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## Russia's First Factory Making Thin-Filmed Solar Cells Under Construction in Saransk

Russia has taken a further step towards making alternative forms of energy available to ordinary consumers. Saransk, capital of Mordovia, will soon become a centre for the production of innovative solar panels, which can easily be integrated into various types of materials used to cover the roofs and even the facades of buildings. These panels can be used to make flexible tiles and soft roofing materials such as roofing felt, as well as facing tiles, which will start to generate electricity for the building's owners instead of just heating up in the sun. The RUSNANO Group is making it possible for any building to be converted into a small power station, without the need to install heavy silicon-based batteries on the roof.

The Republic of Mordovia Centre for Nanotechnology and Nanomaterials, which is part of the RUSNANO Group's investment network, the Fund for Infrastructure and Educational Programs, has entered into an agreement with its Swedish partner, Midsummer, for the supply of a production line to make integrated solar panel. This is the first order under the agreement on the development of flexible non-silicon-based photovoltaic devices in Russia and the Eurasian Economic Union, which was signed between the RUSNANO Group and Midsummer in 2019. The cost of the equipment will be within the standard range for production lines of this type—between \$3.5–5 mln.

“We are very glad that at last we have become part of the Russian market for the production of integrated solar panels. We keenly await the first shipments of Russian-made panels to the European market, as in Europe demand exceeds Midsummer's current production capacity,” **Sven Lindström**, General Director of the Swedish company, stated.

The production line equipment is being manufactured in Midsummer's factory in Järfälla, near Stockholm, and will be delivered to the Stilsan factory in Saransk towards the end of 2020. The new entity is currently preparing the production premises - an area of almost 1000 sqm on the territory of the Mordovia Technopark. All the utility supply lines are being installed from scratch and clean

rooms are being fitted out. The entity will be managed by the Republic of Mordovia Centre for Nanotechnology and Nanomaterials and Solartek, a company in the TechnoSpark Group which has been promoting solar roof solutions based on thin-filmed photovoltaic panels since 2015.

“This facility is being launched in order to meet the demand for integrated solar roofs in the commercial sector. We are offering unique products—a range of different roofing materials containing integrated solar cells. Midsummer’s technology is ideally suited for this purpose. We hope that through technology transfer and the localization of the manufacture of flexible solar cells in Saransk, we will be able to develop the solar roof business in Russia and abroad,” **Dmitry Krakhin**, director of Solartek, said. And he considers it possible that, in the future, when the green tariff system is fully operational in Russia, demand for solar roofs will grow among owners of private houses.

The Stilsan factory will produce solar panels and modules using the promising thin-film copper indium gallium selenide (CIGS) technology. The average efficiency factor is 15%, but modules will also be able to work in conditions of diffuse sunlight and in overcast weather. The planned production capacity is 10 MW a year.

The main market for the planned output will be the commercial construction and renovation segments in Russia and other countries in the Eurasian Economic Union (Armenia, Belarus, Kazakhstan and Kyrgyzstan). But entities in other countries further afield are also showing interest in promoting the solar cells and modules which the Saransk factory will produce. Interest in flexible integrated modules is growing rapidly in the global solar energy sector. The largest global producers of construction materials (polymers, glass and steel) are working hard on the development of solutions that make use of integrated photovoltaic elements.

The supply of the equipment will enable a unique technology—the production of integrated non-silicon photovoltaics—to be transferred to Russia. In the future, the Fund for Infrastructure and Educational Programs may invest in further development of the industry and in the upgrade of the acquired technology with the help of new Russian innovations in the sector.

## **The Russian Solar Energy Market**

The Russian Federation has plans to expand and diversify the use of renewable energy sources in the generation of electricity. In accordance with the

government's current plans and policy, by 2030 renewables will account for almost 5% of the country's total electricity consumption. Moreover, [according to assessments](#) conducted by the International Renewable Energy Agency (IRENA), renewables may account for more than 11% of Russia's energy mix. In order to make use of this potential it will be necessary to invest \$300 bln in the renewable energy sector by 2030.

***The Fund for Infrastructure and Educational Programs** is one of the largest institutions of developing innovative infrastructure in Russia. It was founded in 2010, on the basis of the Federal Law On Reorganization of the Russian Corporation of Nanotechnologies.*

*The objective of the Fund is financial and non-financial development of nanotechnology and other high-tech sectors of the economy by implementing nation-wide projects; building and developing innovative infrastructure; transforming further education programs by creating new trainings and educational tools, and providing institutional and informational support which facilitates introducing technological solutions and finished goods, including those in the field of end-to-end digital technologies, in the market.*

*The Chairman of the Fund's Executive Board, as the collegial management body, is the Chairman of the Executive Board of RUSNANO Management Company LLC Anatoly Chubais, and the Chief Executive Officer of the Fund is Andrey Svinarenko.*

*For more information about the Fund, visit [fiop.site](http://fiop.site).*

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***The Republic of Mordovia Centre for Nanotechnology and Nanomaterials** is a member of the investment network established by the Fund for Infrastructure and Educational Programs, which is engaged in establishing and then selling of production start-ups in material-based industries. The network-based approach to the organization of nanocentres makes it possible to concentrate developments and infrastructure in the single most appropriate location, so that it can be accessed a number of the region's ecosystems simultaneously. It specializes mainly in such areas as power electronics, lighting technology, instrument engineering and nanotechnology products for the construction industry.*

*For more information about the company, visit [cnnrm.ru](http://cnnrm.ru).*

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***Midsummer** is the leading developer and supplier of advanced solar energy solutions for production and installation of flexible thin-film solar panels. The company manufactures equipment for solar cell production, as well as building-integrated photovoltaic (BIPV) solutions.*

*Midsummer's patented technology is based on the process of rapid production of flexible thin-film solar cells using the spraying of CIGS layers.*

*The company's shares (MIDS) are traded on Nasdaq First North Stockholm.*

*Learn more about the company at [midsummer.se](http://midsummer.se)*