

Topsil GlobalWafers receives brand new award for its green efforts

Not only does Topsil manufacture a product that is used in the technology necessary for us to succeed with the green transition. The company has also managed to expand and simultaneously reduce its own CO2 footprint to such an extent that it has now won a newly instituted award: 'The Green Gazelle'.



The production company Topsil GlobalWafers in Frederikssund, close to Copenhagen, Denmark, has been manufacturing semiconductors since 1959. It is one of only 5 companies in the world that can master the exceptionally complex technology required to produce a very special material. The product is the ultrapure Float Zone (FZ) silicon, a semiconductor material used in nearly all modern power electronics. It sits in components that make the transport, use and control of electrical power far more energy efficient. It is found in wind turbines, electric cars, production machinery, in the power grid and many other places where high voltage and strong current flow. Moreover, it is used in several other smaller niches, for example sensors for medical or military use and as a base material in quantum computers.

Although semiconductors are instrumental for the green transition, the industry itself is also relatively heavy in its environmental footprint. It is therefore extra good news for the climate that it is possible for a company like Topsil to live up to the quite strict criteria for winning the Green Gazelle. The range of candidates includes Companies that operate in CO2-heavy sectors and the list of requirements to be qualified is quite long. The growth in net revenue must be minimum 100% over the past 4 years, and at the same time the company must beat the reduction curve, which means that CO2 emissions must be reduced by a minimum of 5.25% from 2022 to 2023.

During this period, Topsil has reduced its emissions of CO2 per kg. silicon by 16% through optimizations in the production. "The efficiencies have been achieved through a long and steady effort that include investments in automation, a myriad of small continuous improvements and new economies of scale. The entire success is based on a very dedicated and competent staff," says Christian Hindrichsen, production manager at Topsil.

New large green project

Receiving the Green Gazelle does not mean that Topsil's managers now consider the goal to have been achieved in relation to CO2 reductions. Quite the contrary, "because the alternative is an environment that is not livable," remarks Hans Peder Mikkelsen, known as 'HP', who has been at the head of Topsil since 2016. The ambitions have increased year by year and during 2024, a whole new 10 MW solar park has been built on a field next to the factory on Silicon Road. By January, it will be connected to the local power grid and make Topsil more than self-sufficient with green electricity. The surplus will then contribute to that growing part of Denmark's energy mix, which is made up of renewable energy.



The realization of this large green project has been made possible by Topsil's parent company in Taiwan, GlobalWafers, whose CEO, Doris Hsu, has seen the potential in the Danish company and invested, both in the expansion of production capacity and in the solar park. GlobalWafers is part of RE100, a global initiative which aims for large international companies to have 100% of their electricity consumption covered by renewable energy sources. That goal will be reached by Topsil at the turn of the year, and it is something that all employees can be happy about, since the consumption of electricity is by far the biggest factor affecting the environment for the company. After this achievement, attention will be directed to other areas where efforts can be made.



Future hopes

At Silicon Road, there are great hopes that the green transition will gain further momentum in the future, both for the sake of the environment and because it will mean even more business. In fact, plans have already been drawn up to develop the next generation of ultrapure silicon and to expand the factory with increased capacity and more jobs, once demand hits the right level. For Topsil, green transition and growth are two sides of the same coin. HP envisions a future scenario "when, for example, more decision-makers find out that it is a good idea to build HVDC connectors between different countries, like Viking Link, so that you can export green surplus power to where the need for power is currently at, well, then they are going to

need a whole lot of Topsisil's NTD silicon to make it work properly" (NTD is neutron-irradiated silicon, developed by Topsisil and Risø in the 1970s, ed.) - "and we'll be ready to help," HP ultimately declares.

Hope is bright green, also at Topsisil, and thanks to the recognition that comes with receiving the new Green Gazelle award, the continued work for a more sustainable future will be done with a strengthened awareness that it is the right way to go.

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