Online Media Briefing with Dr. Peter Wawer

Market development for energy transition triggers renaming of Infineon's IPC Division

3 April 2023


↓ OUR
PURPOSE → We empower a world of unlimited GREEN energy


GIP
Green Industrial Power

The new name for the Division demonstrates our transformation

Emphasizes our contribution to the **energy transition**

Sets a mark for the **paradigm shift** towards rapid growth and highly dynamic applications

Fosters **pride** and engages **external stakeholders**

The demand for green energy is rising

Global energy-related CO2 emissions increased **by 0.9%**, or 321 million metric tons, **in 2022**, reaching a new high of more than **36.8 Gt**.

Increased use of clean energy technologies such as **renewables**, **electric vehicles** and **heat pumps** helped **avoid an additional 550 million tons of CO2 emissions**.

90% of global electricity generation growth last year was met by **renewables**.

USA and **EU** target to become carbon neutral by **2050**, **China** by **2060** (peak emissions 2030)

Source: IEA

The transition to non-fossil energy sources is accelerating

Renewable energy are key to reducing carbon emissions

fluctuating availability of energy sources must be supported by battery storage systems

Energy storage options using hydrogen as a storage medium are becoming more important

Today, renewable energy sources account for about 12% of the world's energy supply

clean electrical energy from renewables on the one hand and **efficiency improvements** in **generation**, **transmission** and **consumption** on the other are key to limiting and reducing demand for fossil fuels

PV will become the **primary source of energy** globally by ~**2025** (according to IEA)

Infineon is the key enabler for Power Systems that are needed at every step of the entire power transformation chain

Renewable energy generation

#1 semi enabler

powering ~50% of currently installed wind/solar capacity

Energy infrastructure

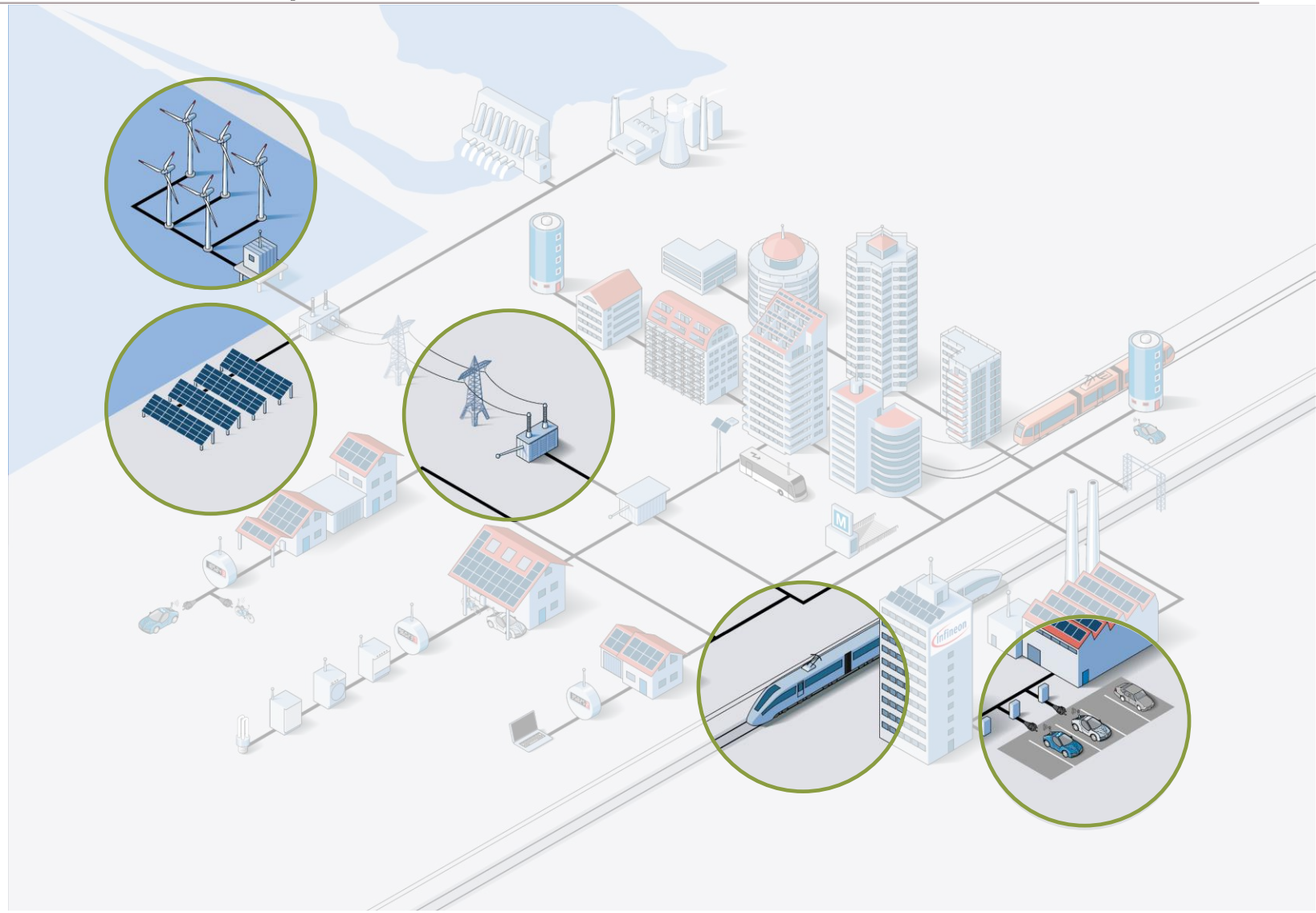
#1 semi enabler

for ~2/3 of grid infrastructure incl. EV charging

Energy conversion and usage

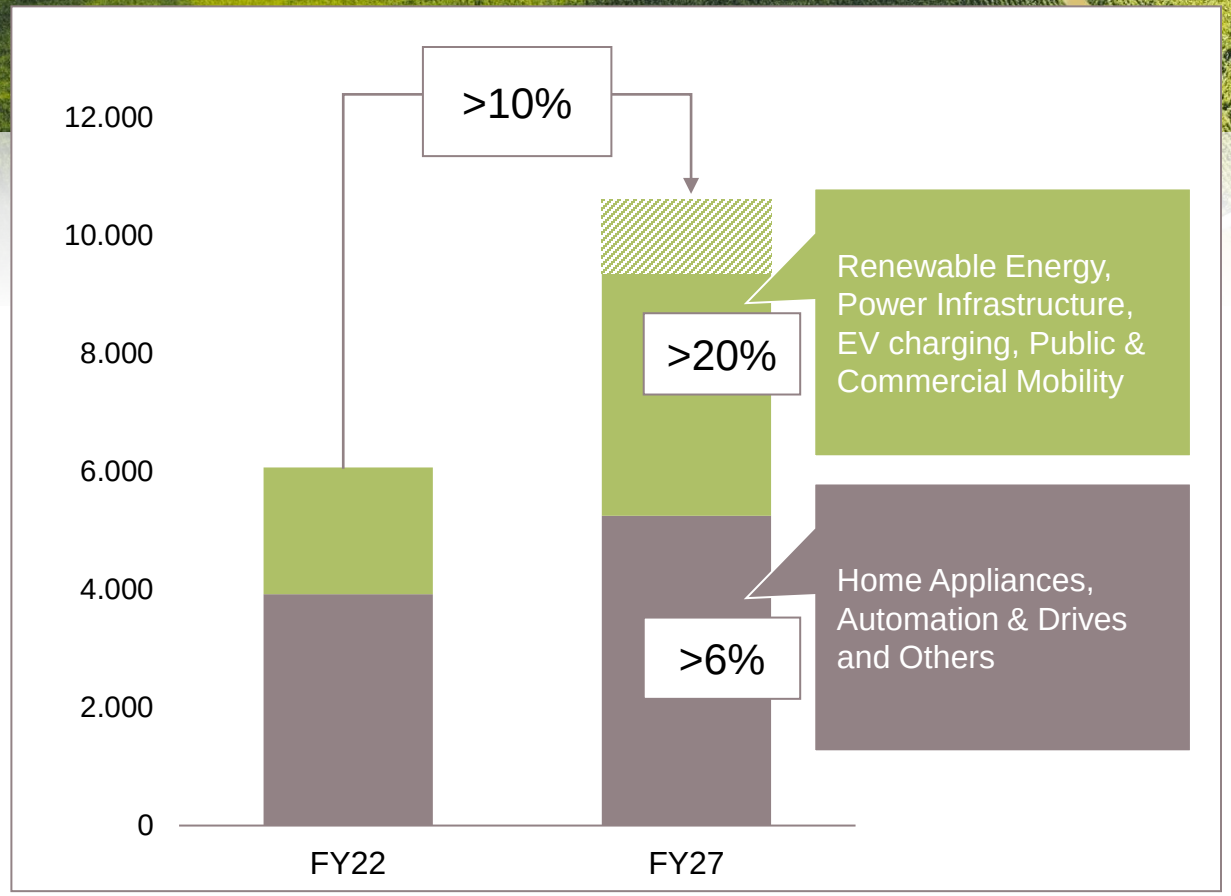
#1 semi enabler

broadest portfolio covering all verticals
leader in power density and efficiency
#1 in vehicle electrification



Based on or includes research from Omdia: *Power Discrete and Module Market Tracker – 2021*. September 2022. Infineon market model.

IPC markets accelerate growth – Enabling green energy and driving decarbonization



Source: Infineon analysis x% CAGR FY22–27e

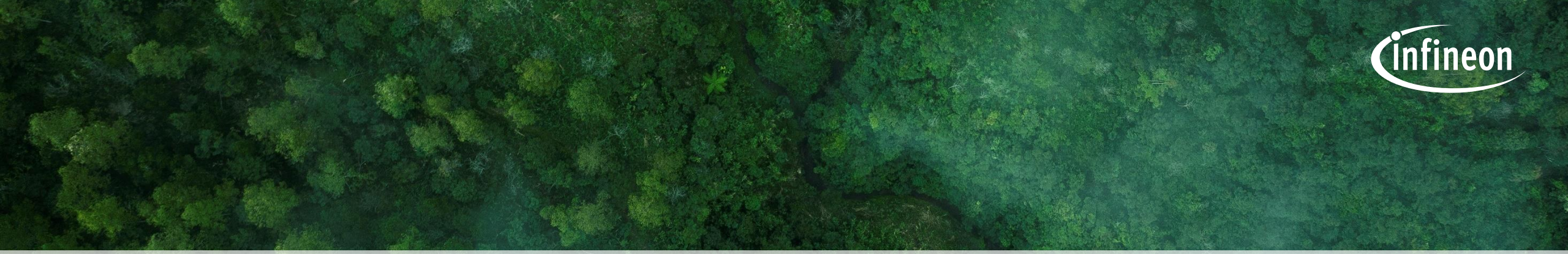
Key facts

MORE Growth

MORE SiC

MORE Profitability

- The **acceleration of the energy transition** drives IPC markets
- **SiC penetration accelerates**
- **SiC** is a key point of **differentiation** and drives IPC **profitability**



Huge potential

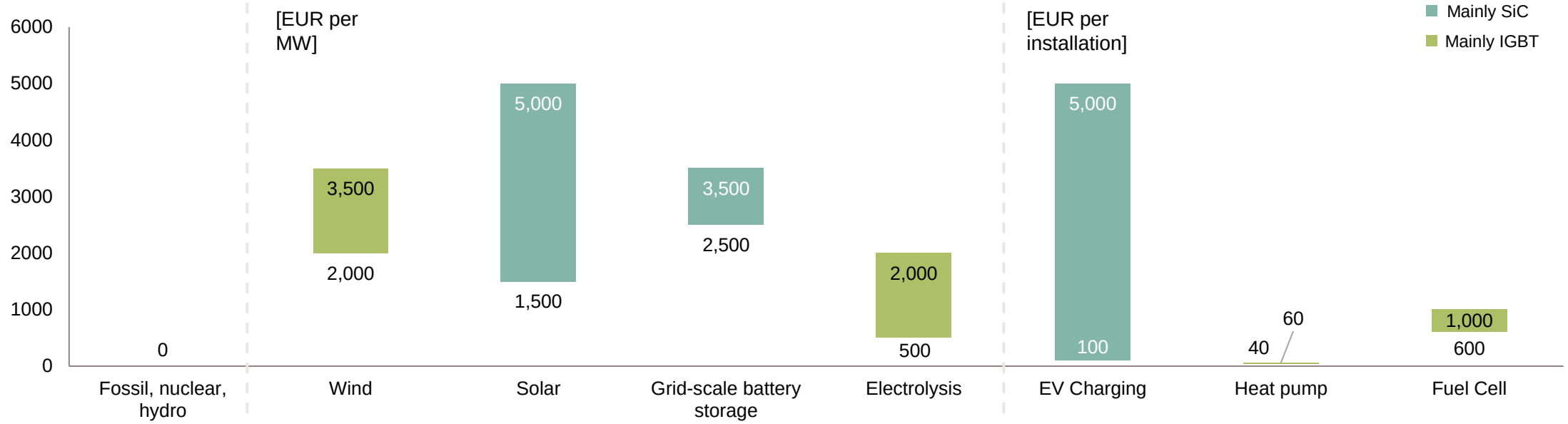
along entire green energy chain until 2030 according to **IEA Net Zero scenario**

Generation		Infrastructure		Consumption	
Photovoltaic	**+4,200 GW**	Grid network	**$600bn annual investments**	Heat pump	**+420m units**
Wind power	**+2,400 GW**	Grid storage	**+660 GW**	H_2 Fuel Cell*	**+200k FC EV +200k FC Trucks**
		EV Charging	**+32m chargers**	eAviation | eMarine **?**	
		Electrolysis	**+720 GW (pipeline: 240 GW)**		

Note: Based on Net Zero Scenario (IEA)
Source: IEA, *Internal Analysis

Green energy generation provides large business opportunities

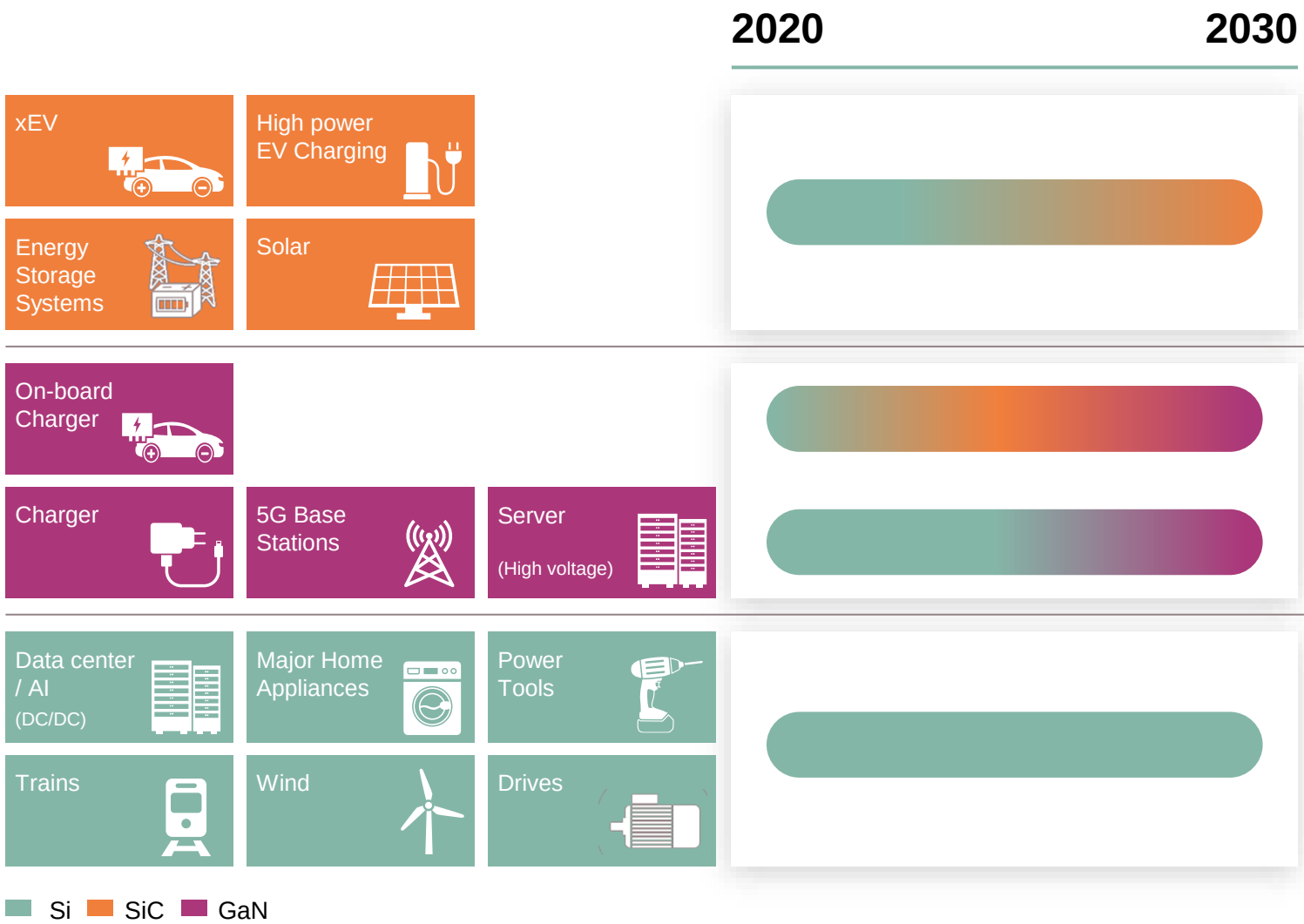
Power semiconductor content by application



Additions in 2021[1]	94 [GW]	150 [GW]	6 [GW]	<1 [GW]	<1m [inst.]	20m [inst.]	5k [inst.]
CAGR 2022 – 30	19%	22%	50%	77%[2]	33%	16%	42%

1 IEA: Net Zero by 2050 – A Roadmap for the Global Energy Sector. May 2021; Sector Tracking reports September 2022; internal Analysis | **2** Based on 240 GW pipeline, >100% based on NZE requirements

Transition to WBG will vastly differ by application with Si expected to remain technology of choice for many of them

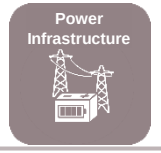


SiC
with advantage in **high power** switching performance and **power density**

GaN
superior switching performance results in **higher efficiency** and **lower system cost**

Si
is 3-4 times **cheaper than WBG**, will remain competitive in many applications where top performance and form factor are secondary

GIP market outlook remains positive in 2023 with strong demand in decarbonization related applications

Applications (% of FY22 segment revenue)		Market Outlook for CY23
	~35%	› Analysts expect market pullback in 2H/2023 due to decline in demand, but no contraction due to ongoing energy transition and energy efficiency trends › Customers see still strong demand overall, for China demand seems to slow down (increased stock levels)
	~26%	› Growth rates remain strong for global PV installations (24% YoY); demand for green hydrogen boost outlook › For wind growth rates expected to be softer than for PV (12% YoY), project push outs in Europe into 2024/2025 impair growth in 2023,
	~10%	› Growth in EV charging infrastructure is expected to remain strong supported by government push programs › Further growth of ESS (34% YoY) and T&D required to capture renewable energy generated
	~17%	› Overall market is weak, semiconductor demand more stable in areas linked to progressing inverterization › Residential AirCon demand slowed down, China government measures expected to induce stabilization in 2H 2023; heat pump demand remains strong
	~5%	› Strong growth opportunities for CAV and OBC (electrification) › Traction: growth for locomotives & metro to stay flat, demand for high-speed trains still weak, but slightly ramps
	~7%	› Long-term positive outlook driven by general trend of electrification in emerging applications (e.g. eAviation, eMarine)

indicates future outlook; downward/ upward change to previous outlook

Dr. Peter Wawer, Division President Green Industrial Power

Dr. Peter Wawer
was born in Berlin, Germany, in 1967.
He holds a Diploma in Electrical Engineering from the Technical University in Berlin where he also received his PhD.

He joined Infineon (Siemens AG until 1999) in 1997.

1997 – 2008
Various positions at Infineon

2008 – 2011
Senior VP Technology at Q-Cells SE

2011
Senior VP Technology and Production at Q-Cells SE in Bitterfeld, Germany

2012
Member of the Management Board of the Power & Sensor Division (Power Management & Multimarket Division at that time)

Since 2016
Division President Green Industrial Power

Part of your life. Part of tomorrow.