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STMicroelectronics to build the world's first fully integrated silicon carbide facility in Italy

- *New high-volume 200mm silicon carbide manufacturing facility for power devices and modules, as well as test and packaging, to be built in Catania, Italy*
- *Projected 5 billion euros multi-year investment program including 2 billion euros support provided by the State of Italy in the framework of the EU Chips Act*
- *Catania Silicon Carbide Campus realizes ST's plan for fully vertically integrated SiC capabilities from R&D to manufacturing, from substrate to module, on one site, enabling automotive and industrial customers in their shift to electrification and higher energy efficiency.*

Geneva, Switzerland, May 31, 2024 – STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, announces a new high-volume 200mm silicon carbide (“SiC”) manufacturing facility for power devices and modules, as well as test and packaging, to be built in Catania, Italy. Combined with the SiC substrate manufacturing facility being readied on the same site, these facilities will form ST's Silicon Carbide Campus, realizing the Company's vision of a fully vertically integrated manufacturing facility for the mass production of SiC on one site. The creation of the new Silicon Carbide Campus is a key milestone to support customers for SiC devices across automotive, industrial and cloud infrastructure applications, as they transition to electrification and seek higher efficiency.

“The fully integrated capabilities unlocked by the Silicon Carbide Campus in Catania will contribute significantly to ST's SiC technology leadership for automotive and industrial customers through the next decades,” said Jean-Marc Chery, President and Chief Executive Officer of STMicroelectronics. *“The scale and synergies offered by this project will enable us to better innovate with high-volume manufacturing capacity, to the benefit of our European and global customers as they transition to electrification and seek more energy efficient solutions to meet their decarbonization goals.”*

The Silicon Carbide Campus will serve as the center of ST's global SiC ecosystem, integrating all steps in the production flow, including SiC substrate development, epitaxial growth processes, 200mm front-end wafer fabrication and module back-end assembly, as well as process R&D, product design, advanced R&D labs for dies, power systems and modules, and full packaging capabilities. This will achieve a first of a kind in Europe for the mass production of 200mm SiC wafers with each step of the process – substrate, epitaxy & front-end, and back-end – using 200 mm technologies for enhanced yields and performances.

The new facility is targeted to start production in 2026 and to ramp to full capacity by 2033, with up to 15,000 wafers per week at full build-out. The total investment is expected to be around five billion euros, with a support of around two billion euros provided by the State of Italy within the framework of the EU Chips Act. Sustainable practices are integral to the design, development, and operation of the Silicon Carbide Campus to ensure the responsible consumption of resources including water and power.

Additional information

Silicon Carbide (“SiC”) is a key compound material (and technology) consisting of silicon and carbon that offers several advantages over conventional silicon for power applications. The wide bandgap of SiC and its intrinsic characteristics - better thermal conductivity, higher switching speed, low dissipation - make it particularly suitable for the manufacturing of high-voltage power devices (notably above 1,200V). SiC power devices, in the form of SiC MOSFET sold as bare die and full SiC modules, are especially useful in electric vehicles, fast-charging infrastructure, renewable energies and various industrial applications including datacenters, as they offer higher electric currents and lower leakage than traditional silicon semiconductors, increasing energy efficiency. SiC chips are however more difficult and more costly to manufacture than silicon chips with many challenges to overcome in the industrialization of the manufacturing process.

ST’s leadership in SiC is the result of 25 years of focus and commitment in R&D with a large portfolio of key patents. Catania has long been an important site for innovation for ST as the home of the largest SiC R&D and manufacturing operations, successfully contributing to the development of new solutions for producing more and better SiC devices. With an established ecosystem on power electronics, including a long-term, successful collaboration between ST and the University of Catania and the CNR (Italian National Research Council), as well as a large network of suppliers, this investment will strengthen Catania’s role as a global competence center for SiC technology and for further growth opportunities.

ST currently manufactures its flagship high-volume SiC products on two 150-millimeter wafer lines in Catania (Italy) and Ang Mo Kio (Singapore). A third hub is a joint venture with Sanan Optoelectronics, with a 200-millimeter facility under construction in Chongqing (China), dedicated to ST to serve the Chinese market. ST’s wafer production facilities are supported by automotive-qualified, high-volume assembly and test operations in Bouskoura (Morocco) and Shenzhen (China). SiC substrate R&D and industrialization is undertaken in Norrköping (Sweden) and Catania, where ST’s SiC substrates manufacturing facility is ramping up production and most of ST’s SiC product R&D and design staff are based.

About STMicroelectronics

At ST, we are over 50,000 creators and makers of semiconductor technologies mastering the semiconductor supply chain with state-of-the-art manufacturing facilities. An integrated device manufacturer, we work with more than 200,000 customers and thousands of partners to design and build products, solutions, and ecosystems that address their challenges and opportunities, and the need to support a more sustainable world. Our technologies enable smarter mobility, more efficient power and energy management, and the wide-scale deployment of cloud-connected autonomous things. We are committed to achieving our goal to become carbon neutral on scope 1 and 2 and partially scope 3 by 2027. Further information can be found at www.st.com.

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