

**Project Title:** Asynchronous Microgrid Power Conditioning System

**Objectives:** To design, develop, validate and optimize the Asynchronous Medium Voltage Grid Connector. Full scale hardware, including the three-level Neutral Point Clamped (NPC) based Front End Converters (FECs) and Dual Active Bridge (DAB), will be built and tested at grid connected full load conditions.

**Major Milestones:** Demonstration of medium voltage bidirectional isolated DC-DC converter enabled by series connection of 10kV SiC MOSFETs

**Deliverables:** Fully functional isolated DC-DC converter



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### WBG Technology Impact

- Enables SiC based Medium Voltage converters which are highly efficient compared to Si based converters
- Increases reliability of these high power density converters
- Market segments impacted: High Power density PCS connectors, DC-DC tap.
- Time frame for commercialization: 3 years

### More WBG Impact and Additional impacts

- Reduction in the weight and volume of Si based MV conditioning system using gears for compressor applications
- With large scale production, the cost will come down since the electricity saving is significant
- Potential for Job Creation, Economic impact
- Workforce Development and Education