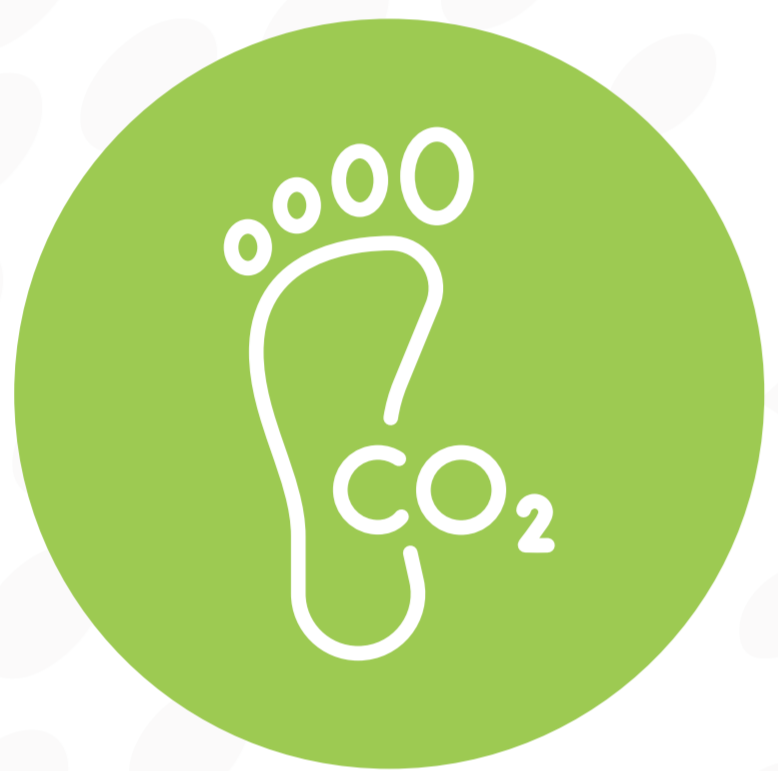


# Boosting the European Value Chain for Sustainable Power Electronics

## FASTLANE

FASTLANE speeds up the adoption of SiC-based power electronics by rolling out a competitive technology excellence by an all European SiC-based power electronics value chain, starting from powder and boule to engineered SiC substrate, and allowing and requesting novel smart semiconductor devices, smart power modules, and power converters.

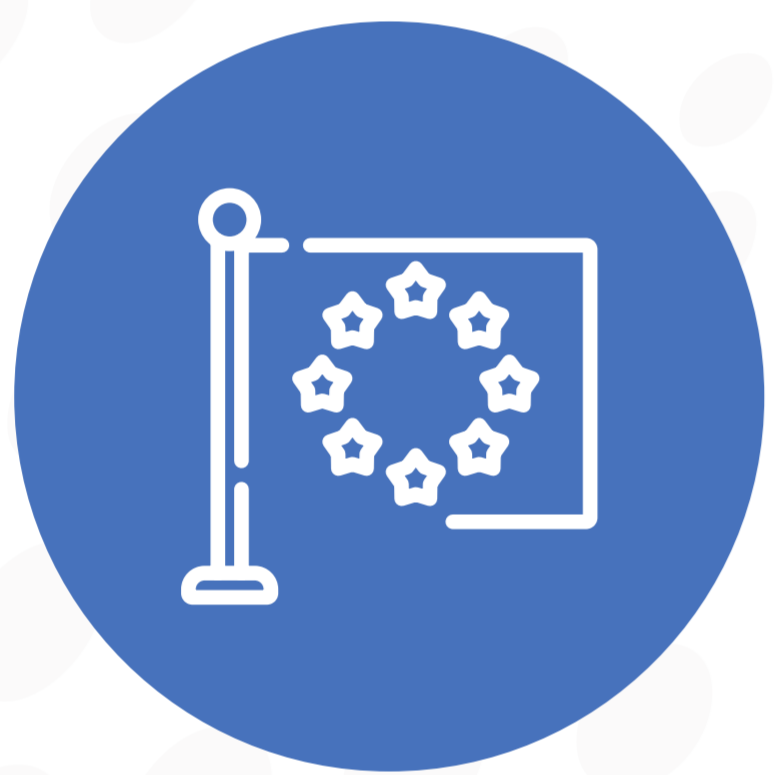
This Flagship of an all European SiC-based power electronics value chain will broaden the application domains.



### FASTLANE OBJECTIVE No. 1

#### Environmental footprint reduction

FASTLANE will demonstrate an overall environmental footprint reduction all along the product life cycle – thus contributing to the European Green Deal objective and Europe becoming the first Climate Neutral Continent by 2050.



### FASTLANE OBJECTIVE No. 2

#### Sustainable European Sovereignty in Power Electronics

FASTLANE will secure European sovereignty in SiC-based power electronics by establishing a strategic value chain, boosting the EU's market position, and diversifying components. The project aims to increase production, reduce costs, and improve characterization processes for efficient SiC-based technologies.



### FASTLANE OBJECTIVE No. 3

#### Broaden SiC functionalities

FASTLANE will broaden SiC functionalities by integrating on-die sensors to monitor the device temperature and current *in situ*, improving device, module and system protection and developing high performance high voltage solid-state circuit breaker.



### FASTLANE OBJECTIVE No. 4

#### Overcome device-related limitations

FASTLANE will overcome device-related limitations thanks to advanced packaging, improved parasitics, and fusion of in-die current measurement with a Tunnel Magneto-Resistance (TMR) current sensor.



### FASTLANE OBJECTIVE No. 5

#### Achieve cost benefits by reuse of automotive economy of scale

FASTLANE will demonstrate how cost benefits can be achieved by reusing the economy of scale of automotive power electronics for power conversion applications.



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