

„HiPower 5.0
Kickoff meeting!
A milestone in
Graz.“

Next Generation Power Electronics for electric Mobility to achieve European Green Deal Goals and strengthen Europe's Mobility Value Chain

Making transport sustainable for all is a key topic in "The European Green Deal", aiming for a climate-neutral Europe by 2050. The Green Deal seeks to transform the EU into a modern, resource-efficient, and competitive economy, recently highlighted in "The future of European competitiveness" report. The "European Chips Act" supports this transition by enhancing Europe's competitiveness and resilience in semiconductor technologies, crucial for the green transformation. The Chips Act emphasizes that success depends on turning research insights into innovative, sustainable products and services at an industrial scale. HiPower 5.0 addresses these goals by developing new power electronic solutions to meet Green Deal targets and foster a resilient, leading-edge European value chain for future mobility solutions.

HiPower 5.0 aims to develop highly integrated eDrive components for automotive and maritime sectors using advanced wide bandgap semiconductors and power electronics technologies. This includes new high-performance GaN wafer materials, 850 V monolithically integrated bidirectional and 1200 V GaN switches. Based on these devices, exemplarily new inverter and auxiliary converters for different mobility applications will be developed. The design focuses on resource efficiency and reliability to minimize CO₂ footprint and extend power electronics component lifetime. This is achieved by making use of multi-physics simulation, advanced ageing models and prognostics concepts.

The HiPower 5.0 consortium is composed along the whole value chain, from GaN wafer and chip development to automotive and maritime Tier1/OEMs. Besides, leading European universities and research organizations are involved too, consequently ensuring significant scientific and economic impact.

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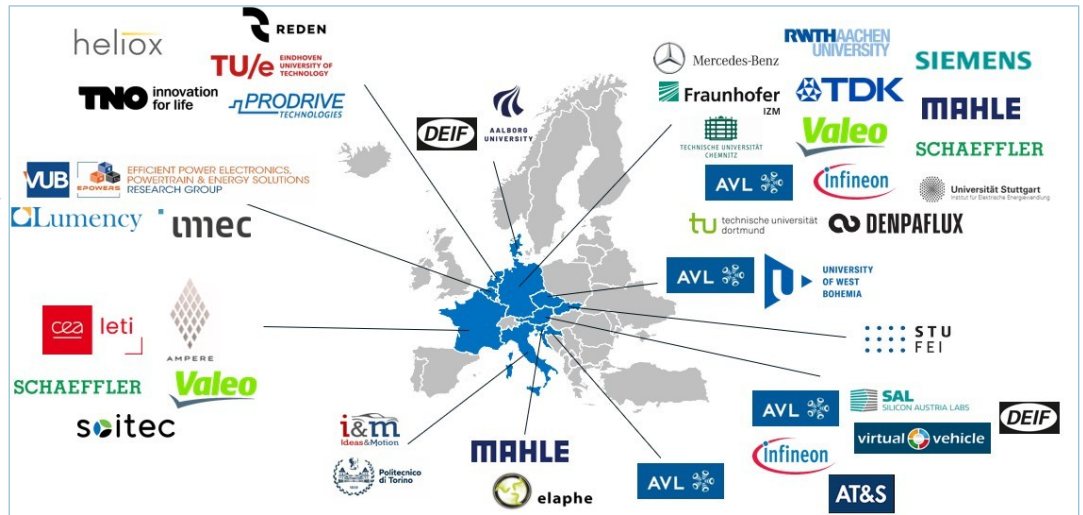
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45 partners from 11 European countries are collaborating in this three-year project, with a total budget of €58 million. The project was started on 1st of July 2025.



A Consortium ready to tackle grand Challenges for a greener, and smarter Future

- **Environmental Impact:** Advances in efficiency, resource reduction, and sustainability from HiPower 5.0 will positively impact the environment.
- **Automotive Industry Benefits:** HiPower 5.0's eDrive components will enhance performance, efficiency, reliability, and cost-effectiveness, helping the industry meet the demand for sustainable mobility and comply with strict environmental regulations.
- **Maritime Industry Benefits:** HiPower 5.0's power conversion systems will reduce emissions, fuel consumption, noise, and maintenance costs, enhancing environmental footprint, operational efficiency, and competitiveness.
- **Semiconductor Industry Benefits:** HiPower 5.0 will boost market opportunities, technological leadership, and innovation, strengthening the European value chain and fostering academia-industry collaboration.
- **Research Community Benefits:** HiPower 5.0 will generate new knowledge, methods, tools, and data, advancing the state of the art and facilitating the dissemination and exploitation of research results.
- **Societal Benefits:** HiPower 5.0 will reduce greenhouse gas emissions, fossil fuel dependence, and health risks in the transport sector, while boosting economic growth, job creation, and social inclusion.

“Generating significant environmental, societal and technological impact.”



Project Coordination

Dr. Christoph Abart | AVL List GmbH | christoph.abart@avl.com
www.hipower50.eu



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