



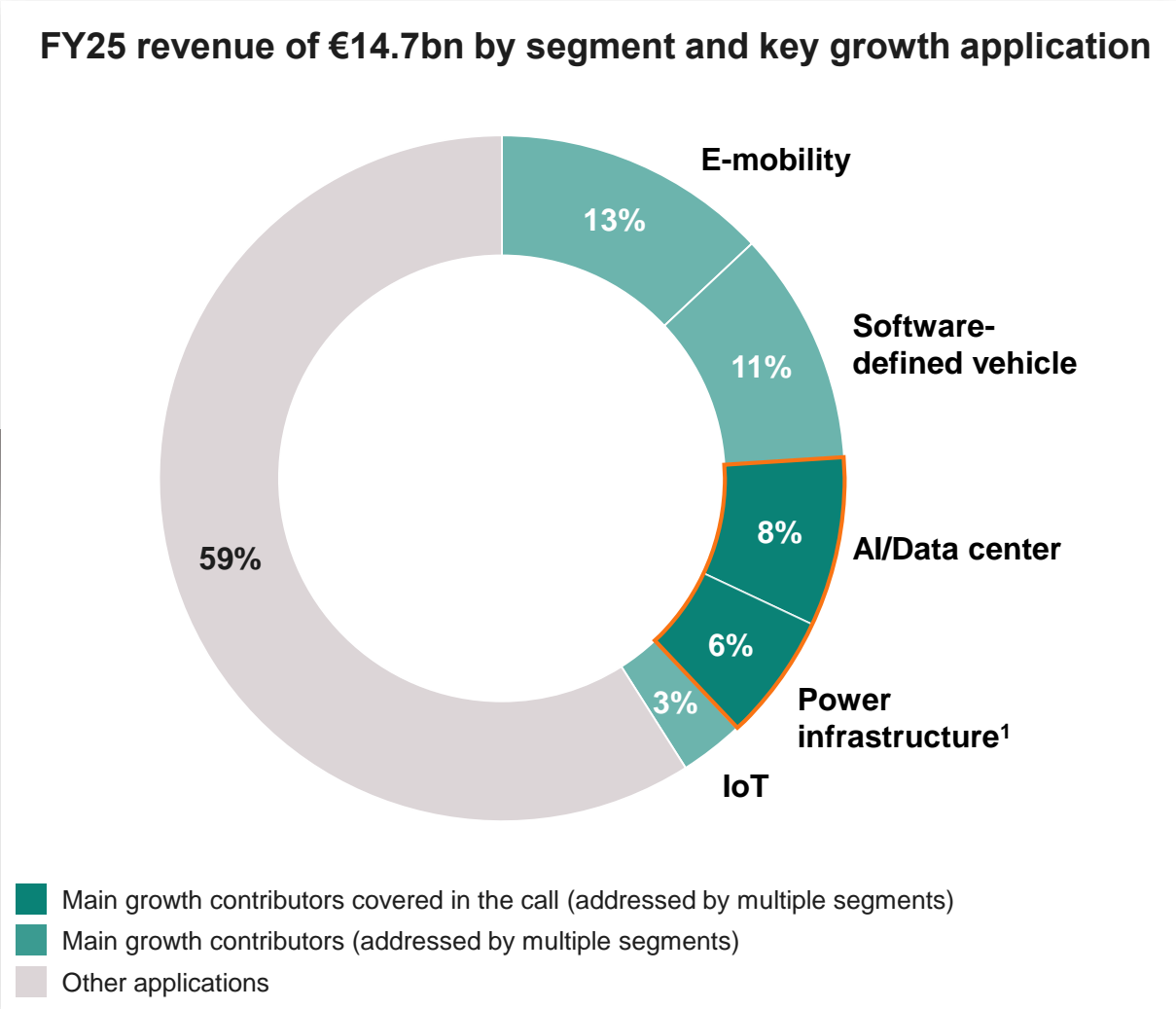
# We Power AI

## Divisional update call

**Peter Wawer** (GIP Division President), **Adam White** (PSS Division President)  
London, 26 - 27 November 2025



# Agenda and speakers



<sup>1</sup> Power infrastructure = Renewables + Grid infrastructure (e.g. transmission, distribution, storage...)

## Speakers

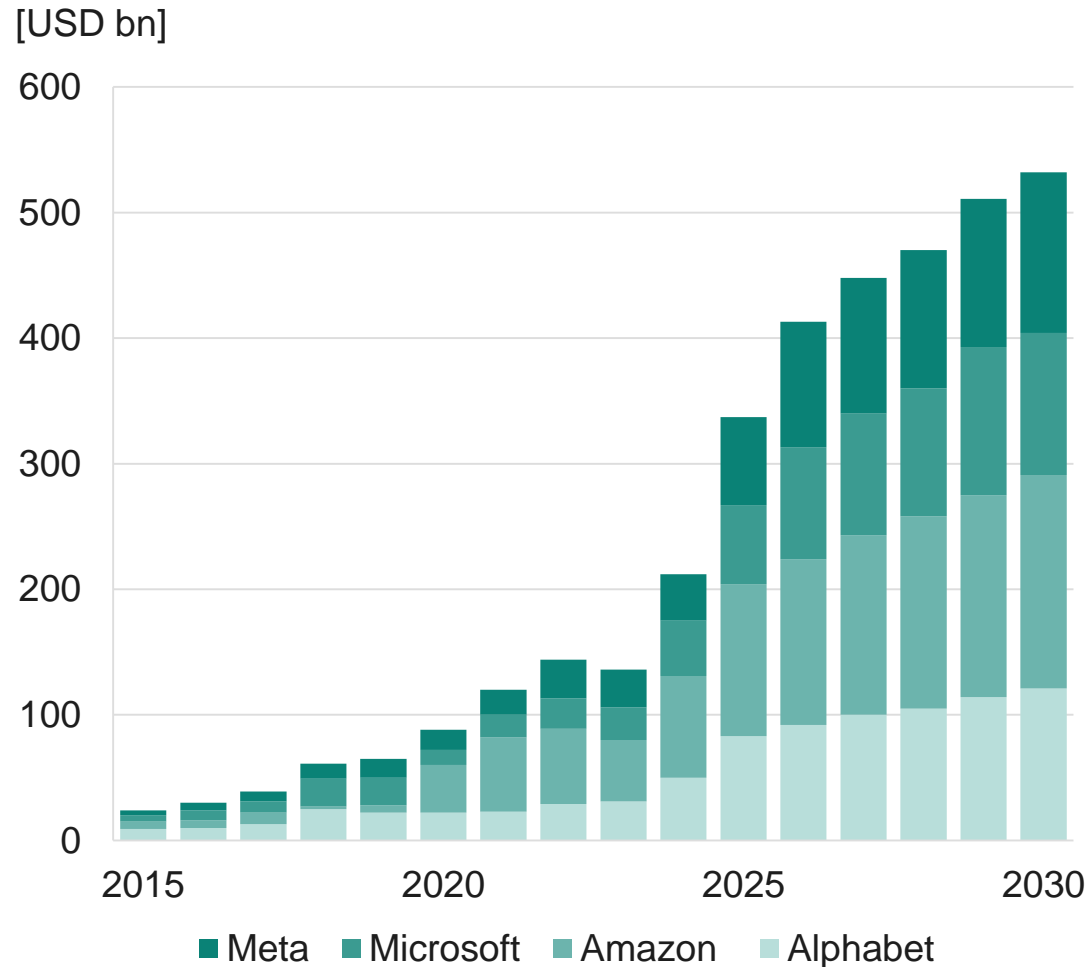


**Dr. Peter Wawer**  
Division President GIP



**Adam White**  
Division President PSS

# Massive AI infrastructure build-outs trigger multi-year CAPEX expansion



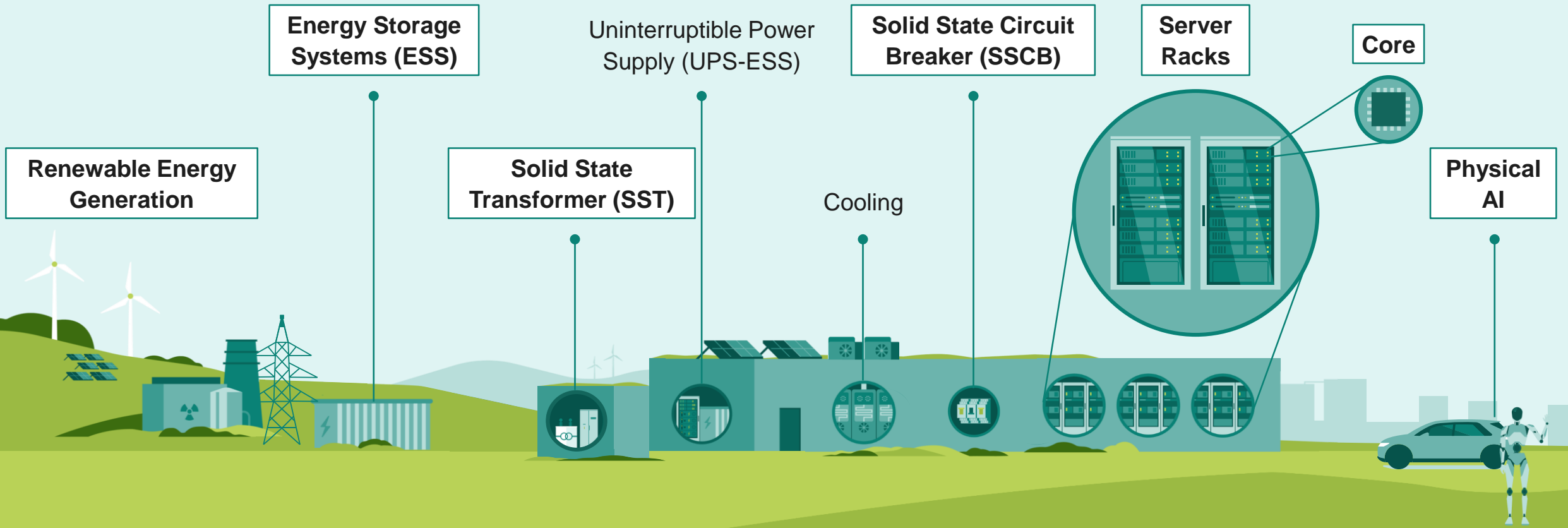
Financial Times. (2025, August). Big Tech lines up over \$300bn in AI spending for 2025. Financial Times.

In **FY25**, our AI server business achieved **>€700m** nearly **tripling** vs. FY24

We expect to **more than double** our revenue to **~ €1.5bn** in **FY26**

**Addressable market** for us in the range of **€8bn to €12bn** by end of decade

# Infineon products are essential for AI power supply and secure operation of data centers – from grid to core and beyond



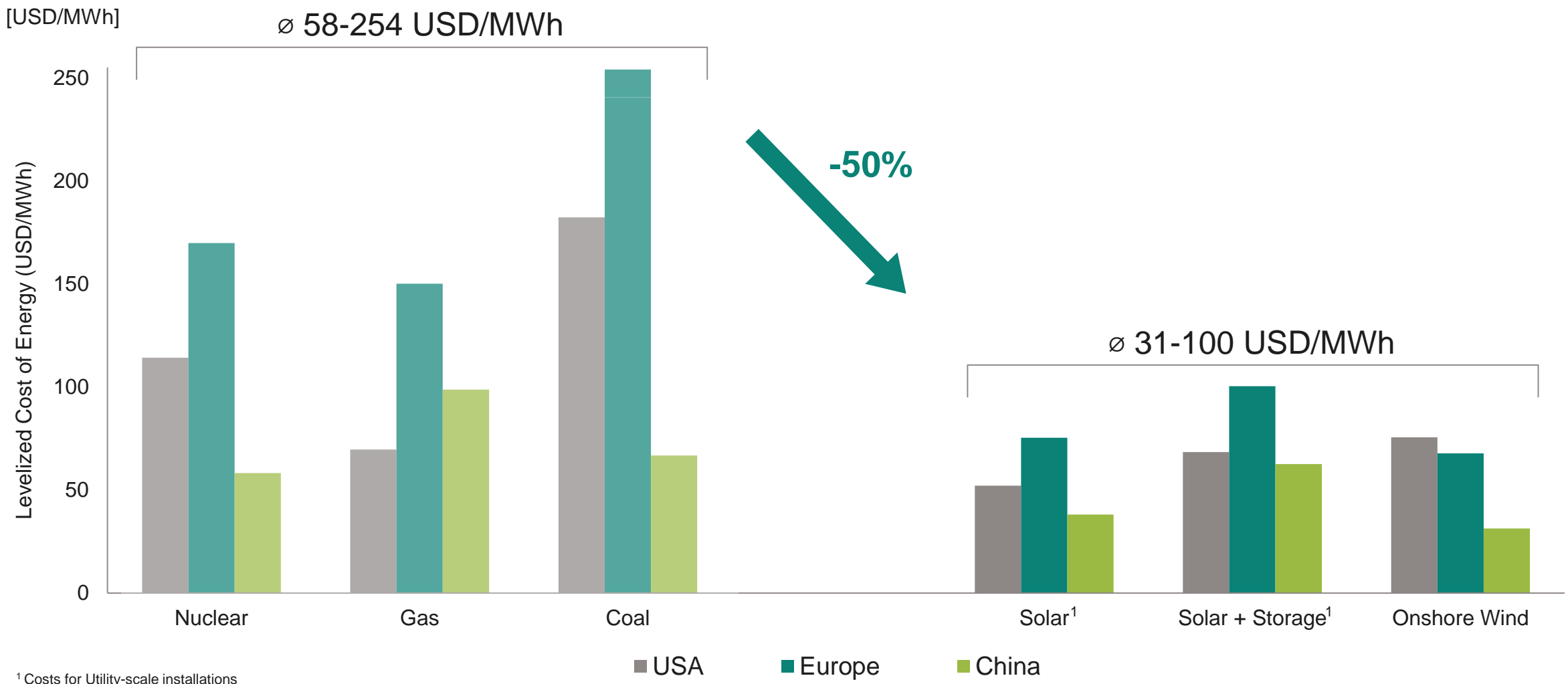
# Renewables are on average the cheapest source of energy

Grid

Rack

Core

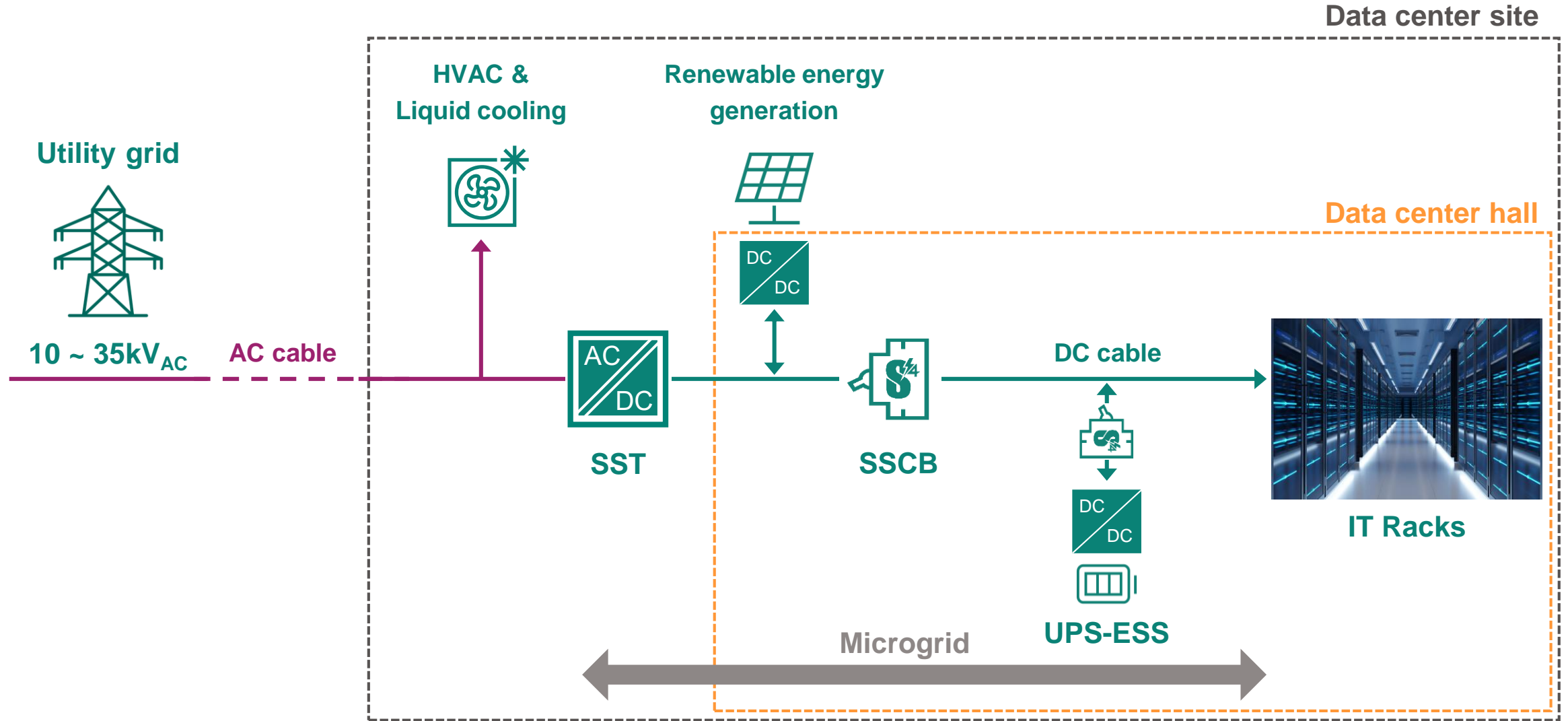
Physical AI



<sup>1</sup> Costs for Utility-scale installations  
Based on Wood Mackenzie LCOE Levelized Cost Of Energy dataset, 2024

# With introduction of DC microgrids, new applications such as SST, SSCB and UPS-ESS are gaining importance

- Grid
- Rack
- Core
- Physical AI



# ESS: Commercial and Utility Storage Solutions with strong growth potential

Grid  
Rack  
Core  
Physical AI

## Infineon's semiconductor content for energy storage solutions (ESS)

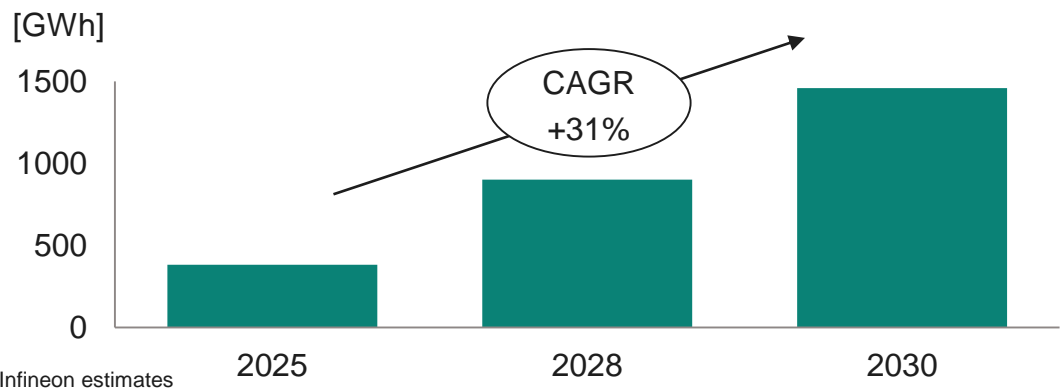
- |                                   |   |
|-----------------------------------|---|
| <b>power</b>                      | <ul style="list-style-type: none"> <li>- IGBT discretos</li> <li>- SiC MOSFETs</li> <li>- Low &amp; medium power modules</li> <li>- High-power modules</li> </ul> |
| <b>control &amp; connectivity</b> | <ul style="list-style-type: none"> <li>- MCUs</li> <li>- Connectivity chips</li> </ul>  |
| <b>analog &amp; sensors</b>       | <ul style="list-style-type: none"> <li>- Gate drivers</li> <li>- Current sensors</li> </ul>   |



**>€2.000 per MW**



### Global ESS battery shipment forecast



### Close engagement with key players

- ESS inverter companies
- System integrators
- Battery OEMs



# Solid-State-Transformers: new application for semiconductors with significant additional market potential

- Grid
- Rack
- Core
- Physical AI

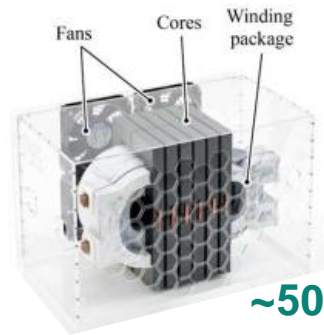
## Conventional Transformer



~20t

Conventional transformer market  
>USD 15bn

## Solid-State-Transformer (SST)



~500kg



~40x lighter<sup>1</sup>  
~14x smaller<sup>1</sup>  
~50% faster construction time



EasyPACK™



Infineon expects that **SST will replace a portion of the market**, specifically small power transformer with an expected market of **>USD 1bn in 2030**

Early involvement with leading electronics companies and hyperscalers on architecture & design in Europe, Americas and Asia, e.g:



<sup>1</sup> Comparison refers to multi modular inverter (dual stage with HFT) based on own estimations.

# Solid-State Circuit Breakers: increased safety, energy efficiency and reliability in power distribution

Grid

Rack

Core

Physical AI

## Analog circuit breaker

Traditional electromechanical analog circuit breakers protect electrical circuits against overloads and short circuits



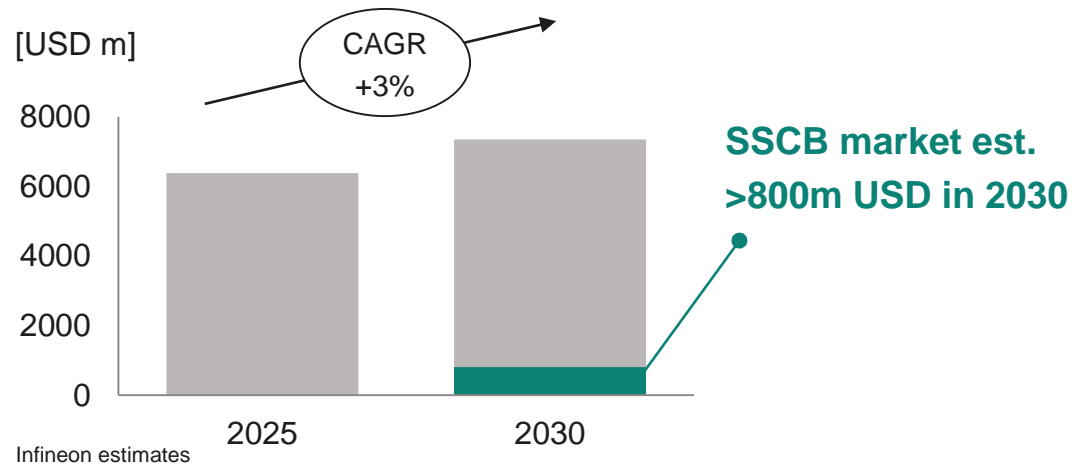
## Digital solid-state circuit breaker

Enables **smart energy management**:

- Ultra-fast overload and short circuit **interruption**
- Integrated **monitoring**
- **Remote control**



## Industrial electromechanical circuit breakers



## ECPD, *Electronic Circuit Protection Device*

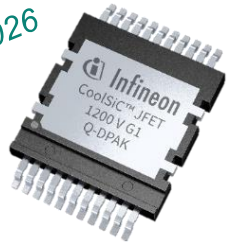


Courtesy of Siemens

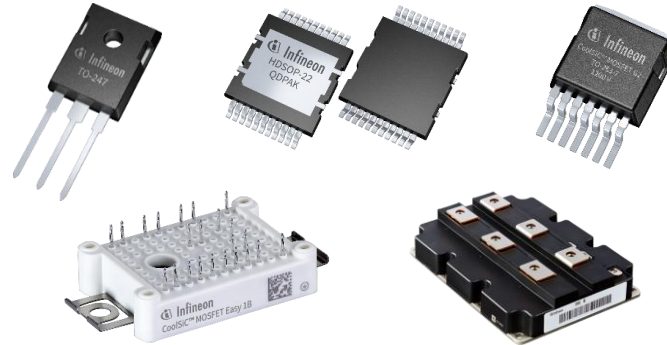
# Adding CoolSiC™ JFET to MOSFETs: Infineon offers most comprehensive SSCB portfolio in the industry



Sampling now, start of production in 2026



Q-PAK with CoolSiC™ JFET



More than 20 SSCB key customers and first Design-Wins with CoolSiC™ JFET



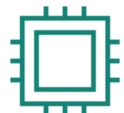
## Energy savings

- ✓ Provides ground-breaking ultra-low  $R_{DS(on)}$  1.5mΩ at 750V and 2.3mΩ at 1200V  $V_{BDss}$



## Robustness and reliability

- ✓ Designed and tested to handle extreme over-voltage, over-current and short-circuit conditions



## Integration and scalability

- ✓ Developed for ease-of-integration, scalability and manufacturability for industrial and automotive applications

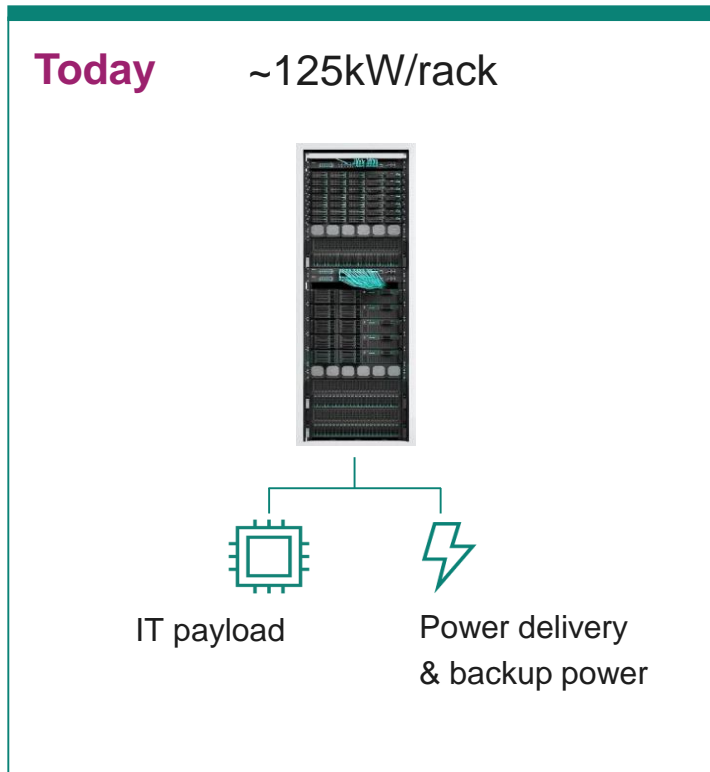


# Infineon enables the architectural evolution from 125kW up to 1MW per rack



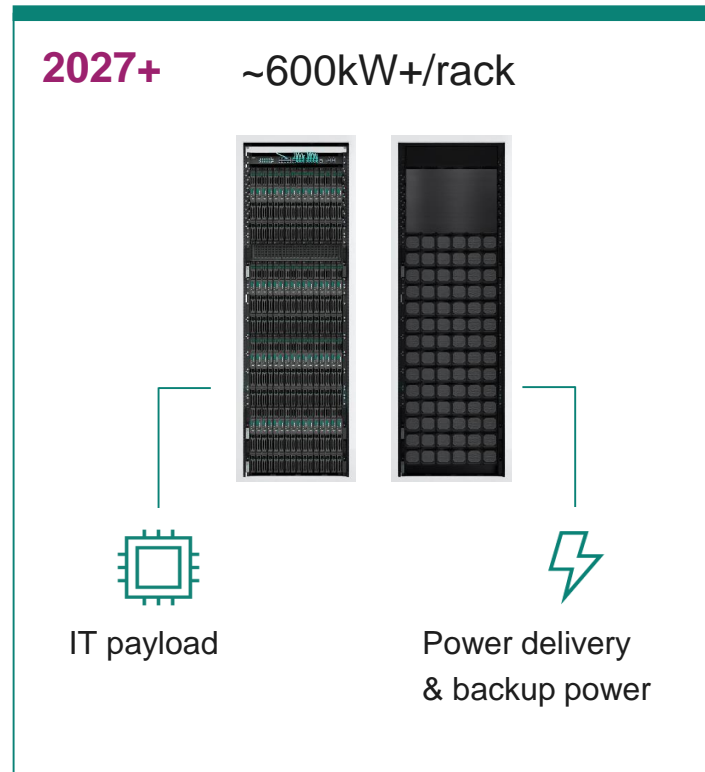
Grid  
Rack  
Core  
Physical AI

## PSUs within server rack

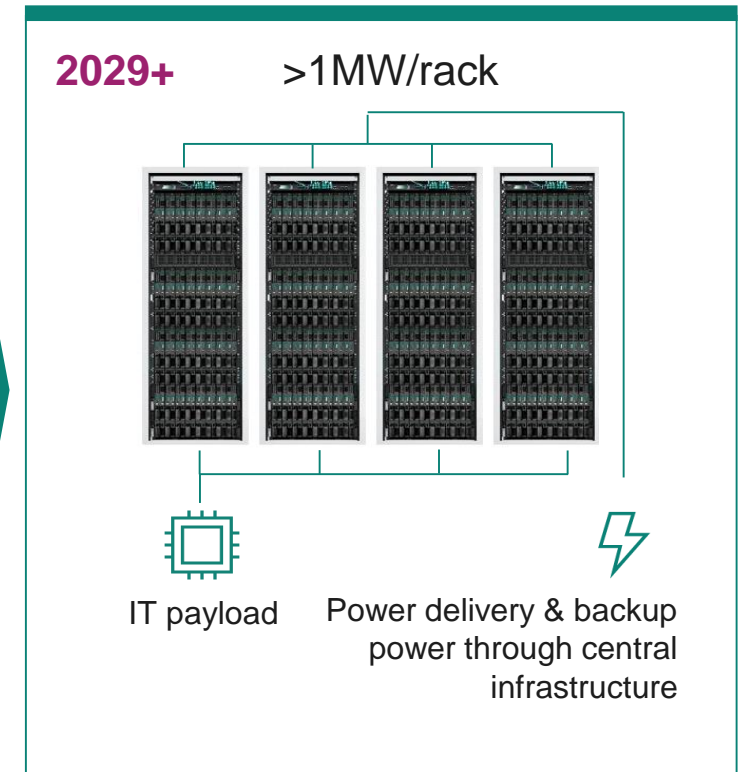


~\$15k

## 3-phase VDC power sidecar



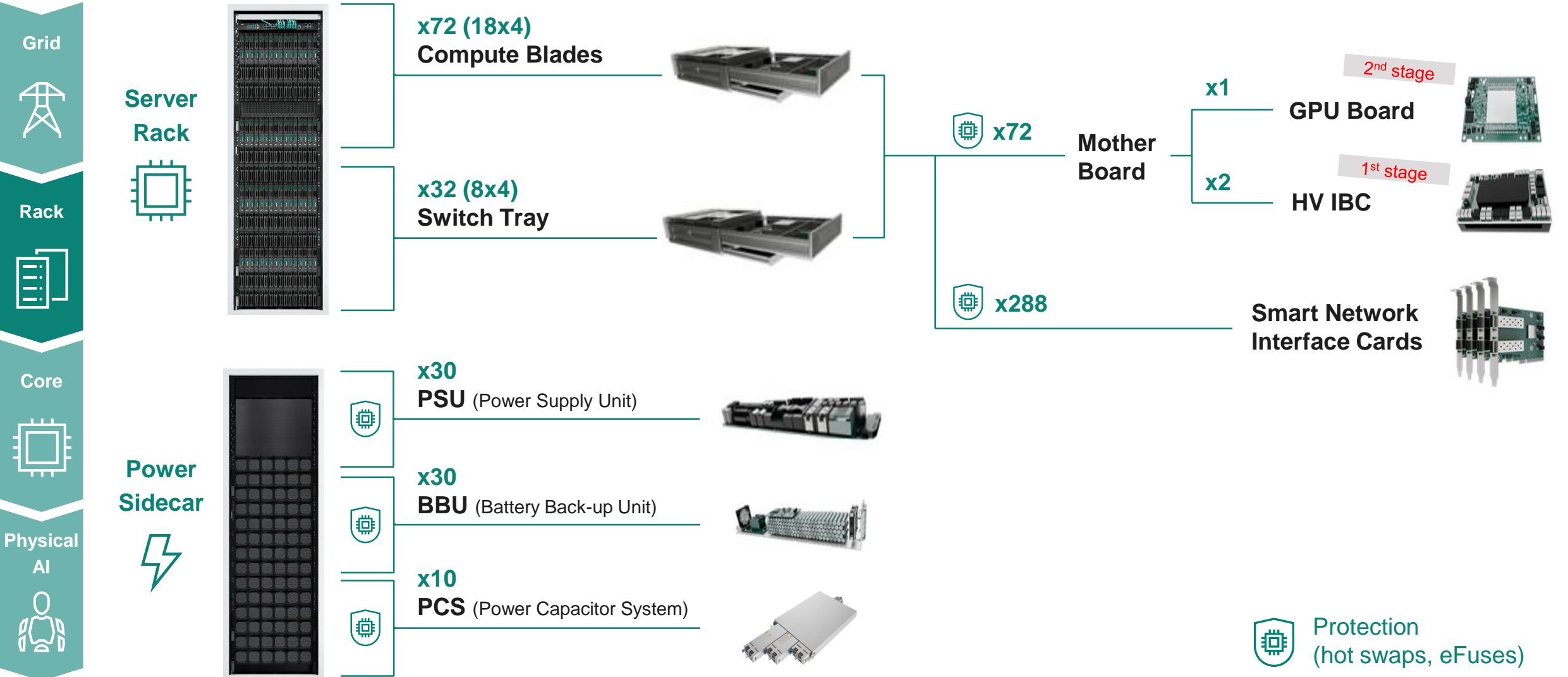
## Hybrid microgrid



>\$100k

**Infineon**  
Content

# 3-phase VDC power sidecar – Infineon powers AI from grid to core for accelerated compute, driving further content growth

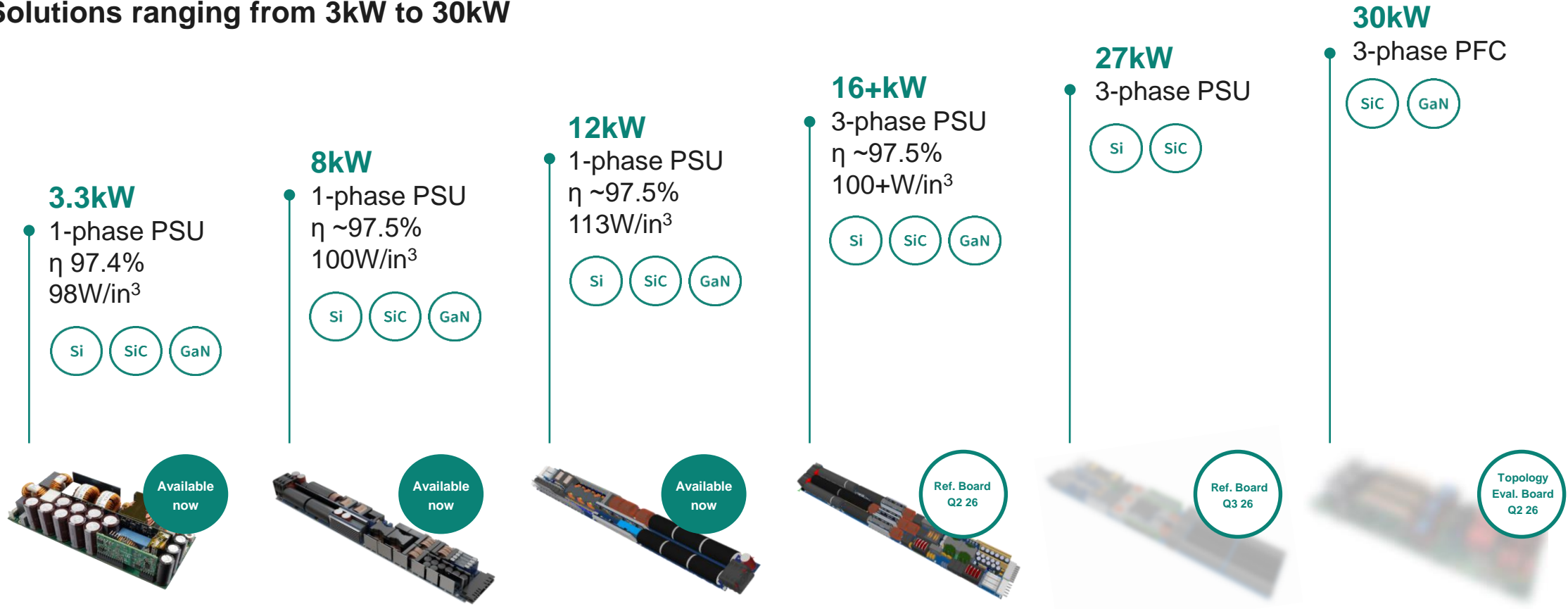


Example of a potential 3-phase HVDC power sidecar architecture

# Innovative 3-phase PSU system solutions leverage system expertise and IP to deliver industry-leading performance and efficiency



## Solutions ranging from 3kW to 30kW



Rising power demands require the transition to advanced three-phase PSU architectures



# Infineon advances the data center power architecture through protection enabling better efficiency and serviceability

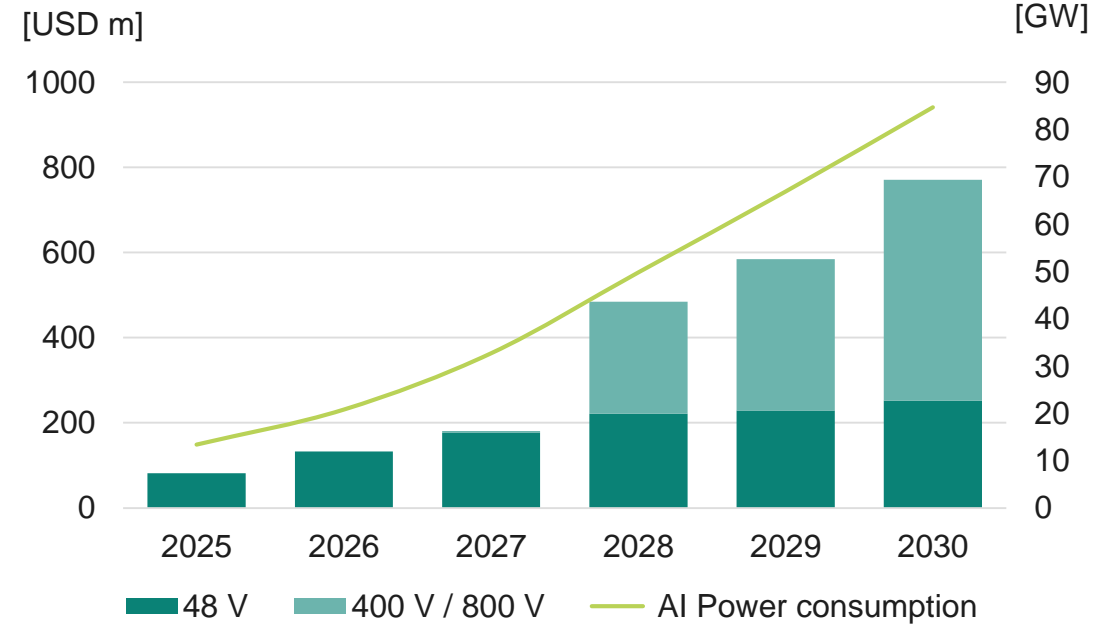


**Infineon's power path protection portfolio supporting 48V and 400V/800V architectures**

Smart eFuses as well as the hot-swap controller technology are essential in high-performance computing environments to enable monitoring, reduce disruptions, and maximize server uptime.

Si   SiC   GaN

## SAM AI Protection



## Protection solutions

**MV** 48V smart eFuse ICs family



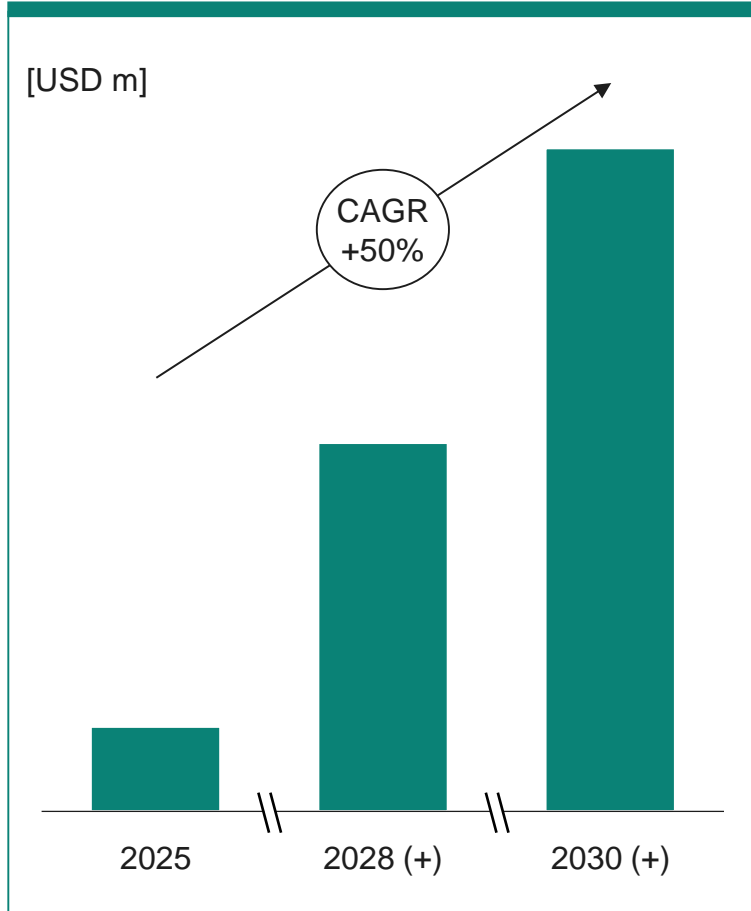
**HV** 400V/800V hot-swap controller reference design



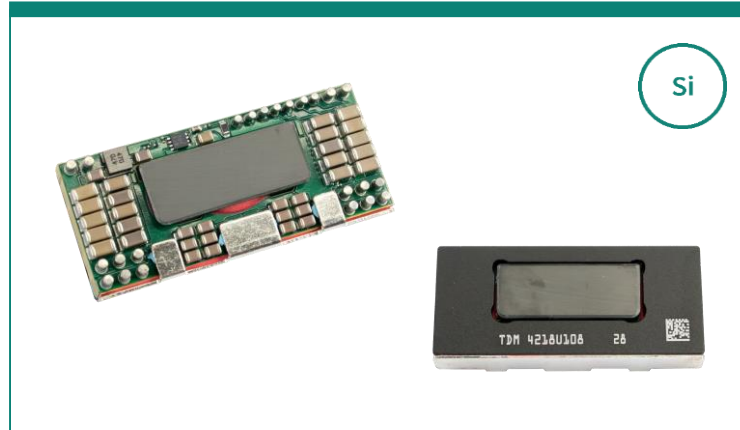
# Infineon offers a broad portfolio of HV & MV IBCs for current and future AI server rack architectures



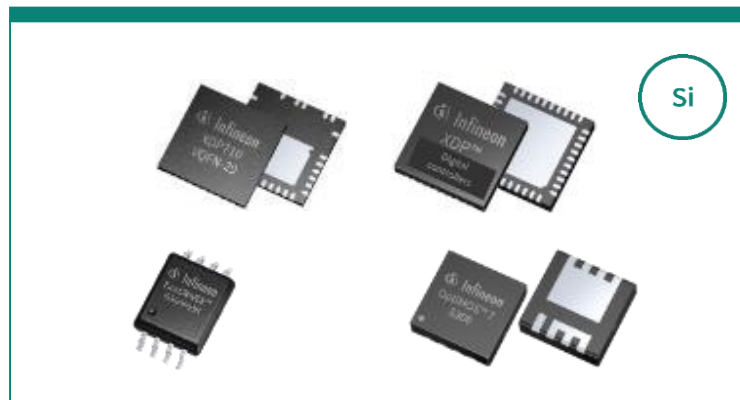
## SAM IBC Market



## Infineon IBC Module for AI



## Discrettes



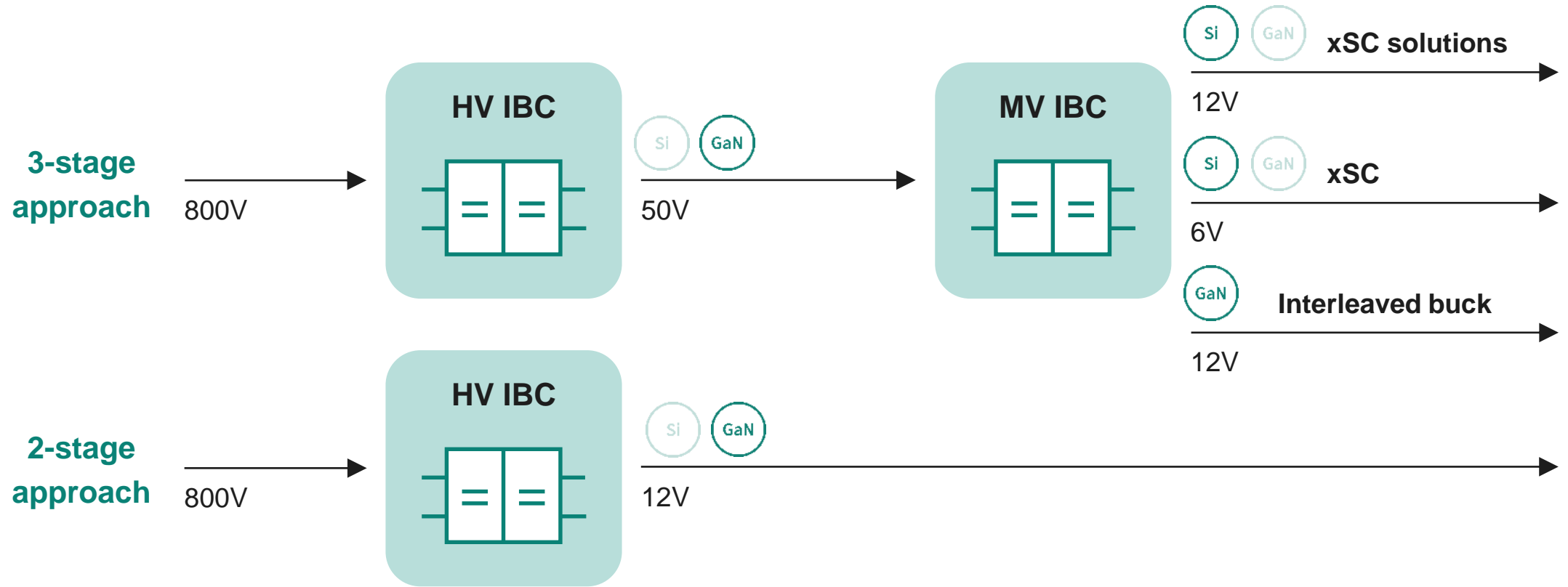
## Meeting customer requirements

1. With a wide range of **IBC topologies**, Infineon is serving a multitude of data rack configurations while ensuring cost-effectiveness
2. **Quality and Reliability** to improve mean time between failures in complex systems
3. **Power density** as GPU power increases
4. **Efficiency** for total cost of ownership
5. **Thermal Management** in air / liquid cooled environments
6. **Supply security** with 2<sup>nd</sup> source and fast time to market

# Converting HV-DC to GPU supply voltages - Infineon offers 2- and 3-stage solutions



## Regulated and unregulated intermediate bus converters (IBC)



# Infinion's cutting edge vertical power delivery solutions significantly reduce power losses in AI data centers further



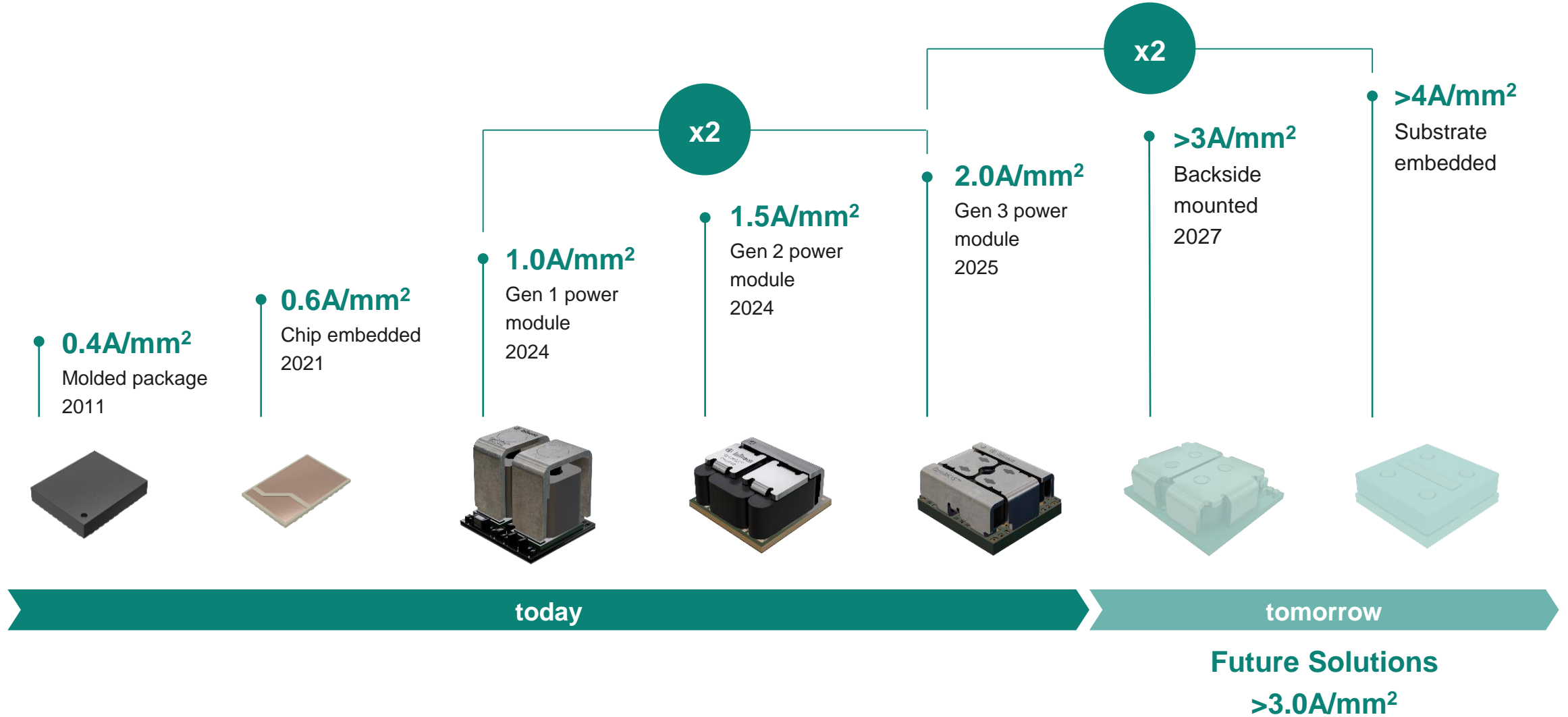
<p>Grid</p>	<p>Lateral Power Delivery</p>	<p><b>Discrete (Lateral)</b></p> <ul style="list-style-type: none"> <li>+ Power stages, inductors and capacitors located next to the processor</li> <li>+ Lowest cost, with established eco-system and quality record</li> <li>+ PDN losses exceed 100W for GPU currents beyond 850-1000A</li> </ul>	<p>Lumped PDN<sup>1</sup> 90-140μΩ</p>	
<p>Rack</p>	<p>Vertical Power Delivery</p>	<p><b>BVM – Backside Vertical Module (Vertical)</b></p> <ul style="list-style-type: none"> <li>+ Increases power density by eliminating required spacing between multiple smaller modules</li> <li>+ Simplifies motherboard design by eliminating routing of input power and control signals under processor</li> </ul>	<p>Lumped PDN<sup>1</sup> 10-15μΩ</p> <p>-89%</p>	
<p>Core</p>	<p>Vertical Power Delivery</p>	<p><b>SiVR – Substrate integrated Voltage Regulator (Vertical)</b></p> <ul style="list-style-type: none"> <li>+ Reduces substrate PDN losses by additional 10-15%</li> <li>+ Removes substrate interconnect current limitations</li> </ul>	<p>Lumped PDN<sup>1</sup> 7-10μΩ</p> <p>-93%</p>	

<sup>1</sup>total resistance of Power Delivery Network

# Highest-density VRM modules enable true vertical power delivery adjacent to the processor



Grid  
Rack  
Core  
Physical AI



# Infiniteon's AI leadership enabled by system-first thinking and strategic differentiation by design



## System understanding

Industry leading **system and innovation expertise along the entire power conversion chain**



## Broadest product portfolio

Best-in-class performance and **mastering of all of the three relevant semiconductor technologies** (Si, SiC, GaN) including Power ICs



## Customer first

**Accelerating innovation-to-customer value** through high customer intimacy, system innovations, best-in-class efficiency and lowest cost of ownership



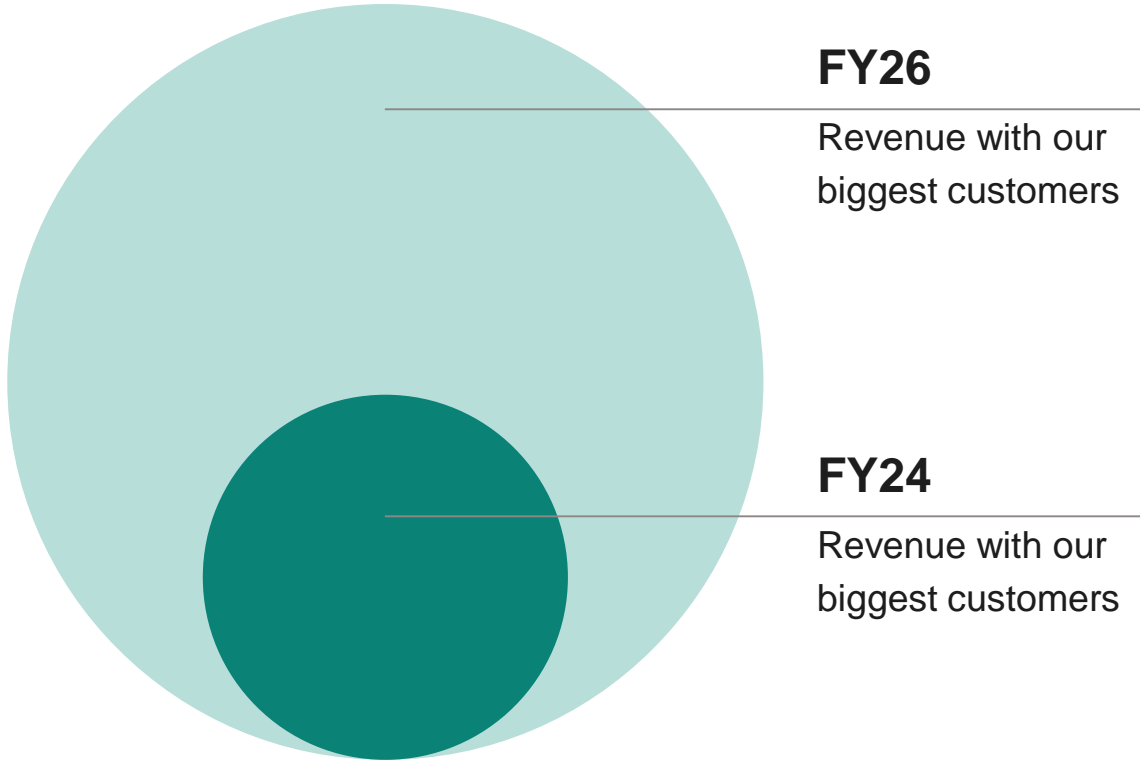
## Quality and Manufacturing

**High reliability and security of supply** through rigorous quality standards and vertical integration based on leading in-house manufacturing capabilities

# AI will further accelerate the revenue growth for Infineon's rapidly-growing server business



Infineon is growing together with customers driven by significant AI investments



In **FY25**, our AI server business achieved **>€700m** nearly **tripling** vs. FY24

We expect to **more than double** our revenue to **~ €1.5bn** in **FY26**

**Addressable market for us** in the range of **€8bn to €12bn** by end of decade



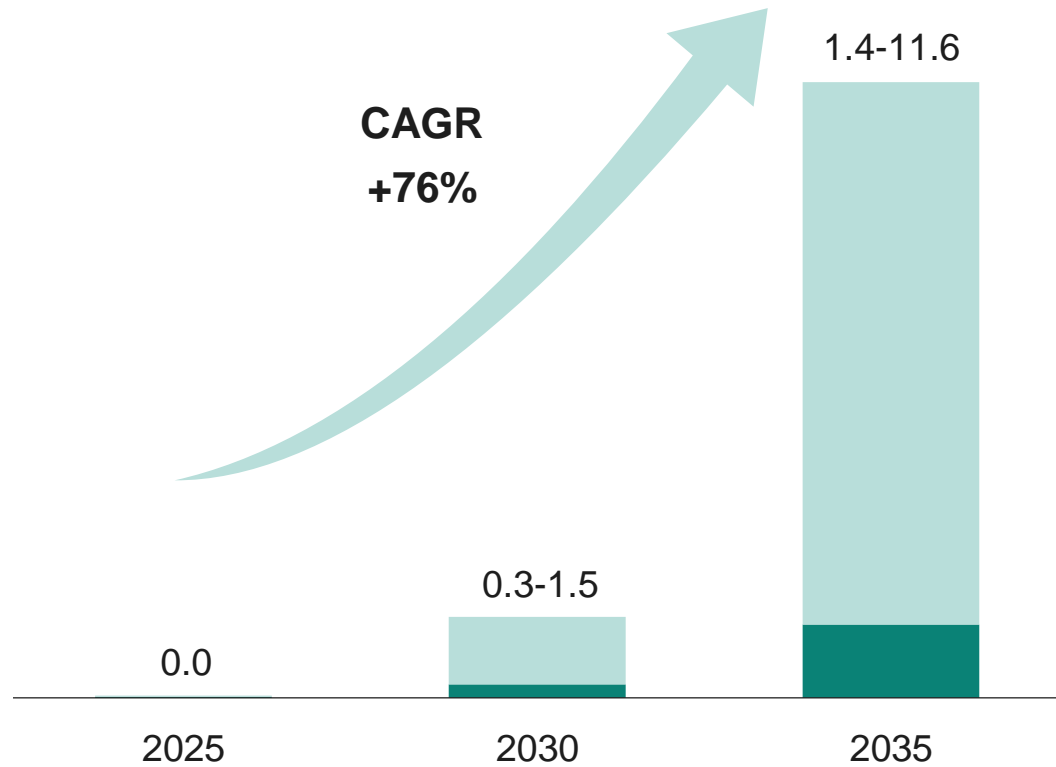
# Bringing AI into the physical world: humanoids – an emerging new long-term growth driver for Infineon

Grid  
Rack  
Core  
Physical AI

## Global humanoid market size forecast

[In million units]

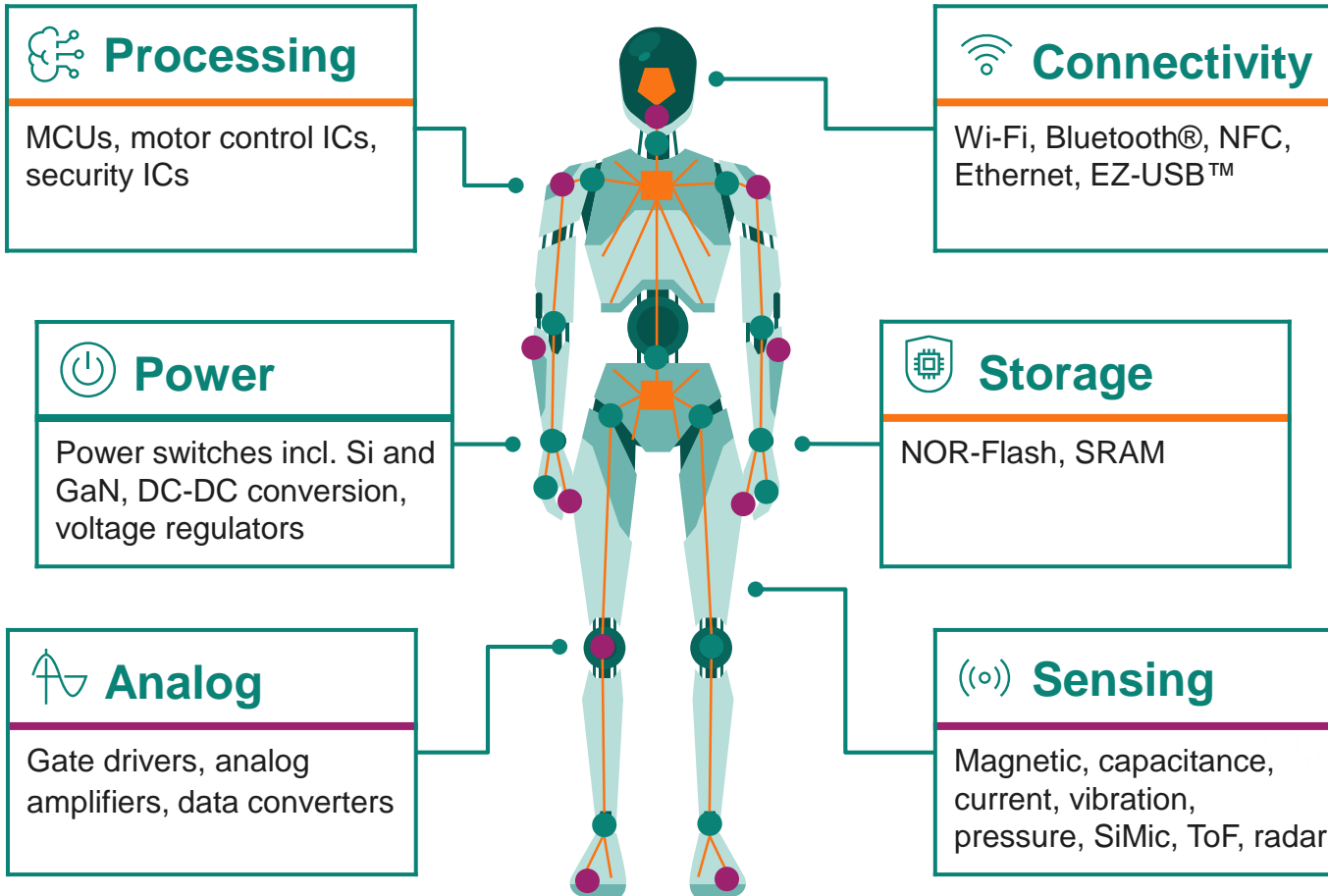
Goldman Sachs "Base" Goldman Sachs "Blue Sky"



Goldman Sachs: *Humanoid Robot: The AI accelerant*



# We empower humanoids to sense, move, act and connect. Safe and secure.



■ control & connectivity ■ analog & sensors ■ power



# ~\$450

Infiniteon's addressable content per humanoid robot

## We proudly power AI ... from grid to core and beyond

- ✓ We power AI from **grid to core** with **full system understanding** and our industry leading **product portfolio** and **innovation expertise**
- ✓ We enable the **key functional blocks** in humanoid robots with our **broad portfolio of dedicated products** from power switches to microcontrollers, to sensors and connectivity
- ✓ Best-in-class performance and **mastership of three relevant semiconductor technologies** (Si, SiC and GaN)
- ✓ **€1.5bn of dedicated AI revenue expected in FY26**  
Accelerating **customer value** through **lowest cost of ownership** and **reliability**

# Questions & Answers





# Abbreviations

AC	alternating current
AI	artificial intelligence
BBU	battery back-up unit
BMS	battery management system
BVM	backside vertical module
DC	direct current
ECPD	electronic circuit protection device
ESS	energy storage system
GaN	gallium nitride
GPU	graphic processing unit
HFT	high-frequency transformation
HV	high voltage
HVAC	heating, ventilation, air conditioning
HVDC	high-voltage direct current
IBC	intermediate bus converter
IC	integrated circuit
IoT	internet of things

LLC	resonant tank converter
LV	low voltage
MV	medium voltage
OEM	original equipment manufacturer
PCS	power capacitor system
PFC	power factor correction
PDN	power delivery network
PSU	power supply unit
SAM	serviceable available market
Si	silicon
SiC	silicon carbide
SiVR	substrate integrated voltage regulator
SSCB	solid-state circuit breaker
SST	solid-state transformer
UPS-ESS	uninterruptable power supply energy storage solution
VRM	voltage regulator module
xSC	different switched capacitor topologies

# Adam White, Division President Power & Sensor Systems



## Adam White

was born in the United Kingdom in 1974.

He holds a Diploma in Engineering, Electronic and Electrical Engineering with Industrial, BEng (Hons) DIS from University of Loughborough, United Kingdom.

### 1996 – 2010

Various R&D, Operations, Marketing, Sales and Management positions, International Rectifier

### 2010 – 2015

Executive Officer & SVP Worldwide Sales<sup>1</sup>, International Rectifier

### 2015 – 2022

Chief Marketing Officer<sup>1</sup> of Power & Sensor Systems Division, Infineon

(Adam White became a part of Infineon 2015 in light of the acquisition of International Rectifier)

### Since 2022

Division President Power & Sensor Systems, Infineon

# 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  
Industrial Power  
Control