

1700 V GaN – Will it Replace SiC in > 1 KV Applications?
Balu Balakrishnan, Chairman and CEO, Power Integrations, Inc.

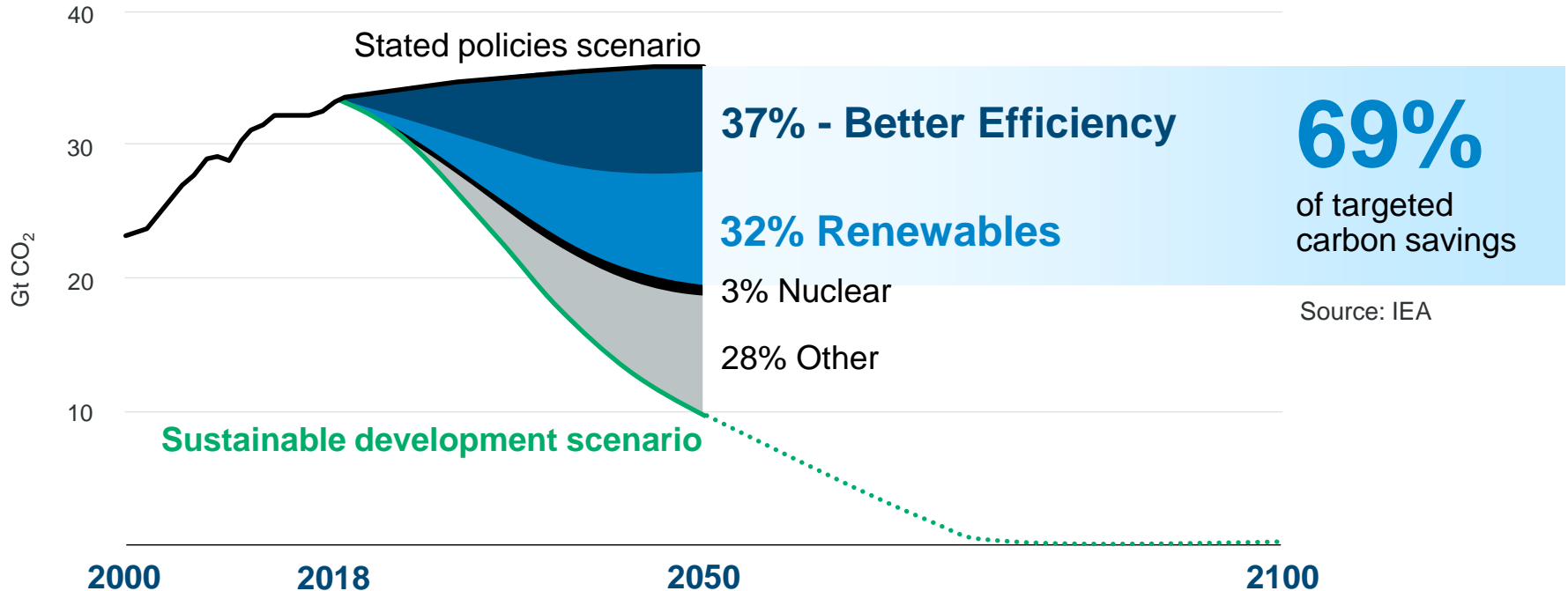
**Bodo's
Wide Bandgap
Event 2024**

Making WBG Designs Happen

GaN

Power Semiconductors are Critical to a Lower-Carbon Future

Efficiency and renewables hold the key to achieving carbon-reduction targets



Higher Voltage Capability Extends GaN's Efficiency Benefits from Consumer to Industrial Applications



No heatsinks

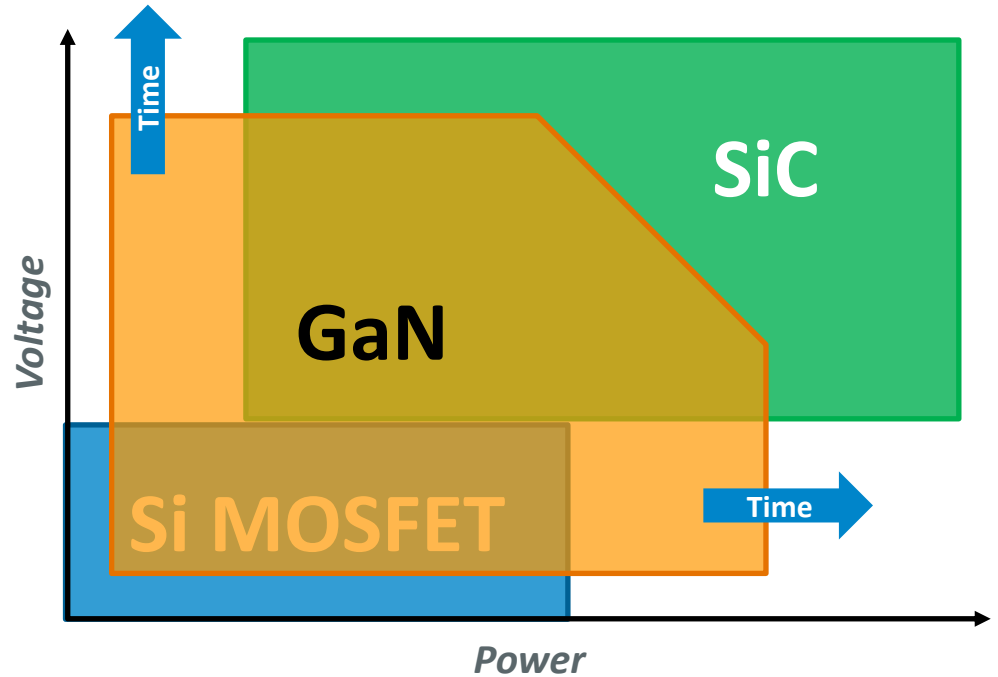


Fully sealed
enclosures

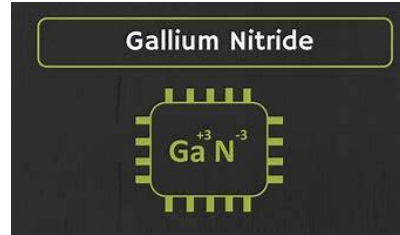


High Voltage GaN vs. Si and SiC

- GaN is close to reaching cost parity with Silicon except at very low power
 - ▶ Low power GaN die too small to assemble!
- Latest 750V GaN technology can cost effectively replace SiC & Si up to 10s of kW
- GaN can also cost effectively replace SiC at 1200 and 1700V up to several 100Ws
- SiC is several years ahead of GaN in addressing 100s of kW
- Further advances in GaN technology is needed to address 100s of kW cost effectively against SiC
- GaN-inherently more cost effective than SiC
 - ▶ Due to lower material and processing costs



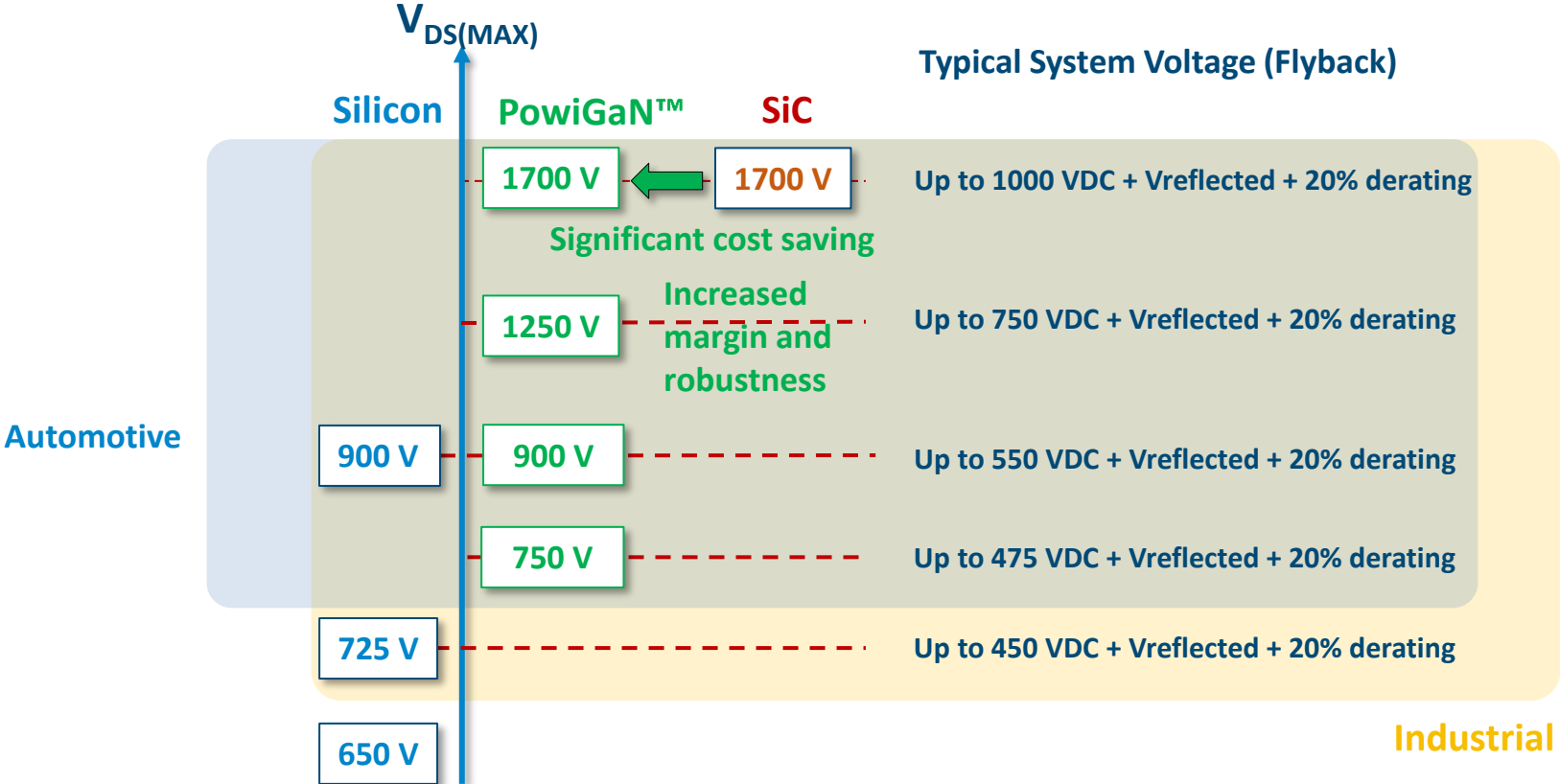
GaN Is Fundamentally More Sustainable Than SiC



GaN requires substantially less energy to produce than SiC

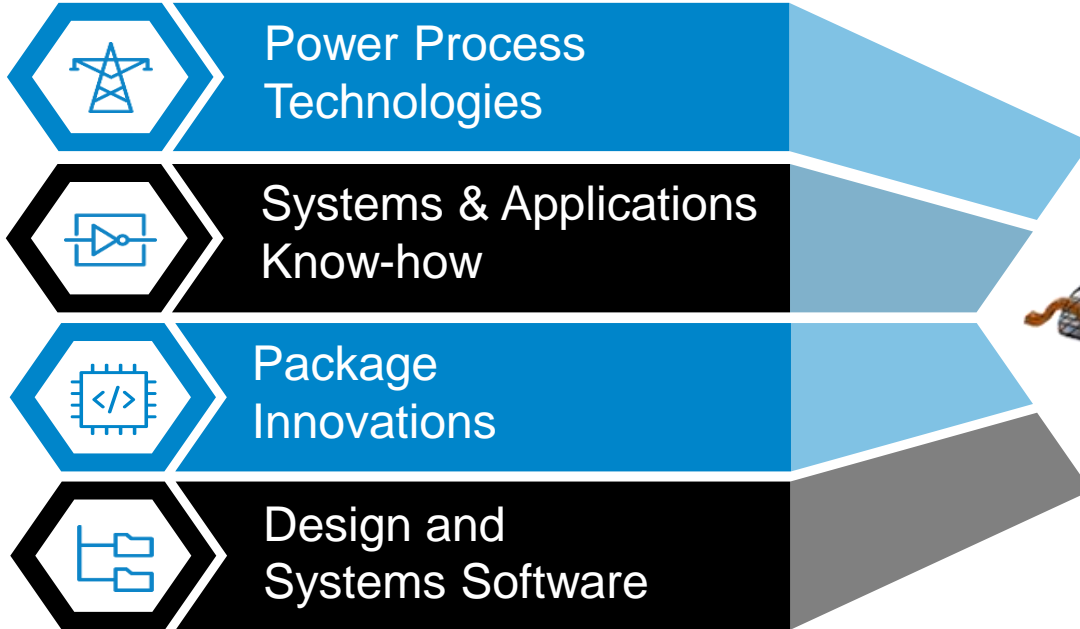
Source and quantity of upstream energy use are crucial

2024 HV Switch Options for Power Conversion

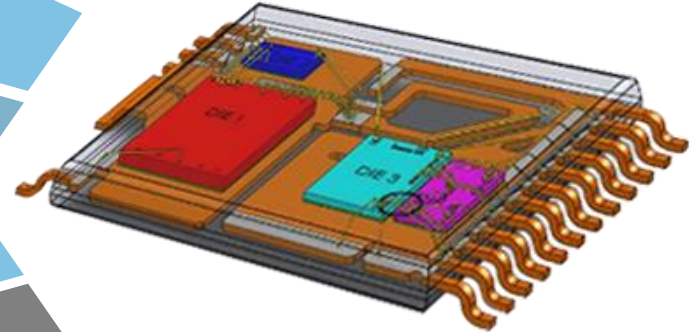


Success Comes From System-Level Innovation

Switch Technology Is Not Enough

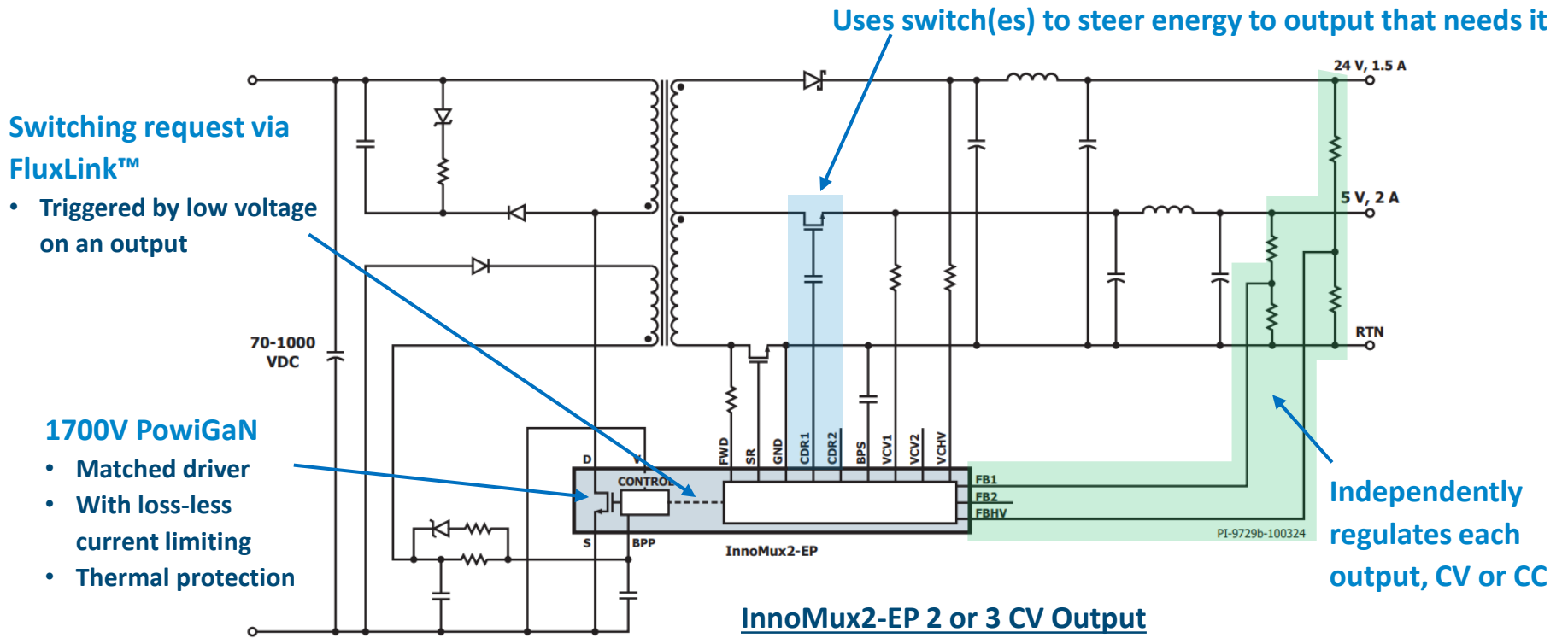


Power System
in a Package



Just Released: 1700 V InnoMux-2

Incorporates all of PI's Multi-Disciplinary Innovations



The Best HV Switch Technology vs. Power

