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Russian Federation

Biofuels Annual

Biofuels Update

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Report Highlights:

As one of the world's leading producers and exporters of oil and gas, biofuels have an insignificant share in the overall energy production matrix of Russia, with an estimate of only 1.2 percent, and biomass accounting for only 0.5 percent. While there are no official statistics that measure what share of total energy production biofuels account for, it is estimated that biofuels make up 5 percent of Russia's heating energy and 1 percent of its electrical power. The development of the biofuels sector has never been a priority for the government in the past, and currently with the strong focus on development of the import substitution program, it will be even less of a priority. No major breakthrough is expected at least in the short-term. Wood pellet production and exports will likely continue to grow, driven primarily by increasing demand from Europe and Asian markets, soft ruble and increasing local consumption.

Post:

Moscow

Commodities:**Executive Summary:**

Since the August 2014 food embargo, one of the major focuses of the Russian government is to further develop the agricultural sector. The goal is not only to cover the gap of imported products, but also to increase local production to the levels outlined in the Russian Food Security Doctrine by 2020. The development of the biofuels sector has never been a priority for the government in the past, and currently with the strong focus on development of the import substitution program, it will be even less of a priority. There are government measures in place to support local agricultural producers and infrastructure to increase the volumes and quality of locally produced food products. Development of the bioethanol and biodiesel sectors is a low priority for the government. No major breakthrough is expected at least in the short-term. The production of biofuels still remains small and has almost no impact on Russia's overall domestic grain and oilseed prices.

The Federal Forestry Agency considers biomass production as the main alternative for Russia's developing biofuel sector. Russia has huge potential for biomass production; however, due to the large supply of high-value fossil fuels, and lack of government incentives for businesses to utilize wood waste, only large wood processing facilities are interested in the commercial production of biomass. In addition, due to the Russian government's focus on import substitution and investing into production agriculture and infrastructure, experts do not anticipate an increase in development of biomass production in the near-term.

The European Union's growing interest in biofuels is increasing demand for wood pellets. This will continue to be a major incentive for Russia to increase production of wood pellets. Currently, Russia is the third largest exporter of wood pellets to the EU, after the United States and Canada.

Since late 2014, following the drop in world oil prices and changes in Russian domestic monetary policies, the ruble depreciated sharply and has been volatile. This resulted in annual consumer price inflation of 12.9 percent in 2015. In response to accelerating inflation, the Central Bank of Russia (CBR) changed the key interest rate eight times between November 2014 and August 2015. The key rate peaked at 17 percent in December 2014, and has been kept at 11 percent since August 2015. Despite some positive signs[1], CBR kept the key rate at 11 percent in March 2016. Russian fiscal and monetary authorities consolidated their efforts in pursuing the mid-term goal of 4 percent annual inflation in 2017. Also, the Government of Russia (GOR) has struggled to keep the 2016 budget deficit within the target of 3 percent of GDP. The GOR is currently reviewing the fiscal plan, which was based on projected revenues from oil exports at a price of 50 US dollars per barrel. According to the Finance Ministry the nation's main export blend averaged 31.99 US dollars in the first three months of 2016. Given the current economic conditions in Russia, development of the biofuels sector is not likely to get much attention or resources from the Government of Russia.

The Russian government has outlined as a national objective the goal of Russia becoming 40 percent

more energy-efficiency by 2020. While there have been previous attempts at the federal level to promote the production of biofuels, there are also a small number of activities at the regional level. The number of innovative projects aimed at production of alternative energies has increased in the past years, such as those from plant cellulose (including wood or oilseeds) and agricultural wastes, along with production of biofuel raw materials for export (including fuel pellets, rapeseeds, and rapeseed oil) supported by the regional administration and investors.

Due to its abundance of petroleum and natural gas, Russia produces a small amount of biofuels and has minimal domestic demand. According to experts, Russian biofuel production will not be fully developed in the next 10 years, as the sector is not considered as a national priority. Different sources estimate that renewable energies, including biofuel, represent 1.2 percent of Russia's total energy production, with biomass consisting 0.5 percent. While there are no official statistics that measure what share of total energy production biofuels account for, it is estimated that biofuels make up 5 percent of Russia's heating energy and 1 percent of its electrical power.

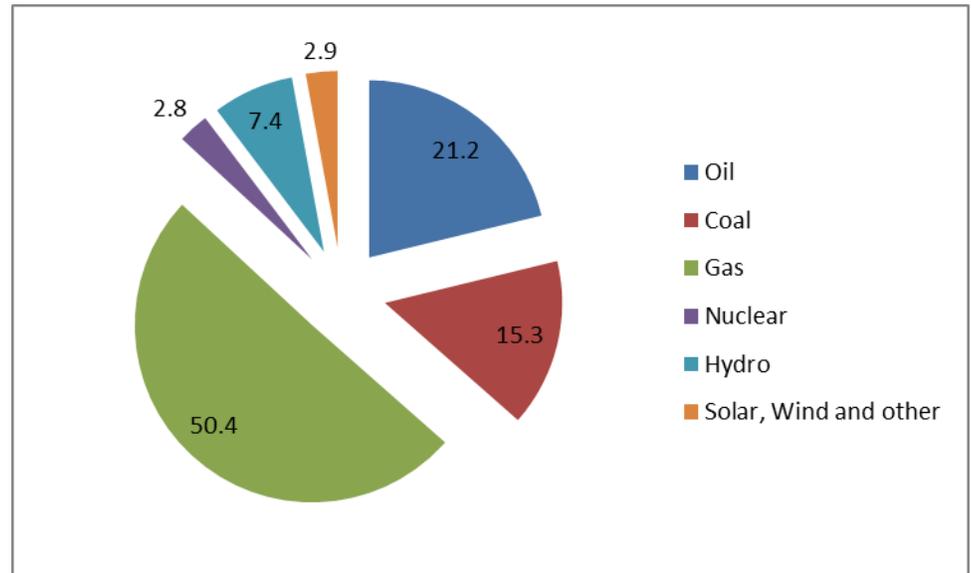
The Russian Ministry of Energy reports that the volume of technically accessible renewable sources of energy in Russia is estimated at 24.2 Btoe. The share of electricity generated by renewable sources accounts for only 1 percent, while the share of thermal energy generated from renewable resources represents 5 percent or 3000 million Gcal. At present, Russia utilizes only 30 percent of its economically viable hydro-energetic resources.

The Russian Ministry of Energy also reports that there are no government-backed biofuel projects in operation at this time. The majority of biofuel ventures in Russia are supported by regional governments or financed by foreign investors. In most circumstances these projects are in the pilot phase and produce just enough biofuel to generate heat/electricity for their own facility, or for the production of organic fertilizer from agricultural waste. Currently, there is no industrial production of either bioethanol or biodiesel in Russia, except for several facilities that are operating in the regions and are supported by the regional administration or private companies.

Disclaimer: This report presents the situation and outlook for biofuels in Russia. This report presents the views of the authors and does not reflect the official views of the U.S. Department of Agriculture (USDA). The data are not official USDA data. Official government statistics on biofuels are not available. This report is based on analytical assessments, trade sources and not official data.

[1] In March 2016 inflation slowed to 7.3 percent in annualized terms and the ruble appreciated by 8.8 percent against US dollar (Sources: Rosstat, CBR)

Table 1: Russia's Energy Consumption by Type of Resources in 2014



Source: www.ecolife.ru

Policy and Programs

Russia is making continued efforts in the developing regulatory norms for bio-energy development and standards for biofuels. Trade sources indicate that without government and other development policy measures the sector is unlikely to develop.

Currently the development of the Russian bioenergy industry is outlined in the following documents:

- 1) Energy Strategy of Russia until 2030 (approved by Government resolution # dated November 30, 2009);
- 2) State Program of the Russian Federation "Energy savings and increasing efficiency of electrical power generation until 2020" (approved by Government resolution # dated April 8, 2010);
- 3) State Program "Industry Development and Increasing Competitiveness until 2020" (approved by Government resolution on December 27, 2012);
- 4) State Program "Development of Agriculture and Market Regulation of agricultural products, raw material and food for the period 2013-2020 (approved by Government resolution # dated July 14, 2012);
- 5) Roadmap for the Development of Biotechnology Gene Engineering until 2020 (approved by the GOR in 2013).
- 6) An action plan aimed at transferring from old inefficient technologies to introducing the best available technologies. (Government Resolution # 398-p dated March 14, 2013).
- 7) Roadmap "Introduction of Innovative Technologies and Modern Materials in the Energy Sector" for the period till 2018." (Government resolution #1217-p dated July 14, 2012).

2014).

The Russian Unified Energy system consists of 69 regional energy systems that in turn are divided into 10 unified energy systems of the Eastern region, Siberia and Urals. Middle Volga, southern and north western electrical energy complex of Russia includes 700 electrical stations with capacity over 5 MWh. Total installed capacity of electrical stations in Russia is estimated at 120 million kWh. The percentage share of stations, by type of electrical generation, are as follows: thermal power stations 68.4 percent, hydraulic 20.3 percent, and nuclear about 11 percent.

Currently, the situation with energy supply in rural areas is inconsistent. The southern, western and central parts of Russia mostly have centralized energy supplies, while the eastern, Siberia and Far Eastern regions have low energy security, with both centralized and decentralized systems. According to a publication in the “Malaya Energetika” magazine, 2014, seventy percent of the territory of Russia, with 20 percent of the total population, is suitable for a zone of decentralized energy supply, mostly in rural areas. According to the same publication, gas supply provisions in populated areas (urban communities) accounts for 63 percent in urban and 47 percent in rural communities).

According to the Russian Ministry of Energy, renewable energy should be considered an important element for sustainable development of rural territories. The forecast of the Ministry sets the following objectives for the installed capacity of Russian energy sector by 2020:

Wind power – 15 GWh; biomass – 7 GWh; tide water power stations – 6 GWh; geothermal energy – 4 GWh; small hydrostations – 2 GWh, and solar energy - 1 GWh.

Russia has a high potential for development of domestic hydropower. Nine percent of the world's water resources are concentrated in Russia. To date, total hydro energy potential is estimated at 2,900 billion kWh per hour of annual electrical power production or 17 GWh/hours for 1 square kilometer of the territory. However, only 20 percent of this potential is being utilized. The major obstacle in developing local hydro energy is remoteness (most of the potential is located in eastern and central Siberia and the Far East) with development of power stations far from the major consumers of electrical power.

Russian hydroelectric power stations provide annual saving of 50 MMT of conditional fuel, whereas potential savings may go up as high as 250 MMT. Currently hydro stations reduce CO₂ emissions in the atmosphere up to 60 MMT. This provides Russia with an unlimited potential to build power facilities even with strict requirements on restricting emissions of greenhouse gases.

There are 102 hydroelectric power stations with capacity of over 100 MW in operation in Russia. The total installed capacity of hydrounits on hydroelectric power stations in Russia is about 46,000 MW (the 5th place in the world). Annually, Russian hydroelectric power stations produce 153,300 billion kWh of electric power. The share of hydropower stations in the total production of electrical power in Russia is accounted for 15.2 percent.

The largest federal hydrogenation company, JSC RusHydro, manages about 68 objects.

renewable energy, including 9 stations in Volga Kams, with total installed capacity of 100 MWh. The company also operates geothermal stations in the Kamchatka region.

Development of geothermal energy in Russia also has strong potential. Currently there are 100 natural thermal waters. The total electrical potential of all thermal fields is estimated at 100,000 MWh, however, only 80 MWh is being utilized. All operating geothermal stations are located on the Kamchatka peninsula and Kurils.

Communal service of the Russian Federation reports that for heat supply system it spends more than 82 million tons of oil equivalent (toe) annually. Of the total, natural gas accounts for 27 percent, coal for 27 percent, residual oil for 7 percent, and woodfire and wood waste for 39 percent. Other types of oil, including diesel oil, peat, electricity for heating, account for 1 percent. Forty-one regions of the Russian Federation use residual oil as the main type of heating. Of these forty-one, 28 Russian regions could potentially cover 100 percent of their heating demand from residual oil generated from wood production and processing. In addition, 15 regions can generate up to 50 percent of residual oil locally. Experts calculate that the savings on expenditures on the difference in cost between residual oil and oil generated from wood processing is 16 billion rubles annually (about \$250 million).

Currently, Russia utilizes only an approximately 3.5 percent of its potential renewable energy resources. Of total power generation in Russia, renewable resources' share accounts for one percent. Of heat energy, renewable resources' share accounts for 5 percent.

The Russian Government is also discussing a draft program on modernization of electrical energy through 2020. The Program outlined as its objective to make Russia 40 percent energy-efficient by 2020 and to develop different types of renewable resources for electrical power generation, including wind power station, electricity station on biomass, and small hydro stations. This program's objective is to construct facilities with biomass utilization that will generate 580 MWh electrical powers; and biogas facilities for generation 330 MWh. Experts from the Ministry of Energy estimate the potential market for renewable resources in Russia at \$20 billion.

However, according to recent rules approved by the Government, in May 2013 the state government financial support will be extended only to facilities operating on sun, wind, and hydro. Both facilities of biomass and biogas will not get financial support at least until 2015 from the federal budget, since the Government feels that these technologies have not reached an industrial scale yet, and as a result these support mechanisms would not be effective. This approach will make Russia fall even further behind in stimulating the biofuel sector and developing innovative technologies.

Future objectives for the gas and oil sectors are outlined in the Energy Strategy of Russia until 2030. The priority objective is modernization and reconstruction of the oil processing, increasing the processing rate (depth) of crude oil from 75 percent in 2010 to 80 percent by 2030. The document stipulates that this is the major condition that will allow transfer the industry to a new technical level and will be able to supply Russia with local high quality oil including diesel, gasoline lubricants and other products for oil chemistry industry. The increase

efficiency in processing oil will allow an increase in exports of motor oils by 20 percent.

The Energy Strategy also foresees an increase in production of oil products from the 210 MMT to 210-235 MMT by 2020. The Strategy has an increase in production of diesel and jet fuel from 110 MMT up to 130 MMT by 2020.

The Energy Strategy also foresees a number of measures and targets for developing the gas sector. The priority for the government includes developing infrastructure and competition in gas markets, support to development of independent gas producers, as well as cautious approach to rising prices for gas and developing law and regulation in the gas sector.

The Russian Transport Strategy until 2030 was approved by the government Resolution dated November 22, 2008. The document establishes the objectives and priorities for development of the transportation sphere in Russia as well as programs and financial support. According to the latest available data for CY2014 from Rosstat, the length of total railway in Russia is reported at 86,000 km, 1.3 million km of automobile roads, 101,000 km of water ways, 7,300 km of trolley and tramp tracks, 500 km of subway tracks.

Gasoline and Diesel

Russia's abundant resources of petroleum and natural gas (and subsidized natural gas) have removed most incentives for both more efficient use of fuel and any development of alternative energy sources. Russia owns 23 percent of global natural gas resources, 20 percent of global coal resources, and 4-5 percent of global resources of petroleum. Russia provides 13.1 percent of the total world trade of coal. Russia accounts for 13.1 percent of world production of oil and 17.9 percent of world production of gas. According to Russian Customs Statistics, in 2015 Russia produced 533 MMT of oil, including gas condensate, 1.3 percent higher than in 2014. Natural gas production slowed to 554 billion cubic meters in 2015, a 2.5 percent decrease from 2014.

Russia's nuclear energy accounts for 5 percent of total world nuclear electricity generation, 45 percent of the nuclear reactor industry, 45 percent of the world market of uranium enrichment, and provides for 8 percent of the world production of natural uranium.

Large companies as Rosneft, LukOil, SurgutNeftegas, Gasprom Neft, Tatneft, Slavneft, and Russneft account for 87 percent of total production of oil, the remaining share is taken by independent companies.

In 2008, the Russian government adopted the Technical Regulation on Fuels. In 2011, the government amended the document in reference to the requirements for gasoline, diesel, shipping fuel and residual oil, and stipulates a smooth, staged, transfer to production of oil products that will comply with world ecological standards.

The Russian Ministry of Energy reports that production of high octane gasoline in Russia has increased recently. In the period between 2011 and 2014, share of Euro-5 increased from 26 percent to 75 percent, while the share of Euro-4 and Euro-3 decreased from 26 percent to 11 percent and from 41 percent to 11 percent, respectively. The change in production structure

fuels was due to the on-going renovation of oil production facilities and gas excise taxes that has encouraged companies to increase production of gas to the Technical Regulation on Fuels, starting from 2016, all oil processing should start producing gasoline and diesel of class “Euro-5” only. However, producers with conversion, trade of diesel Euro-4 will be allowed until Jul

Post revised the “Fuel Use” table to reflect official, published historical use. Historical fuel use data was sourced from the Russian Statistical Committee. Fuel use projections are based on a variety of industry and government sou

Table 2: Russia: Fuel Use History and Projections

Fuel Use History (Million Liters)								
Calendar Year	2005	2006	2007	2008	2009	2010	2011	2012
Gasoline Total	45.1	47.7	50.5	51.8	51.6	51.8	52.0	51.8
Diesel Total	32.0	34.4	35.1	35.6	35.8	36.0	36.7	38.0
On-road								
Agriculture								
Construction & Mining								
Shipping & Rail								
Industry								
Heating								
Jet Fuel Total	8.9	9.0	9.3	8.6	8.6	9.0	9.3	9.3
Total Fuel Market	86.0	91.1	94.9	96.0	96.0	96.8	98.0	99.4

Fuel Use Projections (Million Liters)								
Calendar Year	2016	2017	2018	2019	2020	2021	2022	2023
Gasoline Total	53.7	54.0	54.8	55.0	56.4	57.2	57.4	56.4
Diesel Total	37.2	36.8	38.1	38.0	36.9	37.0	36.8	36.4
On-road	5.8	5.7	5.9	5.9	5.7	5.7	5.7	5.5
Agriculture	6.0	6.1	6.1	6.0	5.9	5.9	6.1	5.9
Construction & Mining	5.2	5.3	5.5	5.7	5.4	5.3	5.2	5.1
Shipping & Rail	8.3	8.2	8.5	8.3	8.2	8.4	8.2	8.1
Industry	5.9	5.7	5.9	5.9	5.7	5.7	5.6	5.5
Heating	6.0	5.8	6.2	6.2	6.0	6.0	6.0	5.9
Jet Fuel Total	8.5	9.0	9.3	8.6	8.6	9.0	9.3	9.3
Total Fuel Market	99.4	99.8	102.2	101.6	101.9	103.2	103.5	102.4

Source: Rosstat (Russian Federal Statistical Service), Russian Ministry of Energy, Russian Ministry of Transport, Russian National BioEnergy Union, Russian National BioEthanol Association.

Bioethanol/Biodiesel Projects

In March 2015, the Ministry of Economic Development of the Russian Federation (MED) approved amendments to Federal Law “On State Regulation of Production and Turnover of Ethyl Spirit, Alcohol Products Containing Spirit and Limitations of Consumption of Alcohol Products,” developed by the Federal

Service for Regulation of Alcohol Market. MED supported the idea of defining bioethanol and motor bioethanol as an individual product. The documents include a more specific definition of bioethanol identifying that motor oils that contain no more than 10 percent of bioethanol are not subject to regulation as products containing spirit. Also, it exempts the production of bioethanol as an additive to motor oil from excise taxes. The Russian bioethanol community has been lobbying for many years for this exemption. However, so far the amendments have not been approved and there is no indication of when they may get final approval from the government. According to the Russian Biofuels Association, if enacted, the potential for expansion of bioethanol production in the near term will increase up to 2 million MT. This expansion would be primarily for use as an additive. And, the potential for expansion for the use of bioethanol production for blending with 95 percent fossil gasoline (B5) could increase up to 5 percent. However, without strong support from the federal level, these targets are unlikely to be achieved.

Experts estimate potential production capacity of the bioethanol market in Russia at 850 million liters.

According to experts, the demand for ethanol to be used as a gasoline additive is estimated at 320,000 MT (including 200,000 MT of hydrolysis ethanol and 120,000 MT of synthetic ethanol), or about 1 percent of the total volume of gasoline production in Russia.

Currently, “bioethanol” is classified in the general category as “ethyl spirit from all types of raw material” and is not considered as a product of specific intended use. High excise taxes for ethanol in Russia (23.5 rubles per 1 liter), coupled with high production costs and other increasing uses for grain, are the major obstacles for the development of the bioethanol industry.

According to experts the following steps from the government could facilitate the development of the biofuels sector:

1. The government should approve a Resolution that will abolish excise taxes for the production and marketing of “Dehydrated denaturated ethyl spirits with a minimum share of ethyl spirit of 99.5 percent volume” including further processing in ethyl tert-butyl ether (ETBE).
2. In an effort to improve the quality of life in rural territories and ecology in the cities, add construction of bioethanol plants to the National Priority Project “Development of Agriculture and Industrial Sector,” providing 100 percent compensation of interest rate credits from the federal budget.
3. Decrease the excise tax for automobile fuel that contains components from renewable raw material.
4. Initiate construction of a bioethanol plant in one of the provinces with annual production capacity of 120,000 MT.
5. Provide subsidies for producers of raw material for bioethanol and diesel production calculated as per MT of agricultural production.
6. Develop a regulation that sets mandatory requirement for automobile fuel

containing not less than 2 percent oxygen, to decrease environment pollution in large cities.

Table 3.

Ethanol Used as Fuel and Other Industrial Chemicals (Million Liters)										
Calendar Year	2008	2009	2010	2011	2012	2013	2014	2015 _e	2016 _f	2017 _F
Beginning Stocks	0	0	0	0	0	0	0	0	0	0
Fuel Beginning Stocks	0	0	0	0	0	0	0	0	0	0
Production	72,000	71,000	68,340	80,000	85,008	10,760	10,790	10,750	10,910	11,030
Fuel Production						120	150	175	200	210
Imports										
Fuel Imports										
Exports	26,000	25,860	22,340	32,890	39,680	61,000	59,300	58,100	58,800	59,800
Fuel Exports	0	0	0	0	0	0	0	0	0	0
Consumption	46,000	45,140	46,000	47,110	45,400	46,500	48,500	49,300	50,100	50,500
Fuel Consumption						120	150	175	200	210
Ending Stocks										
Fuel Ending Stocks										
Total Balance_C check	0	0	0	0	0	0	0	0	0	0
Fuel Balance _C check	0	0	0	0	0	0	0	0	0	0

r = revised / e = estimate / f = forecast of FAS/Russia

Source: Rosstat (Russian Federal Statistical Service), Russian Customs Committee, trade sources, Russian National Biofuels Association.

Biomass for Heat and Power

The government of Russia has identified the development of Russia's domestic

forestry sector as a necessity, and production within this sector is expected to substantially increase by 2020. While not a priority, the Federal Forestry Agency considers biomass production as the main alternative for Russia's developing biofuel sector. Russia has huge potential for biomass production; however, due to the large supply of high-value fossil fuels, and lack of government incentives for businesses to utilize wood waste, only large wood processing facilities are interested in the commercial production of biomass. In addition, due to the Russian government's focus on import substitution and investing into production agriculture and infrastructure, experts do not anticipate an increase in development of biomass production.

Industry experts also agree that individual regional plans aimed at increasing biofuel production should be considered. The only significant industrial biomass factory is the thermal electricity station "Beliy Ruchey" operating in the Vologda oblast. Its energy capacity is estimated at 6 MWh, which covers partially electricity needs in Vologda region and supplies electricity to the local forestry processing plant. The local administration in Komi Republic has stated that it is supportive of biomass development projects. In 2013, the International Co. Metso, was reported to have supplied technological equipment for wood waste utilization to a processing facility in Syktyvkar. Reportedly, the operation of the project started in the end of CY 2015. The capacity of the electrical station is 4 MWh with annual burning of forestry waste of 83,200 MT.

The Russian Forestry Agency sets total allowable cut at 670 million cubic meters, however only 203 million MT was actually harvested in 2015. The total annual volume of wood waste from logging in Russia is estimated at 14-15 billion MT, which is equivalent to 8 billion tons. Experts estimate that only 8 million m³ of non-commercial timber and wood waste is being used for biofuels in Russia. The majority of wood waste occurs due to limited access to special equipment and modern technologies, as well as a lack of interest from the Russian government and foreign investors in further processing. Current resources of fuel wood is estimated at 90 million cubic meters, including firewood – 51 million m³ (63 percent); crown, stumps, bark – 15 million m³ (15 percent); wastes from sawmilling – 12.7 million m³ (12 percent); wastes from veneer production – 4.1 million m³ (5 percent); wastes from cellulose and paper production – 4.2 million m³ (4 percent).

The "BioChemPlant" Co., Ltd., located in Kirov, is the only plant currently in Russia producing ethanol from nonedible raw material, such as waste from lumber production. In addition, the plant also produces wood pellets. The facility plans to start production of biomethane from the hydrogenation of the carbonic gas formed in the course of fermentation of yeast. This technology creates "green gas." The company "Biochemical plant" together with the Russian center of science «Applied chemistry» in St. Petersburg produces the technology for green gas, and in the near future is expected to produce 4 million m³ this fuel.

Biogas

Experts from the Institute of Energy Strategy estimate that due to vast supplies of agricultural wastes, food processing wastes and municipal wastes 66 billion m³ of biogas and 112 million MT of high value granulated fertilizer could theoretically be produced in Russia. In addition, experts estimate potential production of electricity from biogas is 121, 200 GWh, and heat – 169, 344 GWh. In 2012-2013 two large state corporations “GasEnergoStroy” and “BioGas EnergoStroy” were planning to build 50 biogas power stations in 27 Russian regions with total capacity of 120 MWh. However, so far there are four major biogas projects in 3 regions that are operating in Russia. Currently there is no government program to stimulate construction of biogas facilities in Russia.

Wood Pellets

While Russia’s wood pellet production is relatively young, it accounts for a 6 percent share of world wood pellet exports. Russia ranks 8th in the world for total wood pellet production, with 3 percent of total world wood pellet production. According to FAOSTAT, production of wood pellets in Russia is forecast to increase significantly by 4 MMT by 2020, and 8 MMT by 2025. However, the Russian Ministry of Energy forecasts that production will increase at a lower pace, between 10 and 15 percent annually.

The growing interest from the European Union for biofuels, particularly wood pellets, will continue to be a major incentive for Russia to increase production of wood pellets. Currently, Russia is the third largest exporter of wood pellets to the EU, after the United States and Canada.

According to Rosstat (Russian Federal Statistical Service), Russia produced 978,000 MT of wood pellets in 2015, a 10 percent increase from CY 2014. Sources report that production statistics for wood pellets are not accurate. The statistics primarily capture large-capacity factories, and mid-sized and smaller facilities which operate as part of larger wood processing plants, do not report their production. Inaccuracy of statistics for production of wood pellets also contributes to the high difference in production in CY2013 and CY 2014. As a result, Post believes the actual wood pellet production is higher than reported by RosStat.

The top-10 producers of wood pellets in Russia include:

1. “Vyborg Forestry Industrial Corporation Ltd.” (Vyborg Limited). The facility is located in Leningrad province and has been in operation since 2011. Its annual production is estimated at 400,000 MT, 50 percent of its projected capacity. Nearly 95 percent of the production is exported. Sources report that due to several legal claims regarding tax issues, the facility will not be able to increase production.

2. “SP Arkaim Ltd.” in Khabarovsk province. The facility was built in 2011 to utilize wood waste from sawn timber and laminated panel production facilities in the area. Total annual capacity is reported at 70,000 MT.
3. JSC “LDK-3” in Arkhangesk province has been in operation since 2014. Annual production is 50,000 MT, with projected capacity of 100,000 MT. The company owns its pier, so most production is exported by sea to EU countries.
4. JSC “Lesozavod-25 (part of the State Corporation “Titan”). The plant sources low cost raw material from timber processing facilities of the Titan group, translocating pellets through its own port. The second facility of “Lesozavod-25” has been in operation since 2013. Sources report the projected annual capacity as 75,000 MT. Annual log inputs for both production facilities are estimated at more than 1 million cubic meters.
5. The forestry company “NovoYeniseyevskiy” in Krasnoyarsk province has been in operation since 2010. Its annual capacity is 50,000 MT, however, in 2015 the company built a new production line for pressed fuel to utilize waste. The annual capacity is 80,000 MT.
6. “Mir Granul Ltd” is located in Leningrad province and started operations in 2004. The annual production capacity is 45,000 MT.
7. “DOK Yenisey” is located in Krasnoyarsk province. The facility increased its production from 6.3 thousand MT in 2010 to 45,000 MT in 2014.
8. “North Western Holding Ltd.” is one of the largest wood pellet producers in Leningrad province. Its annual production is 50,000 MT which is mostly shipped to EU and Asian markets.
9. “SvedWood Tikhvin” Ltd. is part of the “Svewood” industrial group founded by IKEA in 1991. The facility has been in operation since 2002, an annual production estimated at 55,000 MT.
10. “Russkiy Pellet Ltd.” in Republic of Mariy El started processing in 2013 and is currently mostly export oriented with annual production of 32,000 MT.

Table 4: Russia: Leading Wood Pellet Production Facilities in 2014:

	Name of the Facility	Province	Annual Production, 1,000 MT
1	Vyborgskay Forestry Industrial Corporation	Leningrad province	300
2	“SP Arkaim”	Khabarovsk province	70
3	JSC LDK-3	Arkhangel'sk province	45
4	NovoYeniseyskiy	Krasnoyarsk province	50

5	Mir Granul	Leningrad province	45
6	JSC “Lesozavod-25”	Arkhangelsk	63
7	DOK Yenisey	Krasnoyarsk	45
8	NorthWestern Holding	Leningrad	40
9	Svedwood Tekhvin	Leningrad	35
10	Russkiy Pellet	Republic of Mariy El	32
11	Biogran	Republic of Karelia	30
12	Setnovov	Novgorod province	25
13	STOD	Tver province	20
	Others		80
	Total		892

Source: www.lesonline.ru based on FAO and the Russian State Customs Service data

Experts report the following new wood pellet production facilities constructed in 2015:

1. “Discovery Peno Ltd.” in Tver oblast (annual production capacity is not reported);
2. JSC “Bionet” in Arkhangelsk province with annual capacity of 150,000 MT;
3. Group of companies “Russian Forestry Pellets” launched a wood pellet production facility in Penza oblast with annual production capacity of 80,000 MT;
4. A new facility with annual production of 90,000 MT plans to start operation in Bryansk oblast;
5. Sources report that 3 new pellet processing facilities were constructed in Irkutsk oblast. An Estonian company, Hekotek, is reported to supply equipment for the facilities. The plant “Magistral’ny” reportedly has an annual capacity of 30,000 MT and two other facilities, in the settlement of Novaya Igirma and Ust-Kut are planned to have annual production of 110,000 MT and 75,000 MT, respectively.

A number of large pellet production plants are reported in the construction phase and are scheduled to start operation in 2017:

- three processing plants in Krasnoyarsk province: “Sibles Porject Ltd.” with annual capacity of 17,200 MT; “Angara Paper Ltd.” with annual capacity of 100,000 MT and JSC “KrasLesInvest” with production capacity 240,000 MT.
- The company “German Pellets” announced the intention to finance construction of a new processing plant German Pellets Nizhniy Novgorod” in Nizhniy Novgorod with projected annual capacity of 500,000 MT of wood pellets.

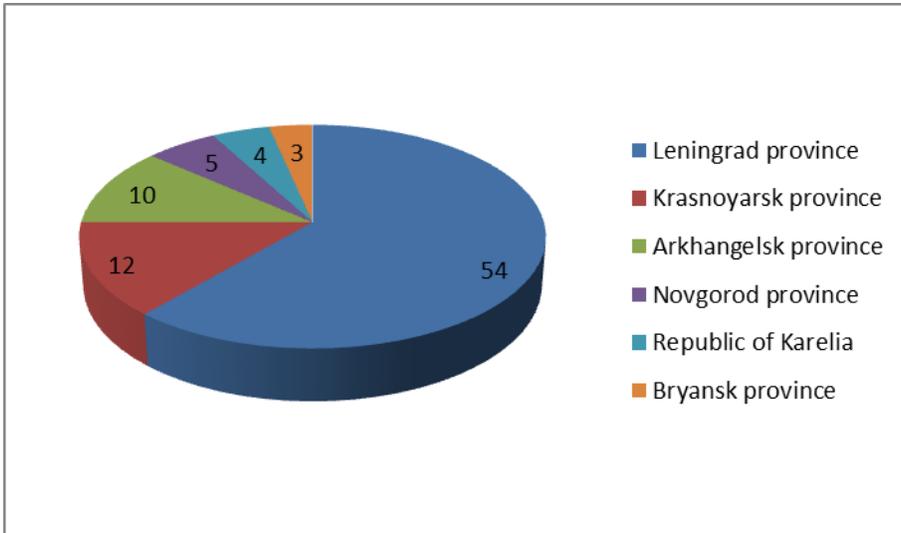
- “Group of Companies “ULK Ltd.” started implementation of a new investment project on the construction of a modern small sized wood processing facility in Arkhangelsk province. The projected capacity is 120,000 MT per year. Wood pellets will be exported to the EU, however, if local demand for wood pellets increases, the facility will be able to supply the local boiler station for heat generation.

According to experts from Lesonline.ru portal, there are about 20 wood pellet facilities in Russia with production capacity from 30,000 to 70,000 MT that have had stable operations since 2010. Reportedly, they produce 50 percent of all wood pellets in Russia. However, analysts project a trend away from large facilities with an increasing number of facilities with smaller capacity, up to 20,000 MT. However, the share in overall pellet production from the smaller facilities accounts for only 14 percent. Given the current economic situation, the number of smaller-capacity facilities is forecast to increase because they have more mobility in sourcing raw materials and can easily market their production locally. About 55 percent of total Russian production of wood pellets is manufactured by 12 processing facilities.

Most Russian pellet producers export wood pellets class ENplus A1, issued by AEBIOM - European Biomass Association that are in compliance with the EU standard. Industry reports that 16 large pellet producers were certified in 2016. Experts believe that smaller producers will not be able to complete certification due to the additional costs and may not be competing for export markets. Since 2015, about 8 Russian producers, including “Novoyeniseyskiy”, “Dok Yenisey Ltd.”, “NorthWestern Holding, and others, have been certified by a new industrial pellet certification system –SPB (Sustainable Biomass partnership).

Currently there are 6 major export oriented provinces in Russia that account for almost 88 percent of Russia’s total wood pellet exports. In 2014, a wood pellet facility in Leningrad province accounted for 54 percent of total Russian wood pellet exports, followed by Krasnoyarsk (12 percent) and Arkhangelsk (10 percent) regions.

Table 5: Major Wood Pellet Export Oriented Russian Provinces, in 2014, %



Source: lesonline.ru

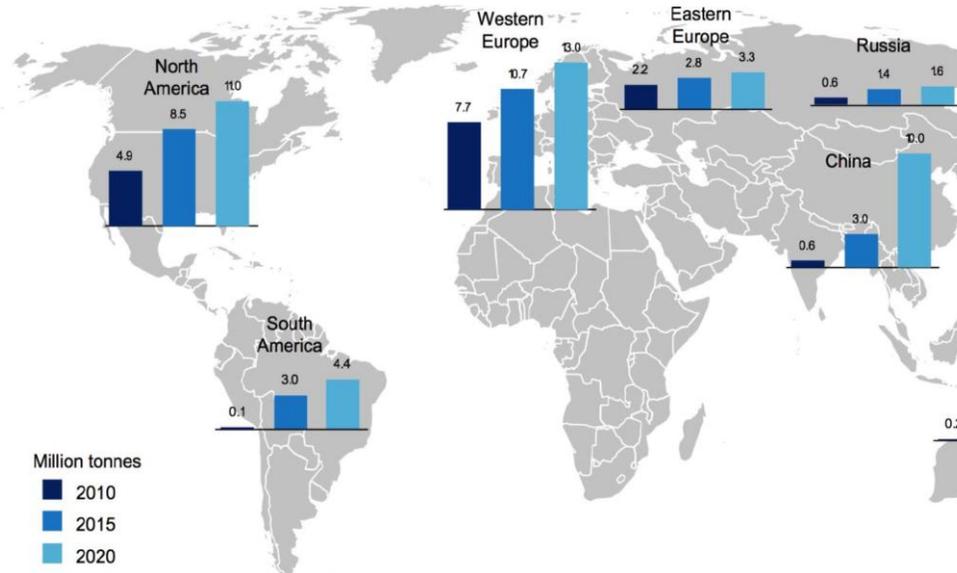
Although overall production is increasing, due to industry consolidation and rapid expansion of larger processors, the total number of processing wood pellets facilities in Russia has been shrinking recently. The number of pellet processing plants dropped from 145 in 2010 to 98 in 2014. However, based on reports from the industry, the number of processing facilities will again start to grow, though at a lower pace. In 2017, the number of facilities is estimated to reach 120.

The majority of wood pellet facilities are located in the Northwest, Central and Volga regions of Russia. The North Western region is the leader in production, where 60 percent of the forests of European Russia are located. The top ten pellet production facilities have a 92 percent export share of the total Russia wood pellet industry, and the remaining 7 percent is destined for South Korea.

In 2016 and 2017, production of wood pellets is forecast to increase about 5-7 percent, due to mostly continued strong EU demand, interest from the Asian markets, competitive export prices, increasing local production, new processing capacity, as well as the Russian government's call for increased efficiency in the forestry sector. However, the lack of a domestic standard for pellets, poor transport infrastructure, a lack of warehouses, and the product's seasonality will all negatively impact the development of the wood pellet sector in Russia. Russia will require large investments in order to upgrade its facilities and expand its production capacity. Domestic demand can also absorb some of the increased, near-term production.

Table 6.

GLOBAL PELLET PRODUCTION - 2010, 2015 AND 2020 OUTLOOK



Source: Biofuels portal wood-pellets.com, General Director “Portal Engineering Ltd.”

In the mid-term, domestic demand for wood pellets is forecast to increase at 10-12 percent annually. In the local market wood pellets are in demand by private heating stations and municipal housing, primarily in heavily forested areas where traditional sources of energy are not accessible. Production of wood pellets is, in most cases, cheaper than gas. According to the National Bioenergy Union, a number of regions, including Moscow oblast, Karelia and Nizhniy Novgorod, Republic of Mari El, and Arkhangelsk oblast, have implemented initiatives to transfer local heating stations from coal or residual oil to wood pellets.

The Russian Customs Service reports exports of wood pellets from Russia in 2015, at 934,000 MT, or more than 6 percent higher than in 2014. The leading export destination for these products was Denmark at 382,000 MT, followed by Sweden at 154,000 MT, and Germany at 73,000 MT, and South Korea at 72,100 MT (7.7 percent of the total Russia’s exports of wood pellet). Europe will continue to be the largest importer of Russian wood pellets.

Near-term foreign demand for wood pellets is likely to increase by 10 percent. Russia has export potential and European pellet demand will continue to stimulate an increase in Russian production. Due to the ruble devaluation since 2014, a number of smaller wood pellet producers were able to start exporting their products to the EU, in spite of previous logistics barriers. However, exports from these facilities will be limited by increasing requirements from the EU in certification.

Table 7: PS& D for Fuel Pellets

Wood Pellets (1,000 MT)										
Calendar Year	2008	2009	2010	2011	2012	2013	2014	2015^e	2016^f	2017^f
Beginning Stocks	0	0	0	0	0	0	0	30	80	30
Production	400	570	620	718	935	1010	1185	1260	1330	1400
Imports	0	0	0	0	0	0	0	0	0	0
Exports	280	405	430	520	730	750	895	930	1070	1100
Consumption	120	165	190	198	205	260	260	280	310	315
Ending Stocks	0	0	0	0	0	0	30	80	30	15
Production Capacity										
Number of Plants	70	97	145	120	103	98	95	110	120	
Capacity Use (%)	55	67	75	75	78	80	80	85	85	87

Source: Rosstat (Russian Federal Statistical Service), Russian Customs Committee, Federal Forestry Agency, trade contacts, Forestry Forum “Green press”, National Bioenergy Union.

Rapeseed Market

FAS/Moscow estimates exports of rapeseed in MY 2015/16 at 50,000 MT. From July 2015 through February 2016, Russia exported only 25,100 MT of rapeseed, including exports of 13,200 MT to China, 4,320 MT to Turkey, and 4,400 MT to Germany. At the same time, Russia exported 150,900 MT of rapeseed oil. Thus, the decreased export duty did not appear to influence

exports. The domestic crushing capacity continues to grow, and exports of rapeseed oil are forecast to grow faster than exports of seed. FAS/Moscow forecasts exports of rapeseed in MY 2016/17 at 90,000 MT, due to increased production.

For more information please refer to GAIN Annual [Oilseeds Products 2016](#).

Notes on Statistical Data

Bioethanol and biodiesel production in Russia is insignificant. There are no official data for these products in Russia. Russian official statistics on fuel use by industry sectors either are not available or differs from the data provided by trade sources and some energy companies and corporations. Also wood pellet production statistics is not very accurate. FAS based estimates on fuel projections on a number of sources, including Ministry of Transport, Ministry of Energy, Industrial Union “Energy Efficiency and Savings”, National Biofuels Association and National Bioenergy Union, as well as trade sources, media and general economic situation in the country with propriety government objectives. Production and trade data for wood pellets is based on GTA, Official Russian Federal Customs Service, and estimates of the FAS posts in EU. FAS Moscow revised PS&D for wood pellets to be consistent with EU FAS Post data and forecasts. Also Post based its estimates on figures of National Biofuels Association, sources from research, analytical institutions as well as agricultural trade sources.

