

# **HAMBURGER INVESTORENTAGE**

**AUGUST 24, 2023**

**MARC BUNZ (CFO)**



# AGENDA



- Company Overview
  
- Pillars of Growth
  - Technology – Embedding Update
  - Market – Globalization
  - Supply Chain – Enabling Resilience
  - Operations – Fab-Light Concept
  
- Financials 1<sup>st</sup> Half Year
  
- Guidance 2023
  
- ESG



# COMPANY OVERVIEW

# FROM CUCKOO-CLOCK TO CHIP EMBEDDING



## OVER 174 YEARS OF EXPERIENCE



**1849**

The enamel clock face factory “Christoph Schweizer“ is founded on October 28, 1849



**1936**

Aluminium and brass name plates are added to the product range



**1958**

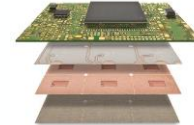
Pioneering PCB: production of printed circuit boards (PCBs) started



**2010**

High End PCBs are at the core of the business

Broad base of Standard and Advanced PCBs



**Today**

Focus on Embedding & System Solutions in Low Voltage (GEN1)

Offering almost all PCB technologies



**Tomorrow**

Always a step ahead: High Voltage SIC Chip Embedding (GEN2)

# MORE THAN PCBs

## QUICK FACTS



~ **600** EMPLOYEES



**174** YEARS OF EXPERIENCE



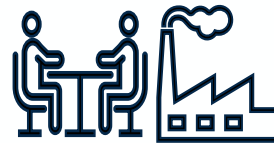
**8400** sqm **PRODUCTION CAPACITY PER DAY** (w/ partners)



**131 Mio EUR** TURNOVER (2022)



**5** LOCATIONS WORLDWIDE

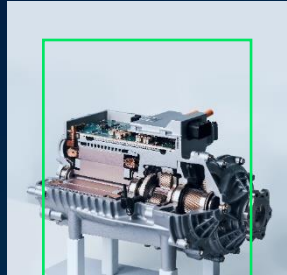


**9** PARTNER FACTORIES

# OUR DNA - MORE THAN PCBs



We are a family managed, stock-listed technology company based in Schramberg in Germany's Black Forest Region. We offer Advanced Technologies, Engineering-Driven Solutions and Safe Supply based on our unique German-Asian footprint.



## INNOVATIVE

Excellence in state-of-the-art technology & System Know-how with outstanding track record in Automotive and Industry for decades



## RELIABLE

Supply Chain Security even if international Supply Chains are interrupted by biggest PCB fab in Europe and a unique Partner Network



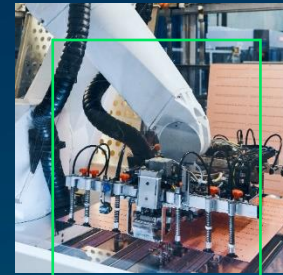
## GLOBAL & LOCAL

Highly experienced Global and Local Sales Teams & Engineering Services



## TECHNOLOGY SCOPE

From standard to highly sophisticated and original technologies



## INDUSTRY 4.0

Highly automated Joint Venture production with scalable concept in China and volume potential up to 8,400 sqm/day (w/ Partners)



## COMPETITIVE

Competitive supply due to integrated production in our own Fab, Production Joint Venture in China and Partner Network in Asia



# PILLARS OF GROWTH

# PILLARS OF GROWTH



## TECHNOLOGY

improved

Embedding  
48V  
High Voltage

**p<sup>2</sup> Pack Gen 2:  
addresses BEV  
needs**



## MARKET

adjusted

Globalization  
Growth Segments

**More Focus on  
Western  
hemisphere**



## SUPPLY CHAIN

increased  
importance

Enabling  
Resilience

**Increasing need  
for Production in  
Europe**



## OPERATIONS

adjusted

Fab Light  
Concept

**Growth at  
reduced CAPEX  
level**



## SUSTAINABILITY





# TECHNOLOGY

# MORE THAN PCBs



CUSTOM PCBs ARE OUR STANDARD – CHIP EMBEDDING IS OUR SPECIALTY

## Custom PCBs

From **Standard PCB** to customer-specific **Advanced PCB** designs

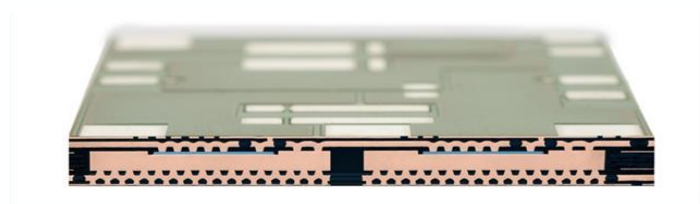
- we can meet practically any technology need and lot size
- while offering top cost-effectiveness



## Chip Embedding





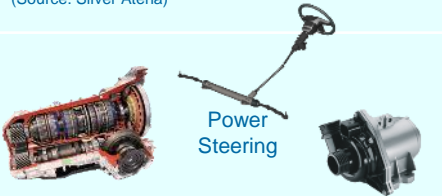


Our **Original Technologies** support **Power Electronic** applications in

- eMobility
- Renewable Energy
- Data Center
- Telecommunication
- demanding Industrial Applications



# EMBEDDING ROADMAP











	Electrification ~ 500W – 5kW	Downsizing ~ 3kW – 25kW	Hybrid & E-Drive ~ >25kW
HV 400V - 800V			 <p>OBC AC/DC</p> <p>Hybrid (+ DC/DC)</p> <p>E-Car (+ AC/DC)</p>
48V	 <p>Active Roll Stabilize (Source: Silver Atena)</p> <p>Climate Compressor</p>	 <p>48/12V DC/DC</p> <p>Crankshaft Starter Generator (P2)</p>	 <p>Mild Hybrid (P4)</p>
12V (+ Option 14V)	 <p>Gearbox</p> <p>Power Steering</p> <p>E-Pumps + Fans + Heaters</p>	 <p>E-Compressor</p> <p>Belt Driven Starter Generator (P0)</p>	 <p>Battery Switch</p>

# 48V SCHWEIZER PROJECT EXPERIENCE









## DESIGN WINS & DESIGN INs 48V

	<h3>48V P2</h3> 	<ul style="list-style-type: none"><li>• <math>P_{out}</math>: 25 kW, 20 s</li><li>• <math>P_{out}</math>: 18 kW, permanent</li><li>• <math>R_{th}</math>: <math>\leq 1,2</math> K/W</li><li>• System in Board Design</li></ul>	<ul style="list-style-type: none"><li>• Safe-Launch in Germany completed</li><li>• Product running stable in production</li><li>• @Next: Safe Launch in Jintan for upcoming volume rise</li></ul> 
	<h3>48V P0</h3> 	<ul style="list-style-type: none"><li>• <math>P_{out}</math>: 19 kW, permanent</li><li>• <math>R_{th}</math>: <math>\leq 1,2</math> K/W</li><li>• System in Board Design</li></ul>	<ul style="list-style-type: none"><li>• Safe-Launch in Germany started</li><li>• Product running stable in production</li><li>• @Next: Safe Launch in Jintan for upcoming volume rise</li><li>• Volume increase in negotiation customer</li></ul> 
	<h3>48V e-turbo</h3> 	<ul style="list-style-type: none"><li>• 3-Phase System</li><li>• 3 MOSFETs per switch</li><li>• Operation points with enormous current loading</li><li>• System in Board Design</li></ul>	<ul style="list-style-type: none"><li>• C-Sample built planned in 2023</li><li>• PPAP &amp; Release planned in 2024</li></ul>

# 48V SCHWEIZER PROJECT EXPERIENCE



## DESIGN WINS & DESIGN INs 48V

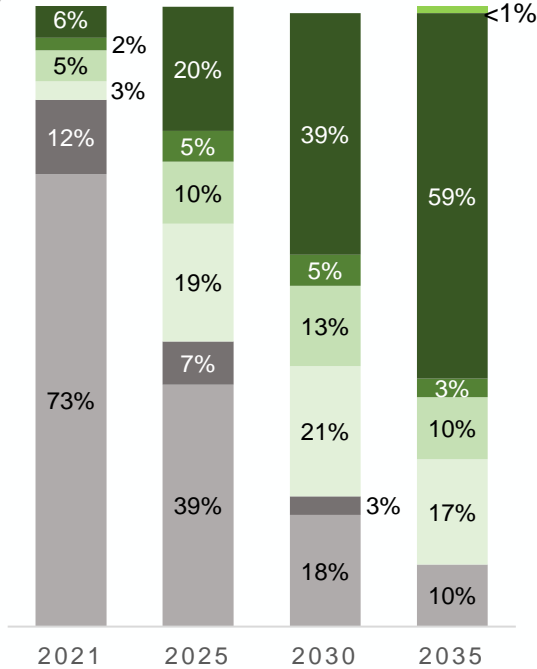
	<p><b>48 V ISG</b></p> 	<ul style="list-style-type: none"><li>• Multi-level topology Inverter</li><li>• Power Stage on Board Design</li></ul>	<ul style="list-style-type: none"><li>• B-Samples built and successfully evaluated application</li><li>• C-Samples in planning</li></ul>
	<p><b>48V Auxiliary</b></p> 	<ul style="list-style-type: none"><li>• 3 Phase system for ICE auxiliary electrification</li><li>• Power Stage on Board Design.</li></ul>	<ul style="list-style-type: none"><li>• B-Sample stage finished</li><li>• C-Samples planned within 2023</li><li>• C-Samples will be produced in Schramberg &amp; Jintan</li></ul>
	<p><b>48V BSG</b></p> 	<ul style="list-style-type: none"><li>• 6-Phase Inverter for starter generator of super sports car</li></ul>	<ul style="list-style-type: none"><li>• Low Volume project with high technical complexity</li></ul>

# THE SHIFT TO ELECTRO MOBILITY

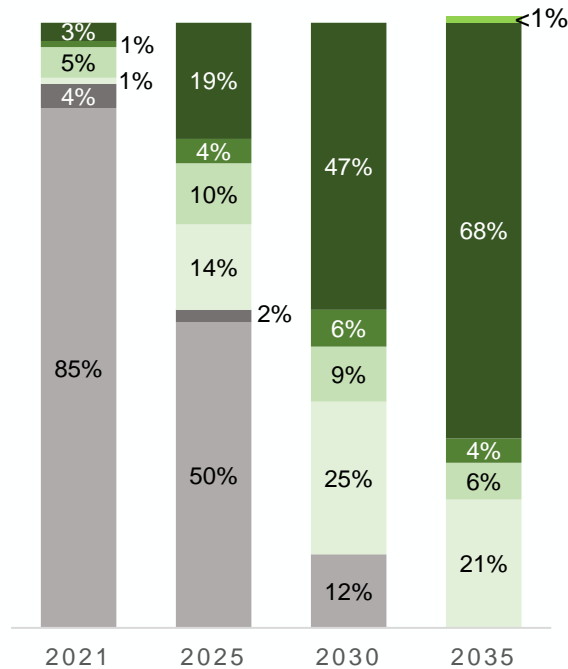


**GLOBAL PROJECTED MARKET SHARE (%)**

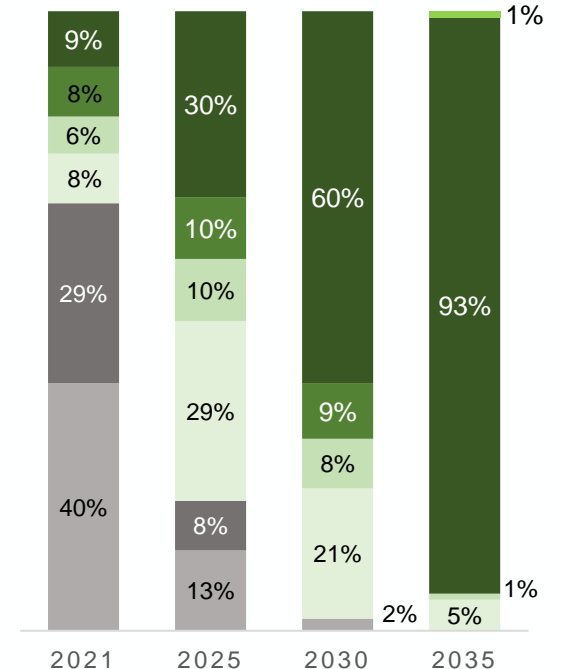
Light vehicles sold<sup>1</sup>



**US PROJECTED MARKET SHARE (%)**



**EU PROJECTED MARKET SHARE (%)**



■ Gasoline ■ Diesel ■ MHEV ■ HEV ■ PHEV ■ BEV ■ FCEV

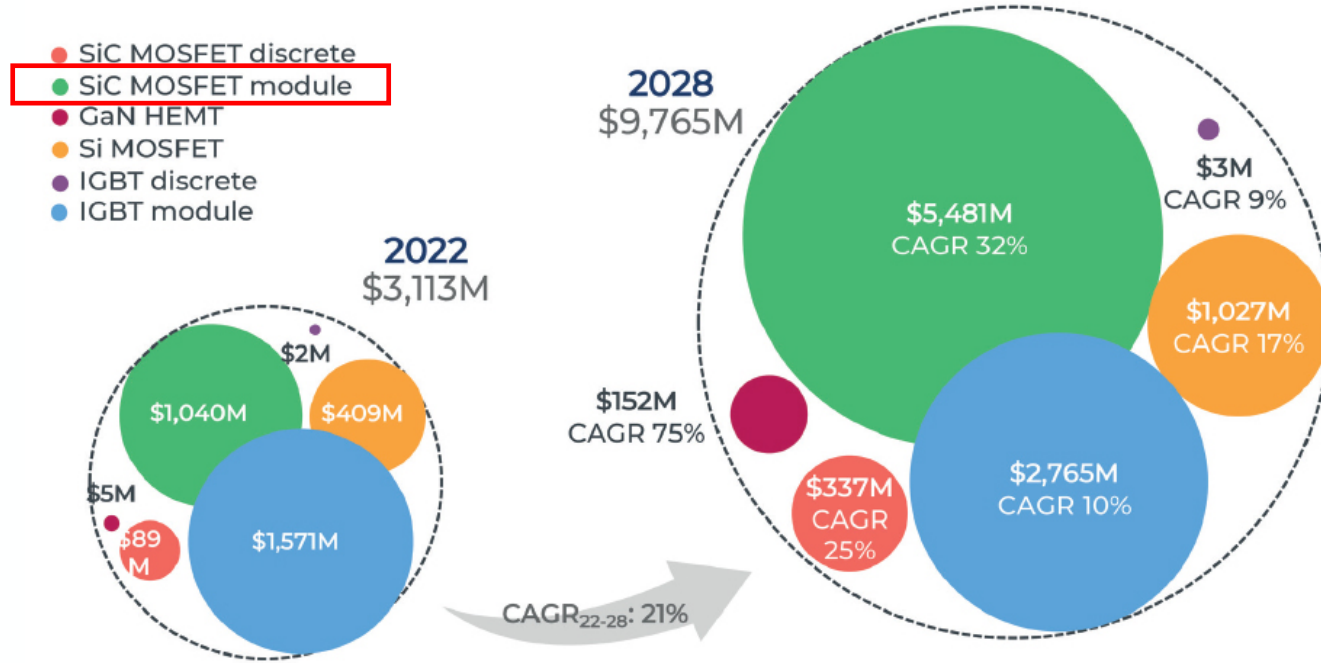
Source: Boston consulting group 2022

# THE SHIFT TO E-MOBILITY



## 2022-2028 xEV power device market forecast

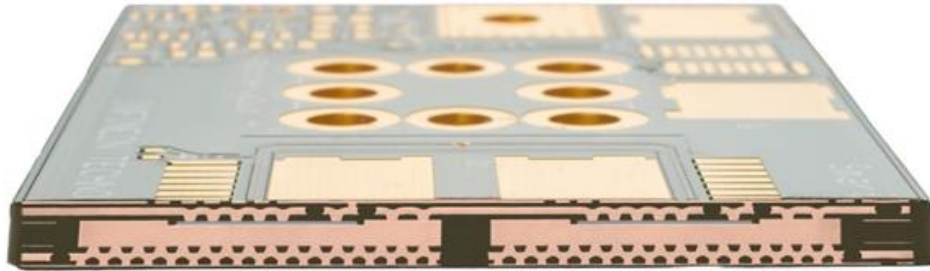
(Source: Power Electronics for e-Mobility 2023 – Focus on passenger & light commercial vehicles, Yole Intelligence, May 2023)



© Yole Intelligence 2023

# p<sup>2</sup> PACK GEN 1/2: LOW / HIGH VOLTAGE

## INSULATED VS. NON INSULATED CONSTRUCTION



### GEN 1

Top: Non-insulated. Micro via fields penetrating the bottom insulation layer to improve thermal conductivity (e.g. 48 V applications. Insulation maintained in application with TIM)



1  
2  
3  
4  
5  
6

### GEN 2

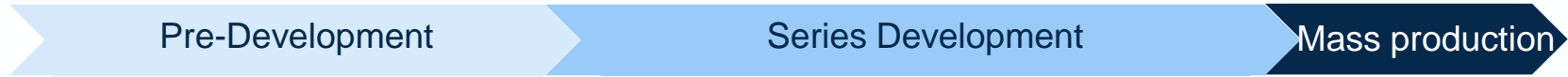
Bottom: Insulated. Micro via fields only from L5 to L6. Insulation between L4 to L5.  
400 V / 800 V Applications



# p<sup>2</sup> PACK ROADMAP\*



Gen 3: Cp<sup>2</sup> Pack 400 V / 800 V / > 800V



Gen 2: 48 V / 400 V / 800 V



Gen 1: 48 V



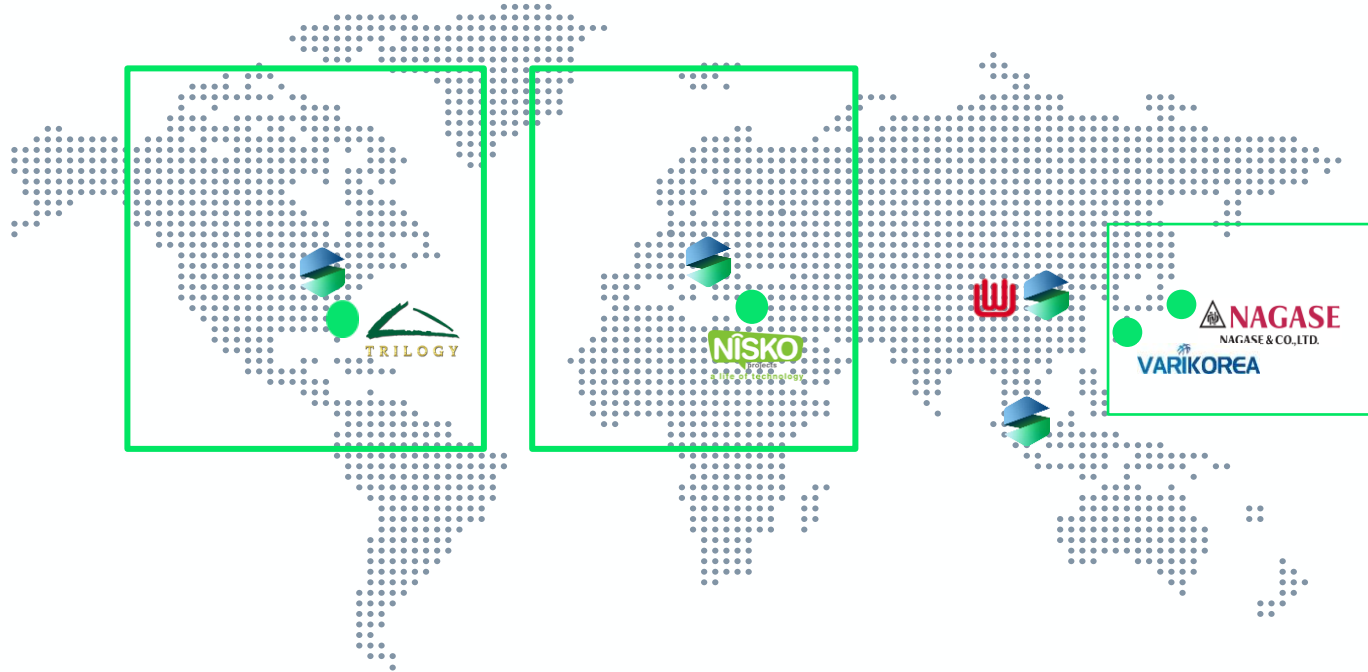
\*Timeline depending on Semiconductor availability



**MARKET**

# GLOBAL SALES NETWORK

FOCUS ON EMEA, NORTH AMERICA PLUS EAST ASIA



**SCHWEIZER Sales Office:** Germany, USA, China, Singapore  
**SCHWEIZER Sales Partners:** North America, Israel, Japan, Korea



# SUPPLY CHAIN

# ONE.CONTACT



## PCB ENGINEERING – SAFE SUPPLY



### **Reliable Supply**

- Prototype / Pilot / Ramp to Volume in Germany and Asia
- Combi-Production (Germany – Asia)
- Back Up-Production (Germany)
- Re-Shoring (Germany)
- Product Localisation



### **Engineering and Commercial Support – Worldwide**

- Design Consulting, Co-Development and Engineering Service
- System Cost Reduction
- Commercial and Technical Teams in Europe, Asia and USA



# OPERATIONS

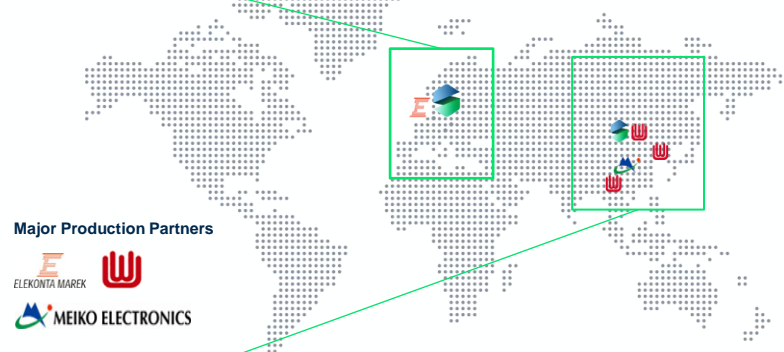
# INTEGRATED PRODUCTION NETWORK



## LARGEST PCB PLANT IN EUROPE – JOINT VENTURE PRODUCTION - PARTNERS



Schweizer Electronic AG  
Schramberg, Germany



### Major Production Partners



Schweizer Electronic (Jiangsu) Co., Ltd.  
JV WUS (80%) / Schweizer (20%), Jintan, China

### Integrated Production in Europe and Asia

- We are operating the **largest PCB fab in Europe** and a large **Joint Venture** for advanced PCBs in **China**
- **Unique network** of industry-leading, large and specialized **production partners** for PCB solutions for more than a decade
- Our **integrated production** is based on our deep engineering and production know-how

### Integrated Production means for us:

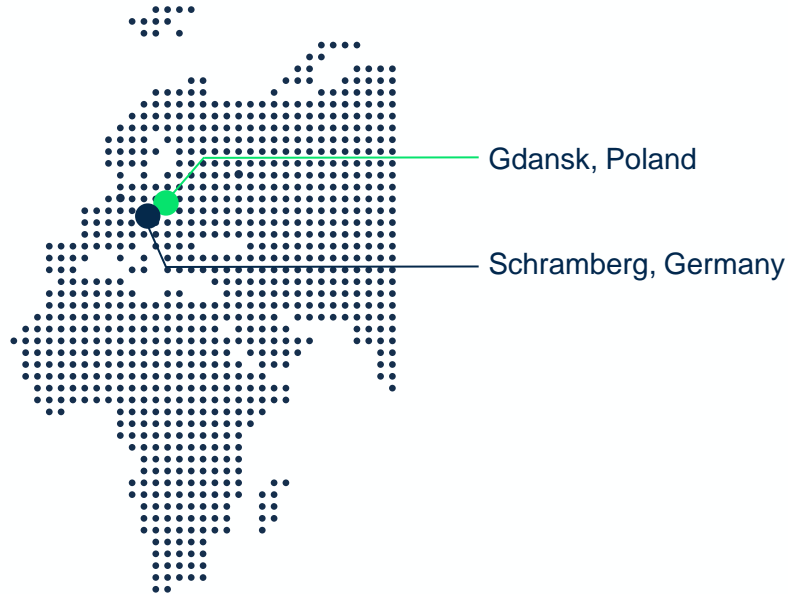
We are taking **whole responsibility** towards our customers

- From applying original technologies, engineering and design support, via prototyping, production and quality control to on-time delivery
- **In our own and our partner factories as well**

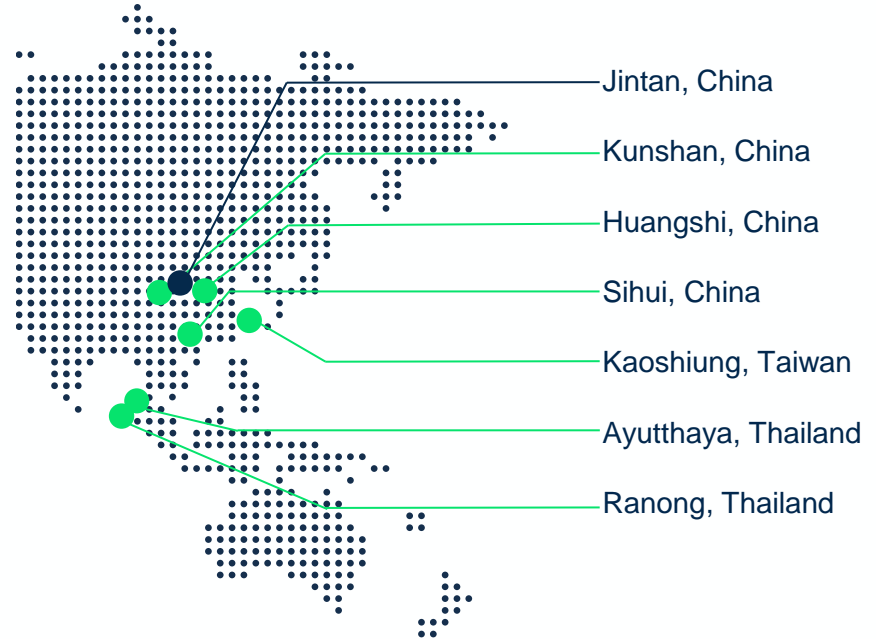
# PRODUCTION PARTNER NETWORK



## EUROPE



## ASIA







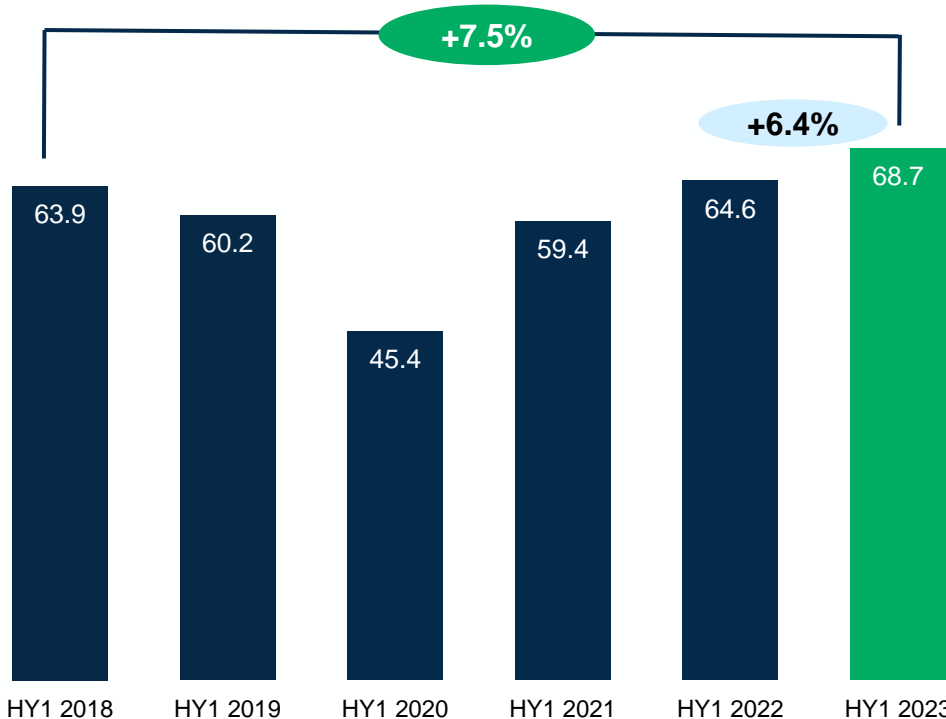
# FINANCIAL UPDATE

# FINANCIALS HY1 2023



## Revenues

in million EUR / Growth rate



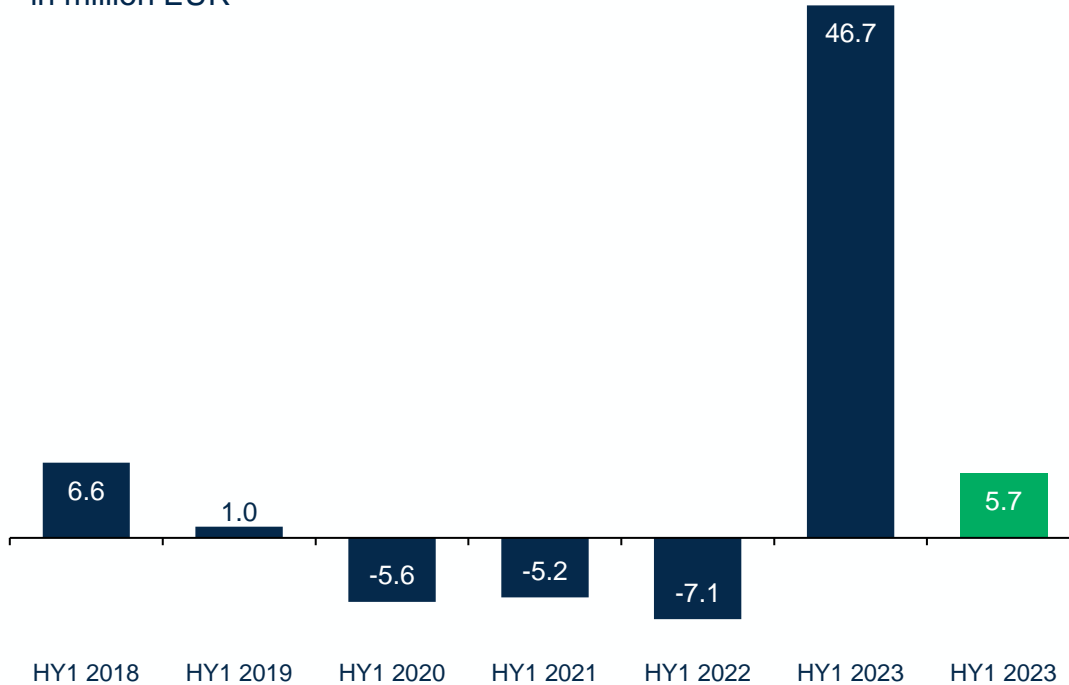
- Revenue increases by 6.4%
- Pre-crisis level exceeded
- Share with non-mobility customers rises to 33%
- Mobility-revenue below pre-crisis level

# FINANCIALS HY1 2023



## EBITDA

in million EUR



■ EBITDA

■ EBITDA adjusted for Chinese subsidiary and deconsolidation

- Includes pro rata results of the Chinese subsidiary from Jan - April 2023
- Deconsolidation effect around EUR 41 million
- Without Chinese subsidiary and deconsolidation at solid pre-crisis level

# FINANCIALS HY1 2023



## Key Figures

in million EUR

	HY1 2023	HY1 2022
Revenues	68.7	64.6
EBITDA	46.7 / 67.9%	-7.1 / -11.0%
EBITDA adjusted <sup>1)</sup>	5.7 / 8.3%	1.6 / 2.5%
	30/06/2023	31/12/2022
Equity Ratio	28.7%	-5.5%
Net Gearing	70.4%	n/a (neg. equity)

<sup>1)</sup> Adjusted for Chinese subsidiary and deconsolidation

- Higher growth rate than the market
- Increased profitability within the group excluding Chinese subsidiary
- Back to solid equity
- Back to a solid net gearing



# GUIDANCE 2023

# OUTLOOK



	Actual 2022	HY1 2023	Target 2023
Sales / Growth Rate	6.8%	6.4%	0% to 5%
EBITDA Margin	-9.4%	8.3% (adjusted*)	6% to 9% (adjusted*)
		67.9%	35% to 40%
Net Gearing	n/a (neg.equity)	70.4%	50% to 80%
Working Capital	-1.6 Mio. EUR	25.0 Mio. EUR	15 to 20 Mio. EUR
Equity Ratio	-5.5%	28.7%	25% to 30%

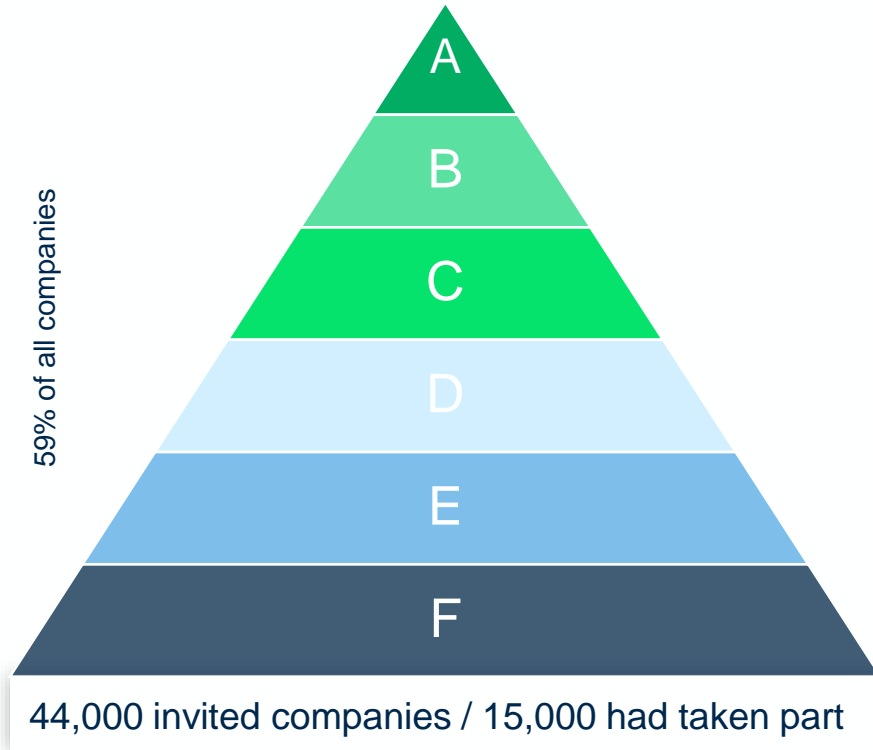
\*) Adjusted for Chinese subsidiary and deconsolidation



**E**NVIRONMENTAL **S**OCIAL **G**OVERNANCE

# ESG MANAGEMENT

## CARBON FOOTPRINT REDUCTION



Only 12 companies achieved a “Triple A” rating, while 330 companies received an “A” rating for Climate, Water and Forest

**SCHWEIZER**

e.g. Tesla, Berkshire Hathaway and Exxon Mobile



# ESG MANAGEMENT

## CERTIFICATIONS



### **CERTIFICATION AUDITS AROUND ISO 14001 / EM ISO 50001**

- As a value-oriented company we are committed to our high standards in environmental and energy management and subject our actions to external audits

The quality of our systems is reflected in the successful

**DIN EN ISO 50001 : 2018 and ISO 14001 : 2015**

### **ENVIRONMENTAL ISSUES - CORE TOPICS AND INDICATORS**

For Schweizer's business area, the following key issues and performance indicators arise in relation to environmental concerns and are measured on an annual basis:

- Energy consumption,
- Carbon footprint,
- Water consumption,
- Waste,
- Use and consumption of resources (raw materials)

# ESG MANAGEMENT

## CODE OF CONDUCT



The "**ZVEI Code of Conduct on Social Responsibility**" (CoC) serves as the basis for our social responsibility in the context of our worldwide activities.

This guideline of the German Electrical and Electronic Manufacturers' Association (ZVEI) sets out what corporate responsibility means, for working conditions, social and environmental compatibility as well as transparency, trusting cooperation and dialogue.





# APPENDIX

# EXECUTIVE BOARD



## **Nicolas-Fabian Schweizer**

Chief Executive Officer

Ass. Jur. Nicolas-Fabian Schweizer is member of the Board since April 2011 and appointed until June 2027.

In charge of Technology R&D, Business Development, Operations & Quality, Human Resources, Legal and Media & Communications (PR).

## **Marc Bunz**

Chief Financial Officer

Dipl.Kfm. Marc Bunz is member of the Board since April 2010 and appointed until March 2028.

In charge of Sales & Marketing, Finance & Controlling, Global Supply Chain, Information Technologies and Investor Relations.





## FINANCIAL CALENDAR

<b>Date</b>	<b>Publication/Event</b>
2023-11-03	Interim Report 3rd Quarter 2023
2024-06-28	Annual General Meeting

## IR CONTACT

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# SCHWEIZER @ YOUTUBE



**NEW VIDEO**

**p<sup>2</sup> Pack  
Embedded Power Devices**



**WATCH NOW**

# SAFE HARBOUR STATEMENT



This communication contains forward-looking statements and information – that is statements about events that lie in the future, not the past. These forward-looking statements can be identified by formulations such as “expect”, “wish to”, “anticipate”, “propose”, “plan”, “believe”, “seek to”, “estimate”, “become” or similar terms. While such forward-looking statements represent our current expectations and particular assumptions, they are subject to various risks and uncertainties. A number of factors, many of which are outside the control of Schweizer, have an impact on Schweizer’s business activities, strategy and results. These factors could cause the actual results and performance of the Schweizer Group to differ materially from the information on results and performance made explicit or implied in these forward-looking statements. On our part these uncertainties arise in particular due to the following factors: Changes to the overall economic and business position (including margin developments in the major divisions), challenges posed by the integration of important acquisitions and the implementation of joint ventures and other major portfolio measures, changes to exchange and interest rates, the introduction of competing products or technologies by other companies, failure to find acceptance of new products and services among Schweizer’s target client groups, changes to the business strategy and various other factors. Should one or more of these risks or uncertainties be realised or it becomes apparent that the underlying assumptions were incorrect, this could cause the actual results to differ materially both in a positive and negative sense from the results referred to in forward-looking statements as expected, anticipated, proposed, planned, projected or estimated. Schweizer does not obligate itself and does not intend to revise or correct these forward-looking statements in light of developments which differ from those anticipated.

A large, detailed image of the Earth as seen from space, showing the curvature of the planet and the blue oceans and white clouds. The background is a dark, starry space.

**MORE THAN PCBs**