

Video Update

Global Semiconductor Sector

Automotive semis: Powering the EV megatrend (Video Update)

- *In this Credit Suisse Global Sector Thematic Research report, our Technology team builds on the work of our Automotive colleagues to examine the fast-changing landscape of auto electrification around the world. We focus on the rival IGBT and SiC technologies powering the EV revolution and look across the entire supply chain to identify potential stock opportunities.*
- **We forecast semiconductor content per car more than doubling by 2030, driven by xEV adoption.** Our detailed analysis suggests the adoption of battery-electric and hybrid-electric vehicles (xEV) will rise from 11% (8mn xEV units) in 2020 to 62% by 2030 (63mn xEV units, including 29mn battery-electric vehicles). Given a typical battery-electric car has twice as much semi content at \$800 as a gasoline-fuelled car, with ~75% of incremental content coming from Power, we believe that average semi content can grow from ~\$510 in 2020 to \$1,100 by 2030, driving industry revenues from \$38bn currently to \$110bn over the next decade (11% CAGR).
- **Introducing our xEV Power Semis model – 25% CAGR until 2030; Powertrain and BMS key beneficiaries.** Our model looks at xEV penetration by type across regions, and by power content and technology (insulated-gate bipolar transistor (IGBT) versus the newer silicon carbide or SiC modules) within each xEV type to assess the total addressable market for xEV Power Semis. We estimate this market to grow from \$2.4bn in 2020 to \$22bn by 2030 (25% CAGR), with the bulk of growth driven by three product areas – Powertrain, On-Board Chargers (OBC) and Battery Management System (BMS).
- **SiC now gaining momentum as more OEMs follow Tesla.** SiC is on track to become the technology of choice in the xEV power market due to its better performance (5-10% higher efficiency, 3-5x size reduction, 50% lower weight) over IGBT, leading to Hyundai, Nio, BYD and Lucid following Tesla. We see the SiC power market growing from \$0.7bn (of which \$0.3bn Auto) in 2020 to \$4.0bn (of which \$2.9bn Auto) by 2025 (42% CAGR). Wolfspeed (Not Covered) has a c15% and c60% share of the SiC chip and wafer markets.
- **10 key Outperform-rated stocks for the EV revolution.** Within our global coverage, we highlight: i) SiC – **STM** and **IFX** in Europe and **Rohm** in Japan; ii) BMS in the US – **ADI** and **NXPI**; and iii) Asia supply chain (assembly and packaging) – **Amkor** and **ASM Pacific**. Elsewhere, we view **Allegro**, **TXN** and **Microchip** as beneficiaries.

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Figure 1:



Source: Credit Suisse

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