningrad oblast, geothermal station in Kamchatka (energy capacity of 60 MVT), and tidal hydroelectric plant in Kolskiy Peninsula.

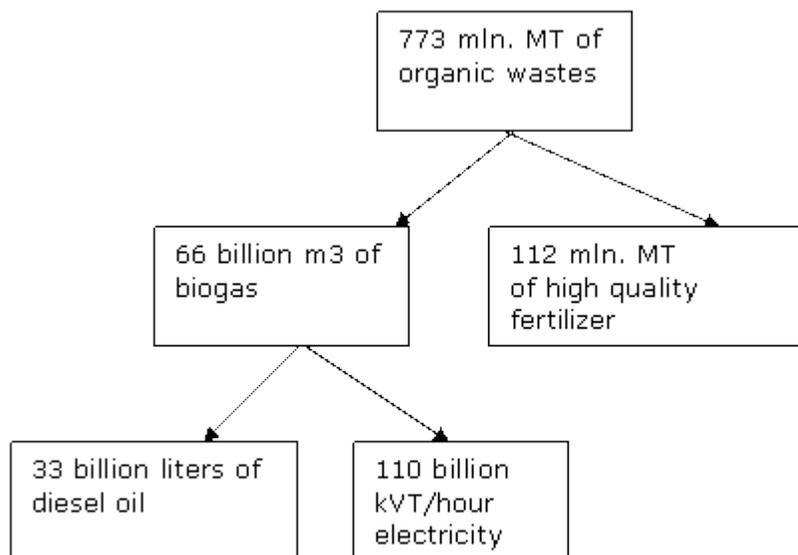
Overall alternative energy sources currently produce 8.5 billion kVT/ hour, annually, which is less than one percent of Russia's total energy production. The government resolution stipulates increasing the share of renewable sources of energy in Russia to 1.5 percent in 2010, and to 4.5 percent – in 2020.

Nikolay Sorokin from the Ministry of Agriculture of Russian Federation reports that currently Russia is in the initial stage of establishing regulatory norms for bio energy development. He also stated that Ministry of Agriculture in collaboration with six more Russian ministries and organizations are working on bio energy production in Russia and developing standards for biofuels.

According to representative of the Federation Council, the Russian government has not yet decided the most efficient type of biofuels to be produced in Russia. Meanwhile, the Ministry of Agriculture believes that agriculture can easily become energy-independent due to large amounts of organic waste. Below are some statistics on organic waste distribution through Russia.

Areas of Russia	Amounts of Estimated Organic Waste
North-Western region	27 mln. MT 4.3 %
Central Federal Region	96.9 mln. MT or 15.5 %
Southern Region	225 mln. MT or 36%
Volga Valley Federal District	157 mln. MT or 25 %
Ural Federal District	23.5 mln. MT or 3.8 %
Siberia Federal District	95.6 mln. MT or 15.3 %
Far Eastern Federal District	8.2 mln MT or 1.3 %

According to the Russian Academy of Sciences, agricultural sector produces up to 773 million MT of organic wastes annually.



More detailed information about the conference can be viewed in English at www.alt-energy.ru.

Biomass Energy Potential

Another important initiative of the Russian government is to increase the share of renewable sources of energy to three percent, with biomass accounting for most of the increase. Ministry of Industrial Energy of Russia currently develops a separate program on renewable sources, including

subordinate legislation that will regulate the use of renewable sources of energy.

The Federal Forestry Agency sees a significant 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. Russian forests also provide the largest land-based carbon sink in the world and one of the most biodiverse ecosystems.

Wood pellets production is one of the potential industries for developing in Russia. According to most optimistic forecast, published in Bioenergy International magazine, world market of wood pellets will increase from 10 million MT annually to 120-140 million MT in the near future. The development of the Russian market of wood pellets will be driven by stronger demand from Europe. One of the wood pellet facilities in Karelia "Biogran" has increased its production from 1,500 MT pellets monthly in 2008 to 2,000-2,500 MT in 2009. The increase is attributed to higher demand of the product in Finland. Due to the vast forestry resources of 9.1 million hectares, and an increasing need for waste utilization from 45 sawing facilities currently operating in the region, the local government launched a program that will allow the use of wood waste in local heating stations.

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

1. Development of raw material base;
2. Banks are not willing to provide finance to biofuels projects before land ownership is resolve in Russia. Although 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;
3. Obsolete equipment are not in compliance with European requirements;
4. Lack of qualified specialists on bio energy;
5. Promoting bio energy production to the domestic and international markets. This type of product should occupy a certain niche in the energy balance of the country.

Petroleum, Natural Gas and Coal Based Energy Market

According to Global Insight reports, the production and distribution of electricity, gas and water, have increased by 1.2 percent in 2008 compared with a 0.7 percent decline in 2007. The increase was mainly attributed to a particularly warm weather pattern in the winter quarter. In the first quarter of 2009, the share of oil exports in the overall Russian exports is accounted for 31.3 percent,

4.4. percent lower versus the first quarter of 2008. Oil's share of Russian fuel exports and energy products in the same period is estimated at 48.2 percent, a drop of 2.5 percent, versus the first quarter of 2008.

Production (in yellow) and export (in brown) of oil in the 1st quarter 2009:



Source: State Statistics Service

Table 1: Russia: Oil Production, Sales in the domestic market and Export (including gas condensate), Jan.-March 2009

	1 st quarter 2009	
	Million MT	In % to 1 st quarter 2008
Production	119.7	98.7
Sales (processing) in the domestic market	58.0	97.5
Imports	0.5	94.2
Exports	60.5	98.8
Exports share in production (%)	50.5	

Source: State Statistics Service, Federal Customs Service

Table 2: Russia: Production of Major Energy Sources, 2008

	2008	As a percent of 2007
Production of oil with gas condensate, million MT	488	-0.3
Production of gas, billion m ³	664	1.7
Coal production	326	3.9
Electricity, billion kW	1,037	2.2

Source: MinTop Magazine #12,
2008

Table 3: Russia: Distribution of petroleum products in 2006-2008, 1, 000 metric tons

	2006	2007	2008 preliminary
Automobile Gasoline			
Resources	31,098.0	35,092	35,898
- production	31,205.6	35,096	35,746
- imports	6.9	14.9	240.6
- change of stocks	+114.5	+19.7	+88.5
Use			
- sales in the domestic market	25,253.9	29,085	31,437
- - - through gas stations	19,318.2	25,478	27,423
- exports	5,844.1	6006	4,460
Diesel Fuel			
Resources	57,929.4	66,265	68,973
- production	58,319.9	66,302	69,019
- imports	0.3	0.7	246.9
- change of stocks	+390.8	+37.2	+292.3
Use			
- sales in the domestic market	24,458.3	29,479	31,594
- exports	33,471.1	36,786	37,379
Bunker Oil (Mazut)			
Resources	57,431.5	66,534	68,617
- production	57,544.0	66,742	68,032
- imports	24.7	21.9	329.6
- change of stocks	+137.2	+229.8	-255.4
Use			
- sales in the domestic market	17,336.3	15,380	12,158
- exports	40,095.2	51,154	56,458

Source: Social-Economic Situation in Russia (Monthly statistics of the Federal Statistical Service),
January 2008, January 2009

The status of Bio energy Projects in Russia (Biofuels and Biodiesel)

In 2006, 25 companies intended to construct biofuel facilities in Russia with potential investments of \$1 billion. However, to date only one plant producing bioethanol, GK "Titan" in Omsk oblast, is fully operating. The main reason for freezing the projects is the lack of subsidies from the

government and high prices for agricultural products.

Between 2006 and 2008 a number initiative projects in biodiesel production have been declared in Russia, including the projects of “Rusbiodiesel” (Krasnodarsk kray), “Efko” (Belgorod oblast.), “Direct-Holding” (Lipetsk oblast) etc. However, none of the projects have been implemented so far. The major reasons for the failure to implement are the high cost of biodiesel, ambiguous government policy towards biofuel producers and the fact that domestic market for biofuel is not functional do to a lack of equipment adopted for use of biodiesel.

A lot of programs that have been initiated on biofuel development in Russia have been abandoned. In 2008, the Program on growing and processing rapeseed in Nizhegorod oblast was terminated. According to the decision of the local authorities of Nizhniy Novgorod decided to reallocate the money into activities for developing elite seed farming for the period till 2012.

According to other sources, developing biofuels is possible only when the price for agricultural products is stable and the price for traditional energy source increases. Experts attribute this with growing wheat and oilseeds prices worldwide making biofuel production non-profitable. The development of the biofuel sector is not stipulated in National Agricultural Priority Project, and with lack of the government support the sector is deemed for failure.

Experts believe that the company “Titan” has got the most perspective biofuels project. The company has 2 ways for sustaining long-term profitability: alternative raw material and diversification. The company uses straw and sawdust in the production instead of wheat as it 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 (1,25 mln. heads).

Russian statistics do not report any bioethanol production, export or import in 2008. However, local experts estimate that bioethanol produced in Russia has good perspective for promotion to EU and Japan. They also estimate potential market of bioethanol at 850 million liters. Russia is more interested in developing of biofuels of the second generation, such as from plant cellulose. According to some sources the Russian government considers the possibility of building around 30 facilities for bio butanol production. One of the Russian companies “Corporation of Biotechnology” produced a trial shipment of bio butanol for use as addition to gas oil in different proportions in the Russian automobile Lada Kalina. The results of emission tests have shown significant drop in exhaust emissions from the engines to environment.

In 2007 “Efko” company intended to invest into a biodiesel facility with 10,000 MT capacity per year. The company planned to use sunflower seed, rapeseed and soybean oil for biodiesel production. However, the project was frozen since the price for sunflower seed more than doubled since 2007.

Table 4: Russia: Status of Biofuels Facilities, April 2008

Company	Region	Capacity (ready product, in thousand MT/hectare)	Investments, mln.Euro (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 (frozen)
Metasintez *	Tambov oblast	250	220	Looking for location (frozen)
Pava*	Altay Kray	100	150	Looking for location (frozen)
Pava*	Altay Kray	100	150	Looking for location
Rusbiodiesel**	Krasnodar kray	100	17	Preparation of documentation
Titan-agro*	Omsk oblast	150	150	In operation
Extrasib*	Tomsk oblast	15	8	Frozen
Efko **	Krasnodar Kray	10	6-9	Frozen
Yugtransitservice*	Rostov Oblast	n/a	80-120	Closed
* bioethanol				
** biodiesel				
Source: Agroinvestor magazine # 3, April 2008				

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

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

Analysts believe there are few ways to make biofuels profitable. One of them is to integrate, raw

material for biofuels production, the second one is to look for alternative raw material. According to publication in Agriinvestor Magazine, diversification is another option to make biofuels 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. 100,000 hectares are allocated for grain that will be processed for ethanol while as barda will be used as cattle feed. Experts believe that this joint venture has perspective for profitable production since the company can save more on feed and transportation expenses.

Table 5: Potential Biofuels Source Export data, Metric Tons

HS	Description	2006	2007	2008
Oilseeds				
1206	Sunflower Seeds	233,534	99,317	85,028
1205	Rape Or Colza Seeds	63,235	75,522	48,057
1201	Soybeans	3,245	16,501	4,506
Oils				
151211	Sun/Safflower Crude	619,208	519,677	369,896
151219	Sun/Safflower Refin	65,556	94,016	120,361
1514	Rapeseed,Colzo/Mustrd	50,305	28,111	70,407
1511	Palm Oil,N Chem Modif	900	749	1,122
1518	Chem Modified;Inedbl	409	726	1,167
1513	Coconut,Palm,Babassu	82	113	138
1507	Soybean Oil	1,192	5,215	40,588
Corn				
110812	Corn (Maize)	11,985	250	279
100590	Not Seed	55,489	52,987	198,340
Wood Granules				
4401	Fuel In Log;Chips,Etc	1,422,421	1,436,819	1,642,548
	Including			
440110	Log,Billet,Twig,Etc	152,007	97,634	198,991
440121	Chips,Coniferous	784,386	758,354	812,714
440122	Chips,Nonconiferous	78,835	91,289	119,985

440130	Sawdust,Waste,Scrap	407,191	489,541	510,859
Source: State Customs Service of the Russian Federation				

Table 6. Exports of Fuel in Logs, Chips, Etc., by Countries, CYs 2006-2008, Metric Tons

Country	2006	2007	2008
The World	1,422,421	1,436,819	1,642,548
Finland	1,114,462	1,024,222	1,125,690
Sweden	96,169	126,897	241,148
Japan	55,705	44,634	51,596
United Kingdom	228	35,318	51,403
Denmark	23,048	47,518	45,074
Latvia	1,007	14,223	30,723
Lithuania	3,661	15,11	19,426
Belgium	37,444	1,092	13,828
Poland	926	18,537	13,765
Estonia	7,308	2,151	13,395
Turkey	54,102	63,412	10,076
Germany	2,397	4,738	9,840
Norway	6,704	9,446	8,825
China	5,008	4,241	4,144
Source: State Customs Service			

Energy

The Ministry of Agriculture together with provincial government and Ministry of Economic Development calculated that in 2009 Russian farmers will need 5.45 million metric tons (MMT) of diesel fuel and 2.02 MMT of gasoline. Farmers' expenses on this gas and fuel will reach 137.8 billion rubles (\$3.94 billion). This spring diesel fuel requirements are estimated at 1.5 MMT, and in gasoline – at 0.5 MMT.

The Russian government has reported on an agreement with Russian oil companies that in spring 2009 these companies will sell diesel fuel and low grade gasoline to farmers at fixed prices. Prices are fixed at the January 15, 2009 level: 13,823 RUR (\$395) per metric ton of diesel fuel and 12,589 RUR (\$360) per metric ton for gasoline. Media reports that in order to provide for the "uniform channel of fuel supply" and to eliminate middlemen, the government plans to create a special fuel purchasing unit at Rosselkhozbank [1] .

Rapeseed Production

Production of rapeseed will increase to 770,000 metric tons, and might comprise 9 percent of the three major crops' production. Rapeseeds production is increasing in the regions where climate is not favorable for sunflower seeds and soybeans, and in these regions rapeseed meal is less expensive than sunflower seed and soybean meal. Rapeseed and rapeseed oil have also been in high demand in Europe, and exports have been increasing.

Exports of rapeseed in MY2008 are expected to reach 150,000 MT versus 60,000 MT in MY 2007. The increase is attributed to larger sown area and continued demand from Europe for further biofuel processing. Exports of rapeseed oil have also increased by 60,000 MT in MY 2008 in comparison with MY 2007.

However, the weak ruble, and economic slowdown in European countries may decrease foreign demand for Russian rapeseeds.

For more details refer to GAIN RS9027 Oilseeds and Products Annual.

^[1] For more information see GAIN RS9017 Agricultural Situation / Government Fixed Diesel Fuel and Gas Prices for Farmers