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INDEPENDENT NEWS FROM RUSSIA

Producing Kilowatts From More Than Oil

By Irina Filatova

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A woman and children enjoying sunny autumn weather in Kolomenskoye park. **Mikhail Metzel**

Russia may be associated more with long, dark winters than sun-drenched days. But that is not stopping private companies from tapping into a growing market for solar energy.

The jury is still out as to whether the sun can compete long term with traditional energy sources, but some industry players say solar energy has good potential — even though the government largely ignores renewable energy sources and Russia's economy is firmly based on the petrodollar.

Then there's the issue of a lack of sun.

"Russia has been considered as a northern country for a long time. ... There was an opinion that it's better to use solar energy in countries where there's a lot of sun," said Marat Zaks, chief executive of Solar Wind, a Krasnodar-based solar panel manufacturer.

"But the fact is that there's a lot of sun in Russia as well. Germany is the world's No. 1 solar

energy consumer. But is Germany a sunny country?" he said.

Solar Wind produces panels mostly for export but wants to see the domestic market grow.

"If we get an order from a Russian customer, we try to complete it quickly to aid the market development in the country," Zaks said.

A number of Russian private companies are creating joint ventures with Rusnano, the state technology corporation, to address local needs.

Solar Wind is starting a 4.8 billion ruble ($160 million) project, with Rusnano as a partner, in which it will make double-sided solar panels for domestic use. These are panels that collect solar energy from both sides. Zaks said there are only a few companies in the world making such panels.

The plant, which may start working at the end of this year or in the first quarter of 2011, will have an annual manufacturing capacity of 30 megawatts at the start, and will eventually ramp up to 120 megawatts per year.

The volume of Solar Wind's domestic sales is still much smaller compared with exports, Zaks said, though he declined to name the percent. He said private firms and regional governments are his customers locally, and the company exports solar panels to more than 22 countries, including Germany, Britain and the United States.

Industry insiders said solar energy could become a real alternative for traditional energy sources in a number of the country's regions.

"The Krasnodar region and most parts of Siberia have insolation levels [average exposure to the sun's rays] comparable to the south of France and central Italy, where solar energy is currently booming, while the Zabaikalsky region gets more solar energy than Spain," said Vasily Malakha, head of the environment monitoring department at the Electricity and Energy Council of the Commonwealth of Independent States.

Malakha said the daily insolation per square meter in Krasnodar is 4 kilowatts per hour to 4.5 kilowatts per hour.

Russia is, however, behind Japan, the United States and Europe in promoting renewable energy. Many governments have support and incentive programs. Several states and countries have mandated that their power companies reach specific thresholds for share of power from renewable sources.

But Yevgeny Nadezhdin, executive director of UNESCO's Sustainable Energy Development Center, said construction of solar power stations in Russia's midland would make no sense because of the lack of sunshine. He said that using solar energy might be suitable for Sochi or the Caucasus republics, "where there are enough sunny days."

The Krasnodar region started paying attention to solar energy after it launched an energy-efficiency target program in 2006. A total of 7,000 square meters of solar panels have been deployed in Krasnodar since then, according to the regional government's web site.

The region is using solar panels not only for electricity production, but also for heating water. The roof of the central hospital in Ust-Labinsk, a town 60 kilometers northeast of Krasnodar, is being covered by 300 solar panels.⊠ The installation, whose total area is 600 square meters, will heat water for the hospital's daily needs year-round, said Alexander Kiselyov, deputy chief doctor of the hospital, adding that the solar panels would heat 28 cubic meters of water every day.

⊠"The efficiency of this system is likely to be minor in winter, because it's cold, but the water will be hot anyway. ... We need water day and night," he said by telephone from Ust-Labinsk.⊠ Kiselyov said the hospital's administration was happy to get an additional energy source, which will save 1.5 million rubles per year.

A request last week for additional information from the energy department of the Krasnodar region administration went unanswered.

At least one billionaire intends to cash in on solar energy's potential. Viktor Vekselberg's Renova group has a joint venture with Rusnano to build a solar panel factory in Chuvashia. Vekselberg highlighted the project in a meeting with Prime Minister Vladimir Putin late last month.

"Today full-scale construction of the enterprise is under way," Vekselberg said at the meeting.

He said the plant, which will use thin-film technology, would reach its full production capacity in 2012.

"It is the first such enterprise in Russia. There are no analogs," he said, according to the government's web site.

Rusnano holds a 49 percent stake in the 20 billion ruble project, while Renova owns 51 percent.⊠ Launching the venture based on technologies from Swiss conglomerate Oelikon, which is partly owned by Renova, "will allow for the creation of a base for developing the sector of alternative solar energy in our country," Vekselberg told the prime minister, adding that Renova might also start construction of Russia's first solar power stations in 2012.

⊠The company is looking for an appropriate area for such a project, with the south of Russia being the most attractive, Vekselberg said.⊠ The sun is one of the world's most promising energy sources: The amount of electricity produced by solar power stations worldwide, which now stands at just 2 gigawatts a year, may reach 150 gigawatts a year by 2030, Malakha of the CIS's Electricity and Energy Council said, citing the European Commission's forecast.⊠ The overall capacity of solar electric power stations that Russia plans to set up by 2020 is 150 megawatts, he said.

Solar energy use has a future in Russia, but this kind of energy should be used only in combination with other renewable energy sources, said Brigitte Schmidt, a board member of Eurosolar Deutschland, the German division of the European Association for Renewable Energy. Solar energy has not become popular in Russia because of its focus on oil exports, she said by telephone from Germany.

Another obstacle is the high cost of solar power station construction, compared with traditional power stations, experts said.

The construction cost of a solar power station ranges from $10,000 to $17,000 per one kilowatt of installed capacity, Malakha said. In comparison, a kilowatt of installed capacity at a nuclear power station costs up to $3,000 while the figure for a hydroelectric power station is just $1,000.

Malakha said the price for the electricity produced by solar power stations is also high — 6 rubles to 20 rubles (20 cents to 67 cents) for one kilowatt hour, depending on the region.

That makes building solar power stations less effective for Russia's economy than construction of traditional power stations, said Nadezhdin, of UNESCO's Sustainable Energy Development Center, adding that hydroelectric and biofuel energy generation are the best options for the country. Building solar electric power stations around Russia is unlikely to be economically viable over the coming 30 years, Nadezhdin said.

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