

PRESS RELEASE

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ENEL STARTS PRODUCTION AT 3SUN FACTORY OF CUTTING-EDGE, BIFACIAL PHOTOVOLTAIC PANELS

- *The 3SUN 2.0 innovation project starts with a new assembly line to manufacture bifacial crystalline silicon panels, and will then involve the installation of a production line for bifacial HJT (i.e. heterojunction) panels, the first model worldwide to employ this high performance technology*
- *A total investment of 100 million euros is planned. More than 80 million euros will be invested in the 3SUN factory and will be complemented by the 20 million investment in Enel Innovation Lab in Catania, whose laboratories are experimenting innovative renewable energy technologies*

Catania, March 16th, 2018 - The conversion project of Enel Green Power's 3SUN factory kicks off, a project which will make the Catania industrial facility the first worldwide and exclusive manufacturer of HJT bifacial photovoltaic panels, which are based on heterojunction technology. This technology features the junction of two different kinds of silicon, amorphous and crystalline, allowing for particularly high yields.

Antonio Cammisecra, Head of Enel's Global Renewable Energies division Enel Green Power, presented today the factory's development plan, called 3SUN 2.0, in the presence of the Enel's Chairman Patrizia Grieco and 3SUN's CEO Antonello Irace.

The technological conversion programme for the 3SUN factory, Europe's largest photovoltaic panel manufacturing facility, entails an investment of over 80 million euros, partially financed by the European research and innovation programme Horizon 2020 European Call LCE-09-2016-2017, through the Ampere project, by the Italian Ministry of Economic Development and by the Region of Sicily. The investment for the factory is complemented by the 20 million euro investment for the Enel Innovation Lab in Catania, where the company has specialised laboratories that are experimenting innovative renewable energy technologies.

*"We are especially proud of this project, which is based on technological research and innovation, two essential drivers for a company like Enel," stated Enel's Chairman **Patrizia Grieco**. "In an increasingly competitive and fast-paced global market, we count on an open-management model that is continually being enriched with new incentives and skills, thanks also to the positive interaction with the external business environment. Right here in Catania we can proudly point to the beneficial effects of following this philosophy, as shown by the excellence of the 3SUN factory and its interaction with our Innovation Lab."*

*"The launch of this new photovoltaic technology is not only a milestone for Italian technology but is also the premise for relaunching the 3SUN factory and putting the skills of its workers to good use," said **Antonio Cammisecra**, Head of Enel Green Power. "This new production line will let us strengthen our worldwide leadership in the renewables sector, while at the same time boosting the expansion of our technological hub in Catania, proudly established in Italy. We expect that this project will stimulate the sector's entire value chain in Italy, and photovoltaics in general."*



*"This facility has a long history that has always been marked by an innovative spirit," stated **Enzo Bianco**, Mayor of Catania. "This history continues and is reinforced today thanks to Enel, which will manufacture here in our city, Catania, a technology capable of competing with the market's best. The investments made will allow the plant to grow and strategically position Italy in a crucial global sector. We will beat the competition, especially from Asia, which has very low costs, by focusing on quality. This is Europe's destiny, our future and especially Sicily's future. Sicily should look ahead by relying on quality products and the intelligence of its youth."*

The contribution of the Catania facility is providing Enel Green Power with a decisive competitive advantage, as it is the only integrated renewable player that can rely on an internal factory for the manufacturing of solar panels to satisfy part of its needs in projects all over the world. The technological leap entailed by the new photovoltaic panel is significant, with efficiency rising from the 10% yield of the previous model to around 18% for the 2018-model bifacial panel, and about 20% for bifacial HJT panels from 2019 onwards. In 2018 maximum capacity will reach 360W per panel and from 2019 onwards 395W per panel, compared to the previous 140W. The use of bifacial panels allows for solar radiation to be captured even by the panel's rear surface, increasing energy output by approximately 10-15%. As a result, it is possible to install fewer panels, reducing the required footprint. Moreover, whereas prior panels could only guarantee a 25-year lifespan, the new ones are so robust that they will last more than 30 years, ensuring high performance even in extreme weather conditions.

The 3SUN 2.0 project comprises three stages: the first, starting in the second quarter of 2018, involves the installation of a new assembly line of crystalline cells to be used to manufacture bifacial panels. The assembly line will have a maximum production capacity of 80 MW per year. The second stage involves installing a new production line for HJT cells, which will be operational starting from the first quarter of 2019, and with a maximum production capacity of 110 MW per year. Finally, the third stage will double the HJT production capacity reaching 200 MW per year in the third quarter of 2019 and may eventually reach 250 MW per year upon future optimisations. The factory will operate in a continuous cycle, 24 hours a day and 365 days a year. When the technological conversion is complete, the factory's output will reach around 1,400 panels a day, for an annual total of about 500,000 panels.

Through the new investment, the Innovation Lab, which together with the 3SUN factory makes up Enel's Sicilian technological hub, will become a campus devoted to innovation and an accelerator for young entrepreneurs aimed at encouraging research in the energy sector. It will host local and national start-ups, national and international research laboratories, it will be linked to the world of innovation even through Enel's innovation hubs, becoming a crossroads of excellence in the field of innovative technologies.