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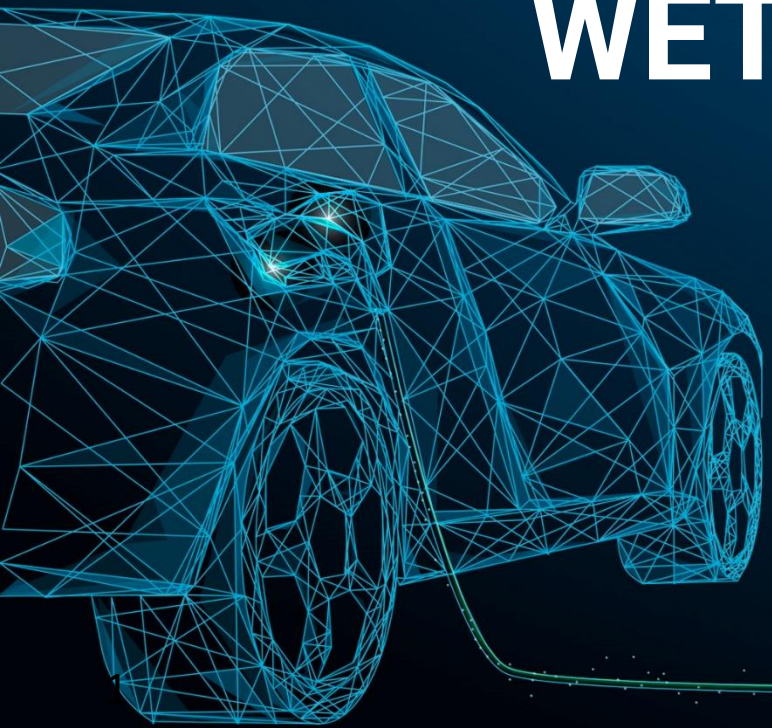
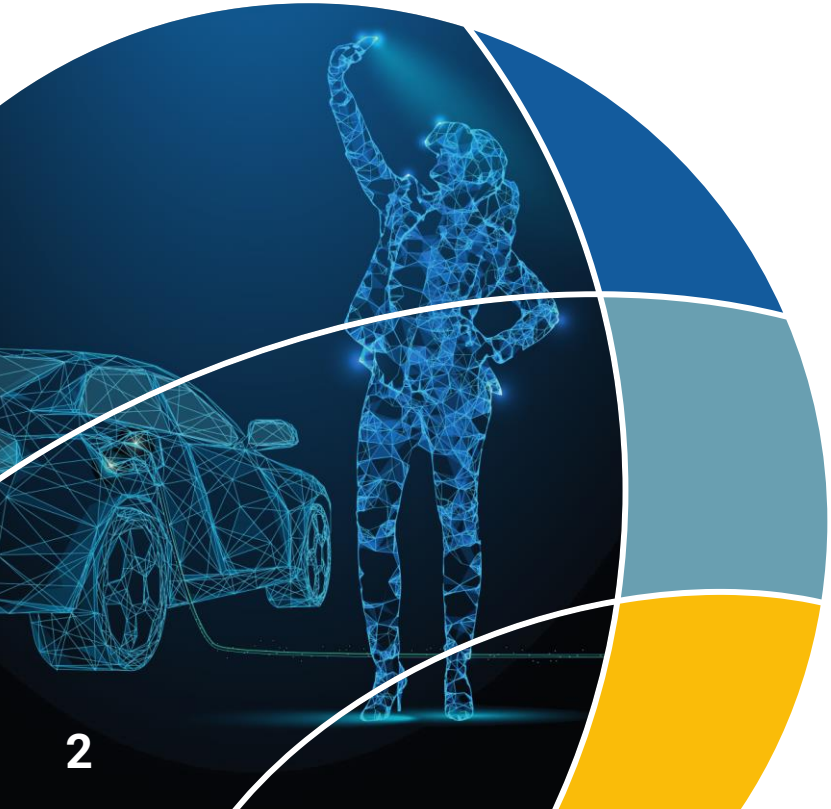
WELCOME TO WETTENBERG!



TODAY‘S AGENDA



10.30 | STRATEGY 2028

11.30 | COFFEE BREAK

11.45 | TECH & ESG TOUR, PART I

12.45 | LUNCH AT OUR CAFETERIA

13.30 | TECH & ESG TOUR, PART II

14.50 | COFFEE BREAK & TECH QUIZ

15.15 | ORGANIZATION & FINANCIALS

16.30 | END OF EVENT

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TODAY‘S SPEAKERS

MEET OUR TEAM OF EXPERTS

JALIN KETTER
CEO

PETER CZURRATIS
METROLOGY

JAN PFEIFFER
TECHNOLOGY HUB

UDO BROICH
MATERIAL SOLUTIONS

MICHAEL SCHUBERT
ESG

ELKE KLEEMANN
FINANCE

MARKUS MAIER
LASER & VPD

HARI POLU
ULTRASOUND

DENNIS SEIBERT
CRYSTAL GROWING

MARLENE DEITERSEN
ESG

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PVA TEPLA AT A GLANCE

HIGH-TECH SOLUTIONS COMBINED WITH AN ASSET LIGHT MODEL

Experienced, **critical enabler for high-tech material science** solutions

Product portfolio of state-of-the-art, **industry-leading technologies and solutions**

Strong **organic growth story**, which will be supplemented with **strategic M&A**

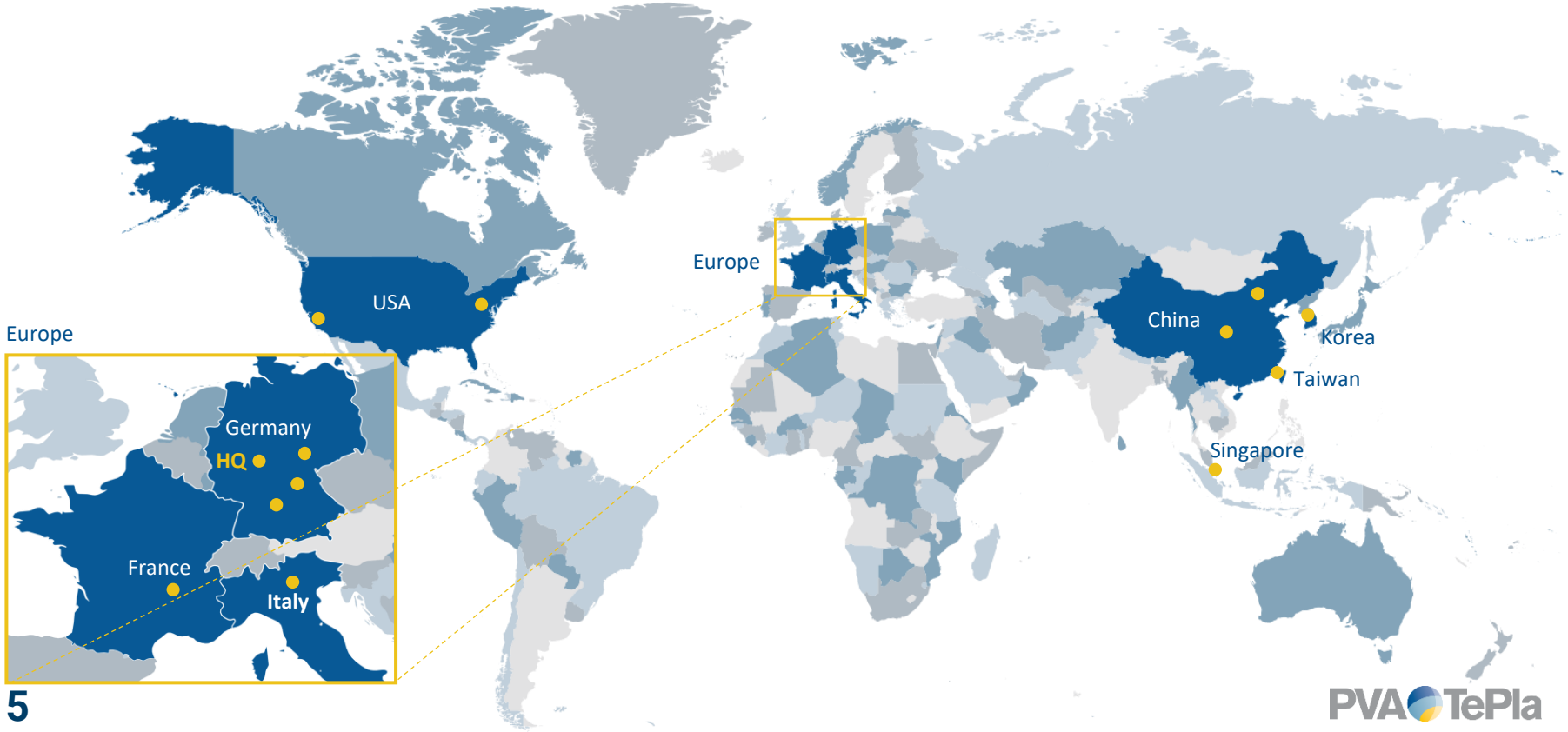
Well-positioned in key markets and regions that are the center of the economy of the future

Asset-light business model that focuses on core capabilities and ensures **agility** and **cost efficiency**

WE ARE DEEPLY EMBEDDED IN DIGITIZATION, MOBILITY, AND DECARBONIZATION

GLOBAL REACH WITH STRATEGIC PRESENCE

WORLDWIDE PRESENCE FACILITATES OUR GROWTH PLANS



HOW WE HAVE EVOLVED

WITH ORGANIC AND M&A-BASED GROWTH, PVA TEPLA HAS BECOME ONE OF THE GLOBAL LEADING SYSTEM ENGINEERING COMPANIES

1991
Foundation:
Synthesis
Joining
Refining

1999
Acquisition:
Synthesis
(Crystal Growing)

2000
Market entry:
USA

2002
Acquisition:
Metrology
(Optical)

2005
Market entry:
China
(Industrial)

2007-12
Acquisitions:
Metrology
(Acoustic &
Chemical)

2016
Market entry:
China
(Semiconductor)

2022
Market entry:
Korea
Acquisition:
Coating & Infiltration
Synthesis

2024
Foundation of
Technology Hub
as R&D Thinktank

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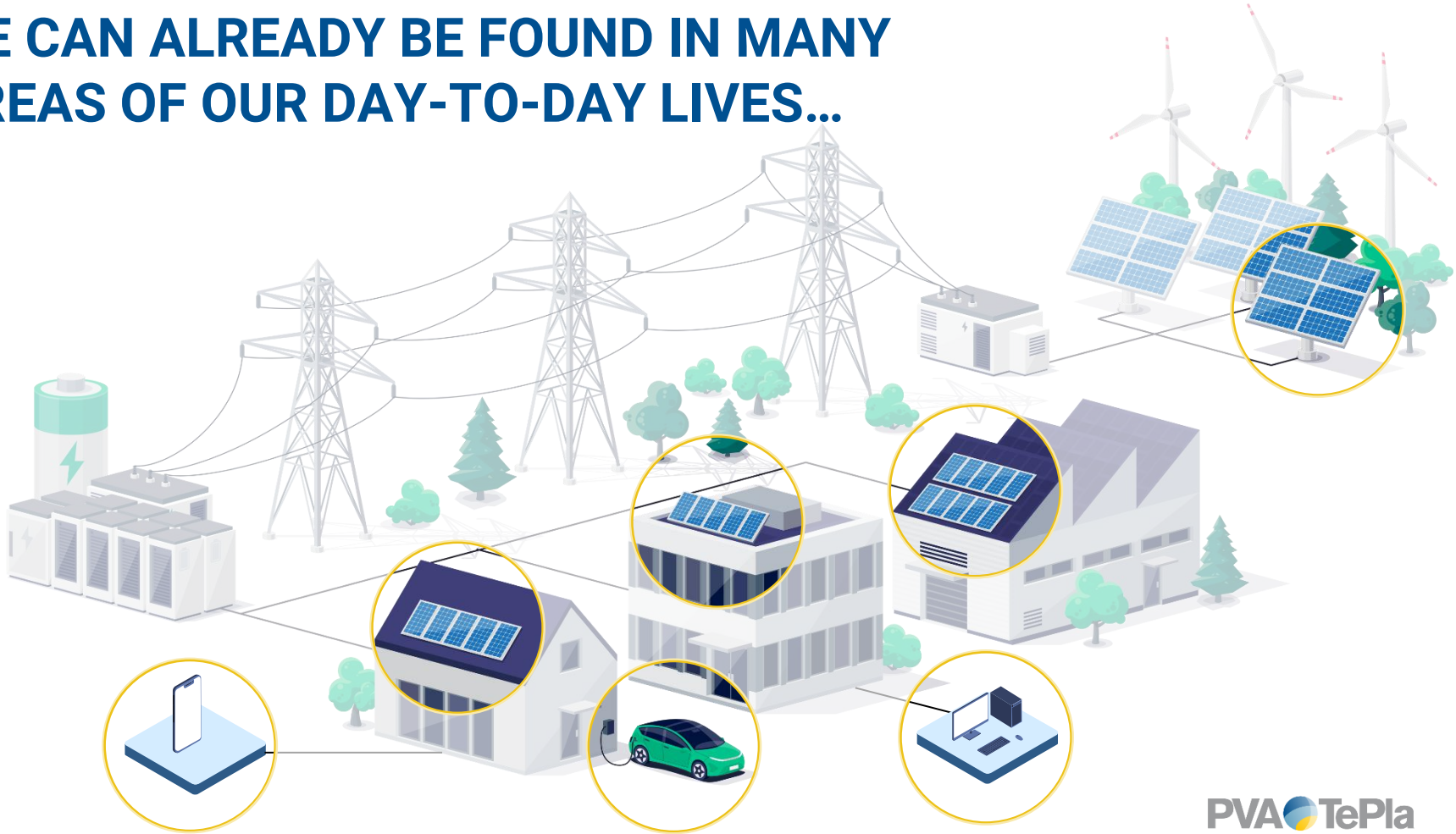
A TECHNOLOGY LEADER PRESENT IN EVERYDAY LIFE

WE CAN ALREADY BE FOUND IN MANY AREAS OF OUR DAY-TO-DAY LIVES…



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… AND ARE SUCCESSFULLY STEPPING INTO NEW SECTORS

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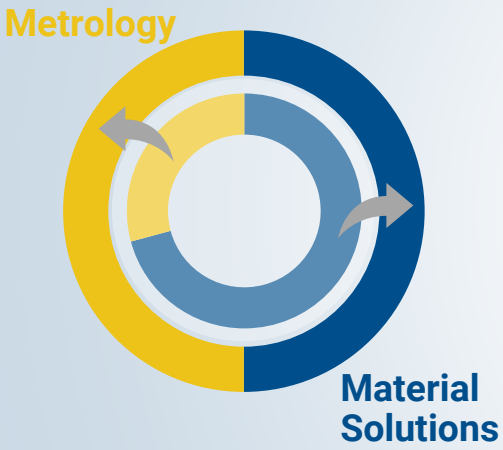
STRATEGY 2028

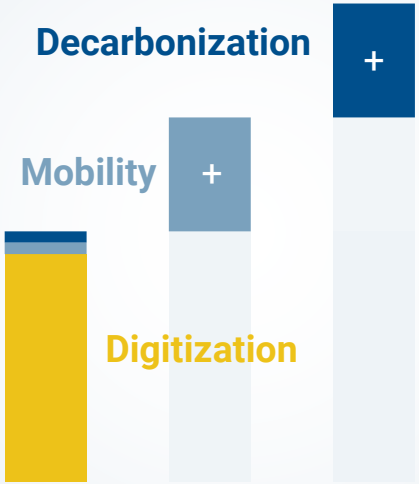
GROWING INTO BALANCED REVENUE STREAMS

TARGET:
DOUBLING SALES TO
€ 500 MILLION BY 2028

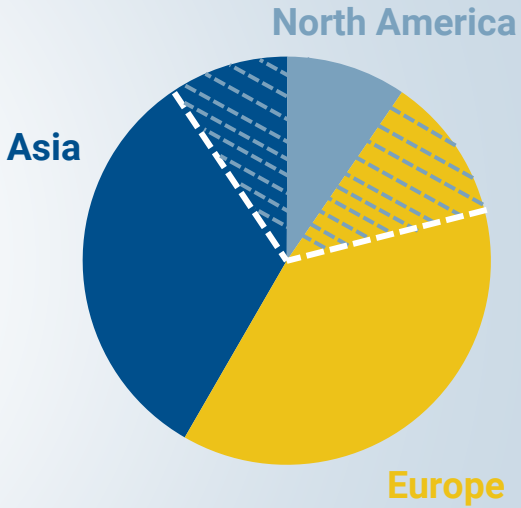
Technology Split



Growth Drivers



Regional Split



INVESTING IN INNOVATION AND STRATEGIC ORGANIZATIONAL DEVELOPMENT

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GROWTH STRATEGY

OUR PILLARS OF STRATEGIC DEVELOPMENT

PRODUCTS

MARKETS

REGIONS

INNOVATION

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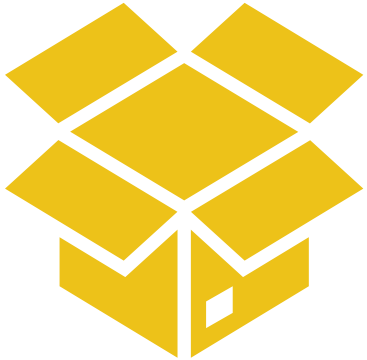


PRODUCTS

OUR BROAD PORTFOLIO OF INNOVATIVE SOLUTIONS

LEVERAGING SYNERGIES ACROSS INDUSTRIES AND MARKETS

MATERIAL SOLUTIONS


Synthesis


Joining

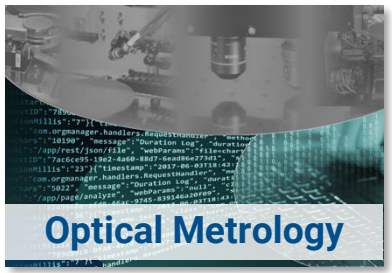

Refining


Surface Treatment

METROLOGY


Acoustic Metrology


Chemical Metrology


Optical Metrology

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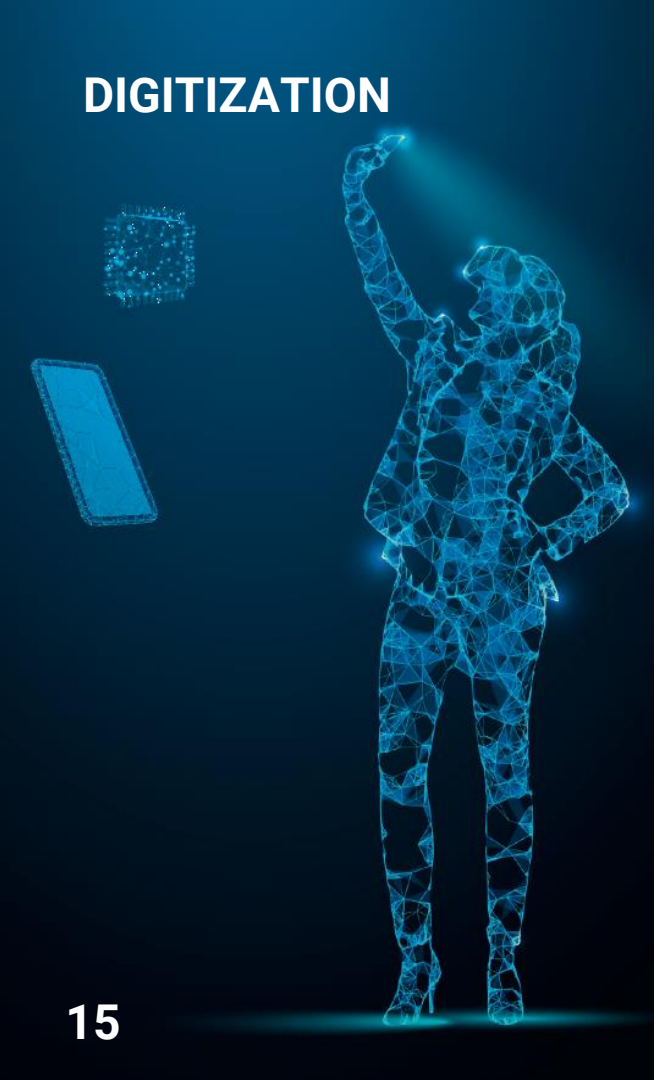
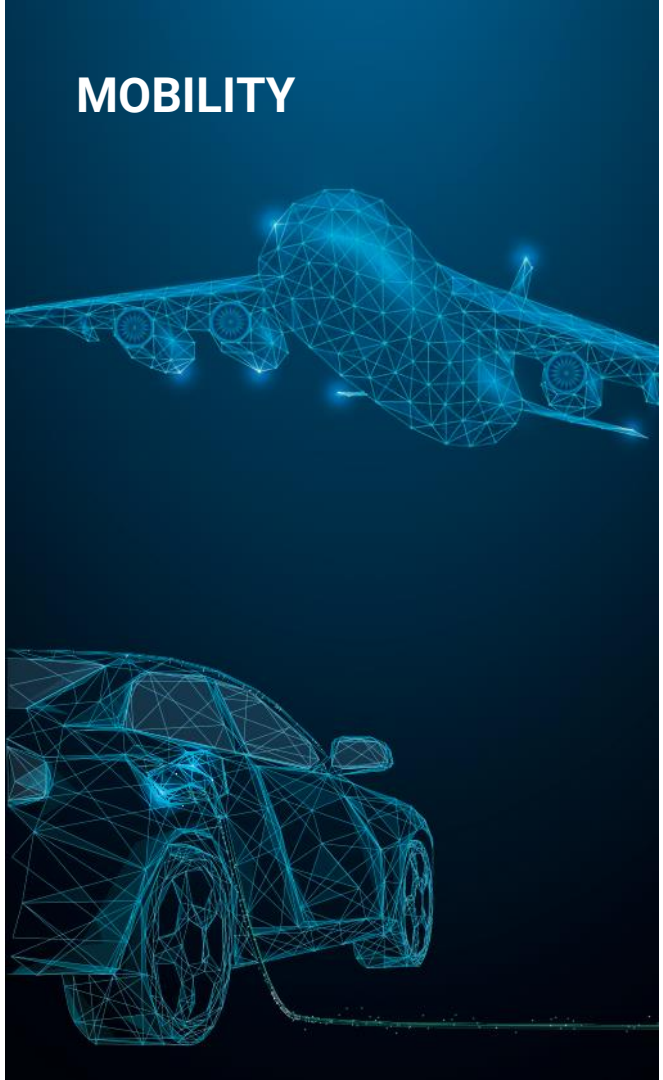
MARKETS





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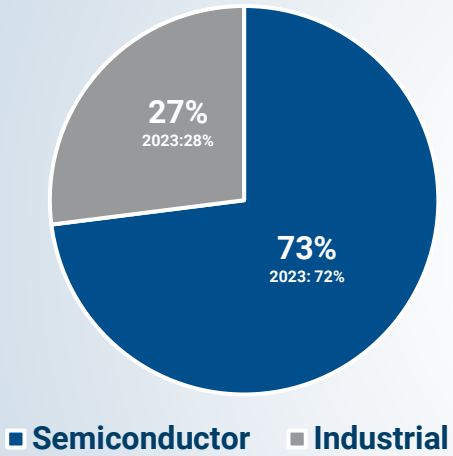
REVENUE SEGMENT SPLIT

STRONG GROWTH FROM MEGATRENDS

PVA TePla Revenue Segment Split 2023

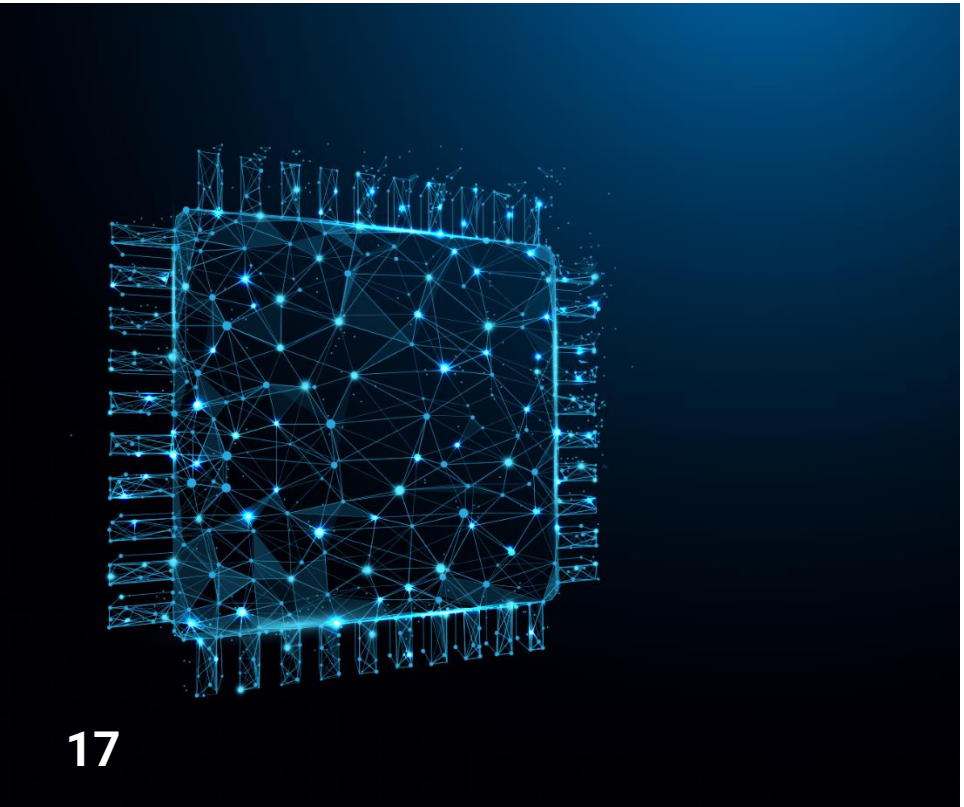
in %



- Sales in the Semiconductor segment mainly driven by **Digitization**
- Sales in the Industrial segment are primarily driven by the megatrends **Mobility** and **Decarbonization**

THE SEMICONDUCTOR MARKET

HOW PVA TEPLA IS INVOLVED IN THE MANUFACTURING PROCESS



MATERIAL SOLUTIONS

Synthesis:
- Si and SiC as base material for wafers and semiconductors

Joining:
- Diffusion bonding (functional components with complex structures)

Refining:
- Graphite purification (increasing life cycle of hot zones and wafer carriers)

METROLOGY
- Acoustic
- Chemical
- Optical

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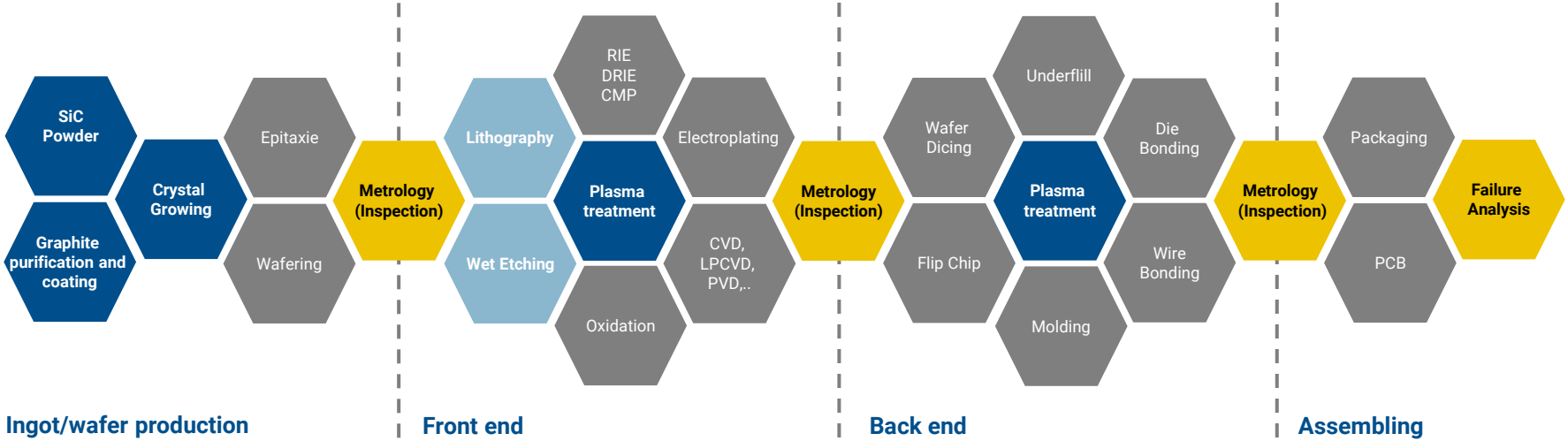
DEEPLY EMBEDDED AT KEY STAGES OF THE SEMICONDUCTOR VALUE CHAIN

PROVIDING LEADING SYSTEMS AND SOLUTIONS IN SYNTHESIS, JOINING, REFINING, SURFACE TREATMENT AND METROLOGY



- Material Solutions: Synthesis, Surface Treatment, Refining
- Metrology: Ultrasound, VPD, Laser, and Optical
- Material Solutions: indirect involvement through Joining and Synthesis technologies

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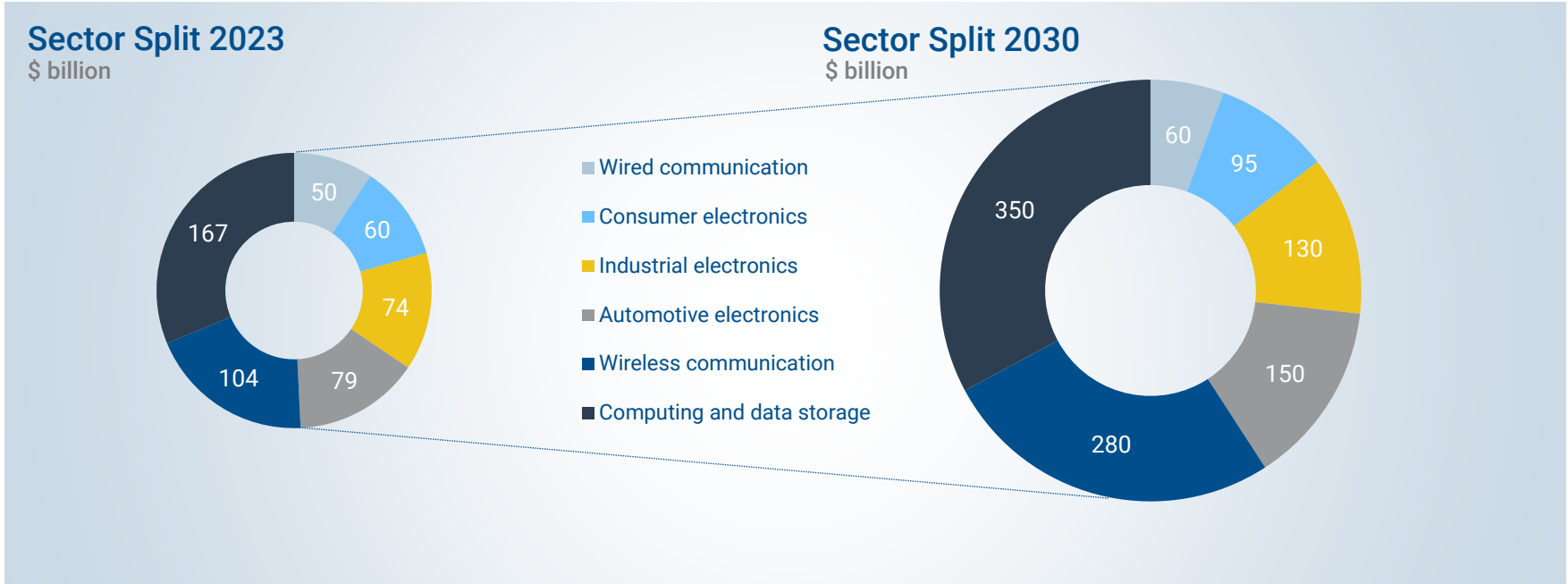
A CLOSER LOOK: THE SEMICONDUCTOR MARKET

SIGNIFICANT GROWTH IN RELEVANT HIGH-TECH SEGMENTS



TOTAL MARKET TO DOUBLE BY 2030

Sources: McKinsey, 2023; Statista, 2024

PVA TEPLA AND: MOBILITY

PROVIDING KEY COMPONENTS FOR THE MOBILITY OF TODAY AND TOMORROW

AUTOMOTIVE

MATERIAL SOLUTIONS

Synthesis:

- Si and SiC semiconductors (power modules, sensors)
- Powder synthesis (base material for batteries)

Joining:

- Diffusion bonding (heat exchanger for fuel cell technology)
- Brazing (bipolar plates for fuel cell technology)

METROLOGY

- Acoustic

AEROSPACE

MATERIAL SOLUTIONS

Synthesis:

- CMC (Ceramic Matrix Composites) for turbine air foils in the aviation industry
- CMC for heat shields for re-entry vehicles in the aerospace industry

METROLOGY

- Acoustic

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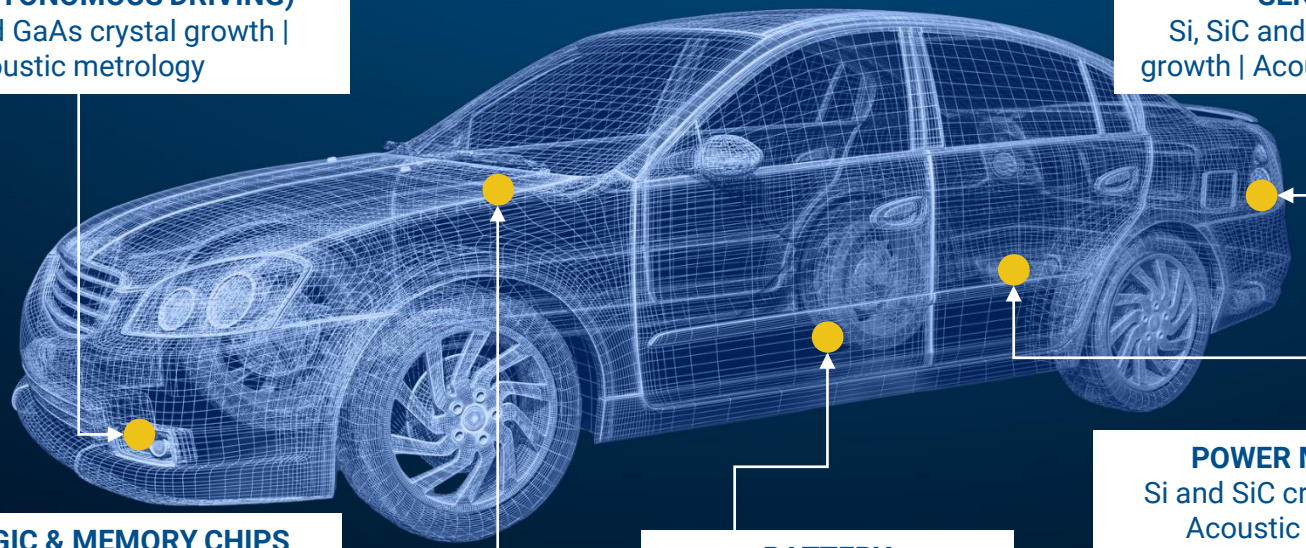
E-MOBILITY

PVA TECHNOLOGY IN KEY COMPONENTS FOR THE GROWING EV MARKET

With over 3,000 chips, the average EV has 5-6x as many chips as cars with internal combustion engines (ICE)



LiDAR (AUTONOMOUS DRIVING)
Si, SiC and GaAs crystal growth | Acoustic metrology

SENSORS
Si, SiC and GaAs crystal growth | Acoustic metrology

LOGIC & MEMORY CHIPS (E.G. ENTERTAINMENT)
Si crystal growth | Acoustic metrology

BATTERY
Powder synthesis | Acoustic metrology

POWER MODULES
Si and SiC crystal growth | Acoustic metrology

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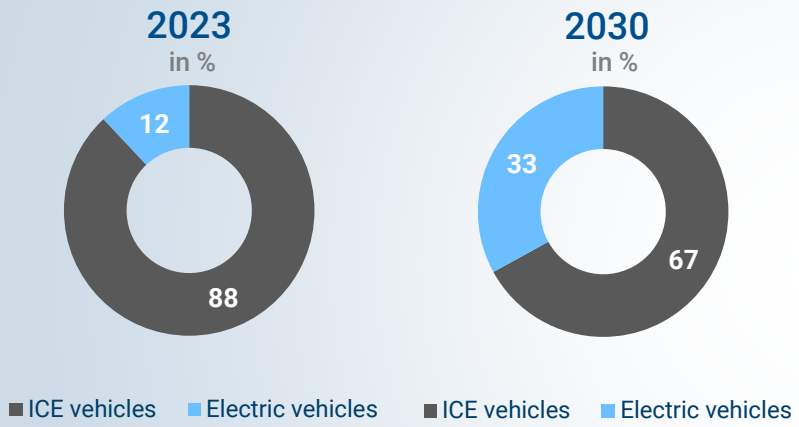
STRONG GROWTH OF ELECTRIC VEHICLES

ADDITIONAL POTENTIALS FROM AUTONOMOUS DRIVING AND HYDROGEN VEHICLES

Development of Electronic Vehicle Share



- Share of electronic vehicles to grow almost threefold by 2030 with a global market growth from $ 623 billion in 2024, **$ 907 billion** by 2028
- Hydrogen vehicle market: $ 3 billion in 2022 to **$ 33 billion** in 2032

Sources: Statista, 2024; Incorrys, 2024

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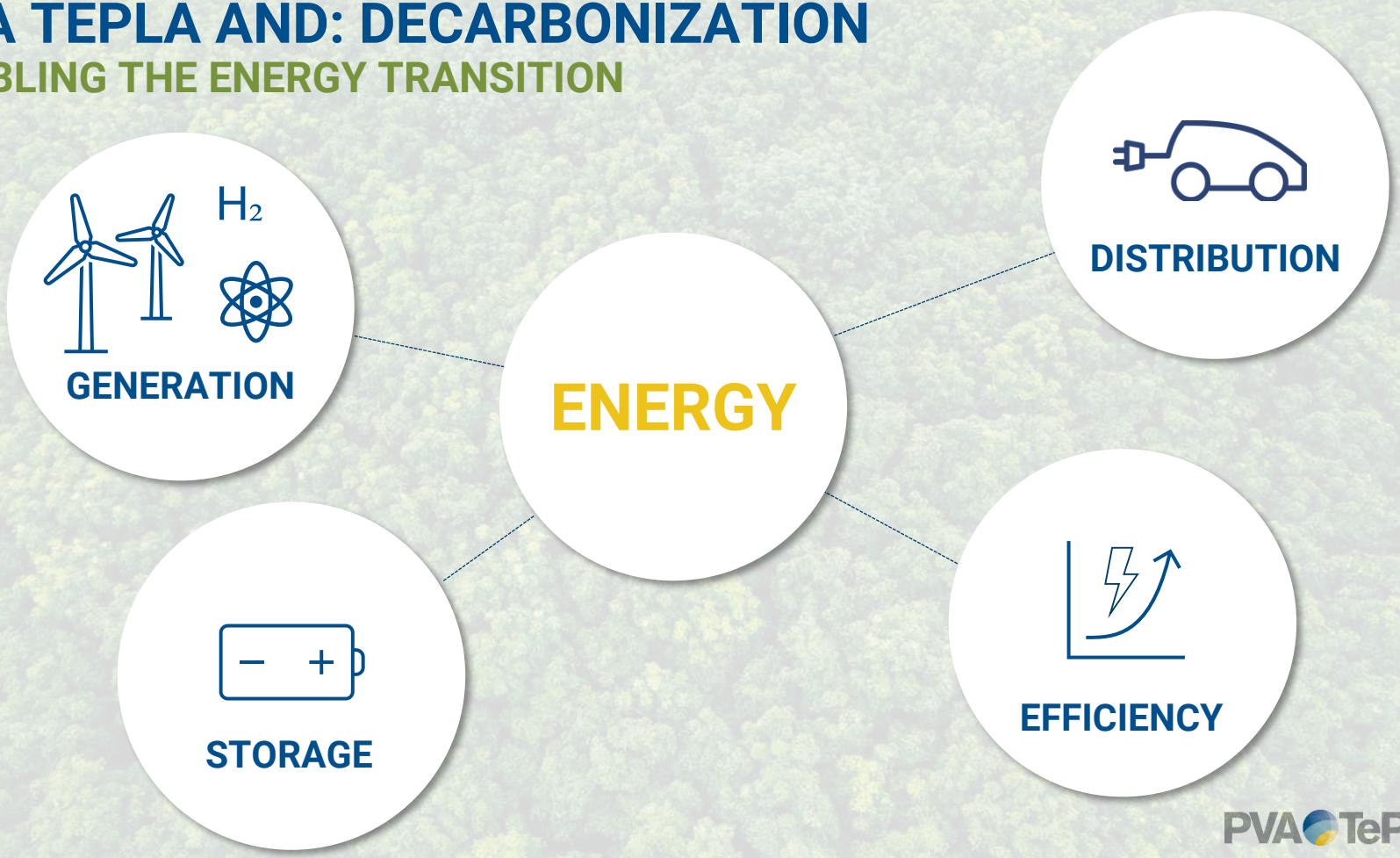
PVA TEPLA AND: DECARBONIZATION

ENABLING THE ENERGY TRANSITION



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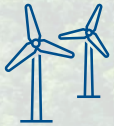
PVA TEPLA AND: DECARBONIZATION

GLOBAL INVESTMENTS ON THE RISE IN MULTIPLE SECTORS

We see a significant and steady **rise of global investments** in decarbonization projects – from energy generation to its distribution and storage. Examples include:

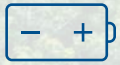


- Installed capacity for on- and offshore wind energy grows from 1,027 GW in 2023 to 2,034 GW in 2030
- Annual investment forecast of **$ 240 billion** by 2030

H_2

- Clean hydrogen market expected to reach 125-585 million tons per year by 2050
- Annual investment forecast of **$ 150 billion** by 2025

- Nuclear energy capacity projected to increase by 24% by 2030 from 371 GW to 460 GW
- Annual investment forecast of over **$ 100 billion** per year through mid-century



- Revenue along the battery value chain to grow from 85 billion in 2022 to over **$ 400 billion** in 2030

- EV charging station market in Europe alone: CAGR (2025-2030): **29%**
  $ 3 billion in 2030
- Transformers: $ 40 billion in 2023 to **$ 59 billion** in 2030
- Switchgears: $ 33 billion in 2023 to **$ 48 billion** in 2030

Sources: Frost & Sullivan, 2023; International Atomic Energy Agency, 2023; Nuclear Energy Institute, 2024; McKinsey & Company, 2023; European Commission, 2024; Statista, 2023; EUPD Research, 2023

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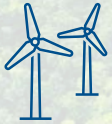
ENERGY GENERATION

POTENTIAL TECHNOLOGY APPLICATIONS IN ATTRACTIVE NEW MARKETS

GENERATION

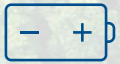


- Synthesis and metrology for SiC-based power modules

- Joining of components for hydrogen hydrolysis

- Synthesis (coating of nuclear fuel materials)

STORAGE



- Powder synthesis as basis for battery production and capacitators
- Joining of components for hydrogen liquification

DISTRIBUTION

- Joining of vacuum interruptors for power switchgears
- Joining of heat exchangers for hydrogen fueling stations
- Synthesis and metrology for SiC-based power modules for fast-charging stations

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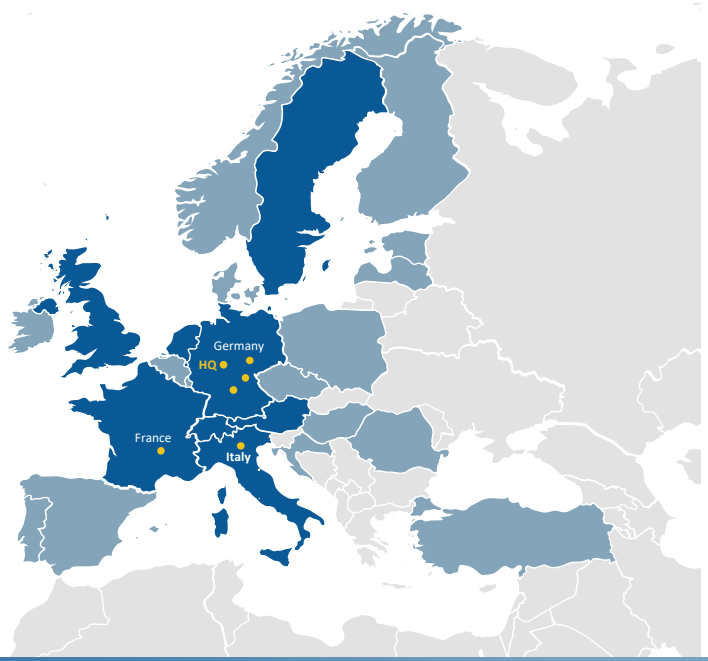
REGIONS

FOCUS ON: EUROPE

COMBINING HIGH-TECH PRODUCTION WITH CONTINUOUS INNOVATION

STATUS QUO

- Europe houses most facilities for manufacturing high-tech materials and products
- The region is also the center of innovation: Products and solutions developed in Europe are shipped to the entire world



FUTURE DEVELOPMENT

- Focus on strengthening our R&D capabilities, e.g. through the new Technology Hub
- Strengthen and expand existing partnerships with institutes and universities to attract new talents and develop new solutions for our customers

REGIONAL FOCUS: E-MOBILITY, DECARBONIZATION, AEROSPACE

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FOCUS ON: ASIA

SOLIDIFYING OUR STRONG FOOTPRINT

STATUS QUO

- Reactive, opportunist approach to new business
- Some markets have local sales and service teams that can work independently from Europe HQ

FUTURE DEVELOPMENT

- Establish a systematic and structured approach to all regional markets by increasing local service and sales capacities
- Further strengthen our local sourcing infrastructure
- Establish a 24/7 service concept

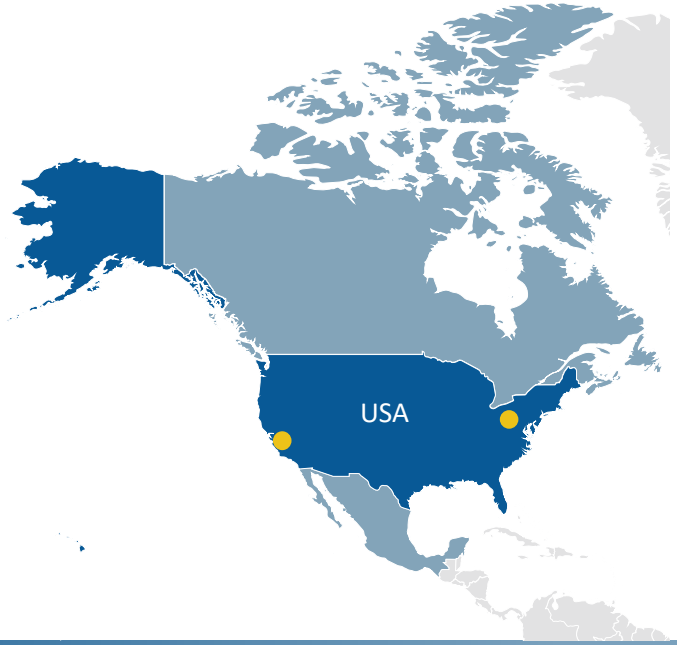
REGIONAL FOCUS: DIGITIZATION

FOCUS ON: NORTH AMERICA

STRATEGICALLY UNLOCKING A NEW GROWTH MARKET

STATUS QUO

- Reactive, opportunist approach to new business
- Minor production facilities for metrology and plasma technology
- Small sales and service team that needs support from Europe HQ on large projects



FUTURE DEVELOPMENT

- Establish a systematic and structured market approach by identifying key customers and their needs, increase sales organization
- Build an R&D showroom and expand partnerships with local institutions and universities
- Establish a 24/7 service concept

REGIONAL FOCUS: DIGITIZATION, AEROSPACE

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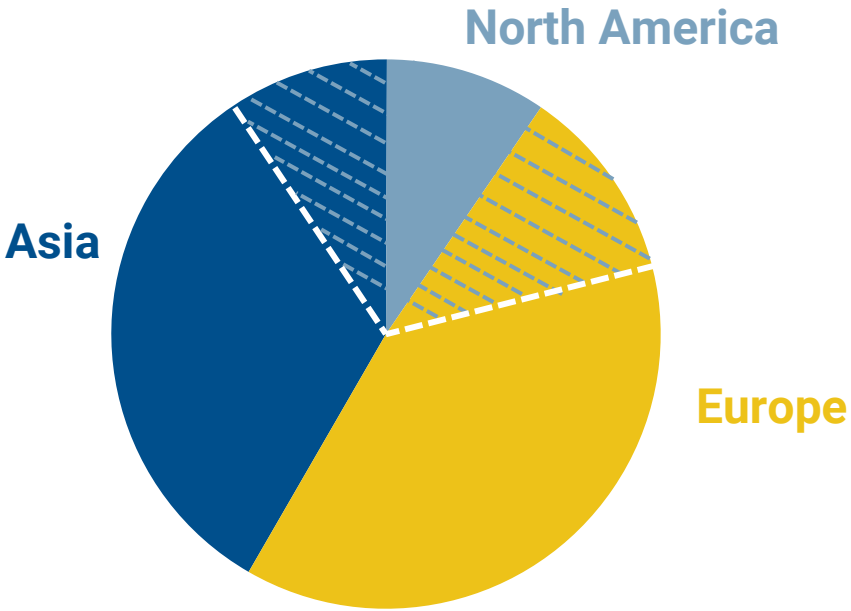
REGIONS

GROWING INTO BALANCED REVENUE STREAMS



ESTABLISHING A NEW EQUILIBRIUM BETWEEN OUR KEY REGIONAL MARKETS

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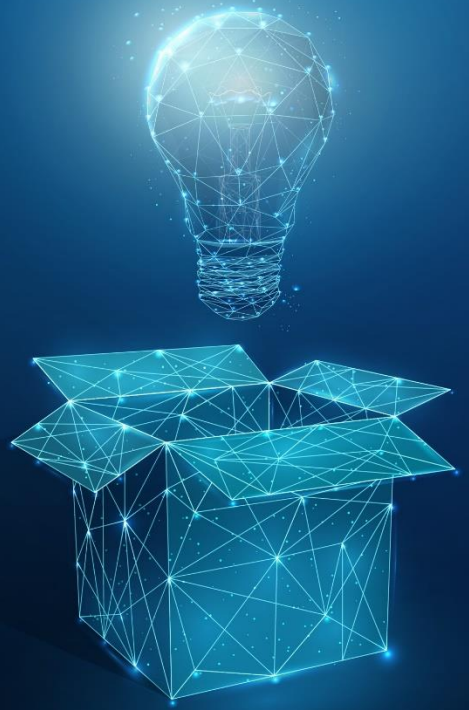
INNOVATION

INNOVATION WILL CONTINUE TO BE A MAJOR DRIVER OF OUR BUSINESS



We continue to allocate substantial funds into R&D and improve innovation management to become …

- faster
- more integrated
- more flexible
- more synergetic

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PVA TECHNOLOGY HUB

TRANSFORMING CUTTING-EDGE RESEARCH INTO INDUSTRIAL APPLICATIONS

- Initiated in 2023 as a continuation of the company's **evolution from a pure systems supplier to a comprehensive solutions provider**
- **Strengthening R&D capacities** to be equipped for future materials
- Strong focus **on synergies** between different **product categories**
- Initial focus on **Silicon Carbide (SiC)**

PVA TEPLA TECHNOLOGY HUB

OUR NEW R&D CENTER

PVA TePla

TAKING ADVANTAGE OF FAST-GROWING NEW MARKETS

WHY WE ACCELERATE OUR FOCUS ON R&D

Driving innovation is the key component of the future success of any industrial society and creates new opportunities for:

- Achieving climate neutrality
- The digital transition
- The circular economy
- Healthy food systems and sustainability
- The transition to renewable energy sources

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THE STORY SO FAR

LEVERAGING OUR INNOVATION AND ENGINEERING TRACK RECORD

PVA TePla has always employed bright minds in its business units who conducted leading research to solve specific customer problems.

However, this also meant that R&D mostly used to be customer-oriented and decentralized, with independent research teams at various sites.

IN SHORT:

So far, R&D at PVA TePla solved individual customer problems. Now we pursue a holistic approach.

MISSION STATEMENT

THE WORLD'S ONLY INSTITUTION OF ITS KIND

The Technology Hub strategically builds
an R&D pipeline by transforming cutting-edge research
into industrial applications in the shortest time possible
through the systematic integration of our technologies.

CENTRALIZING OUR INNOVATION EXPERTISE

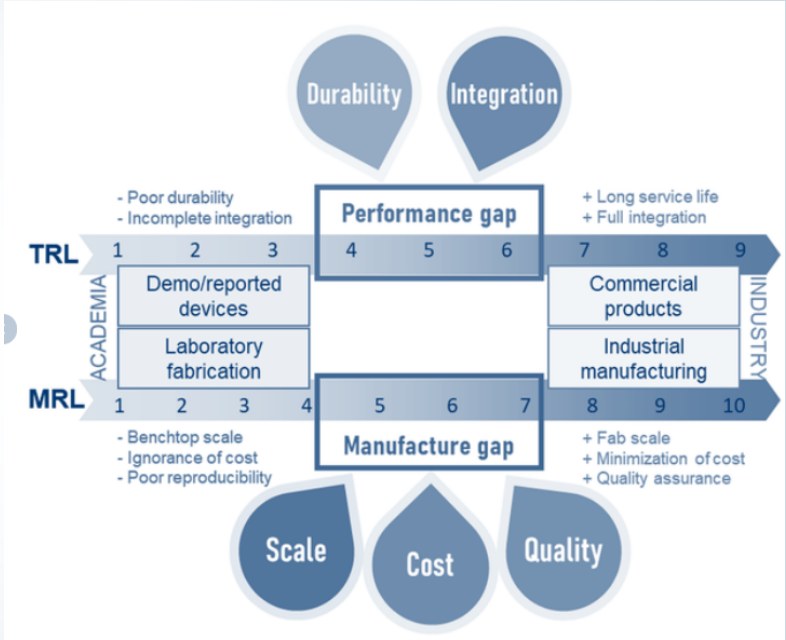
THE BUSINESS CASE OF THE TECHNOLOGY HUB

OUR NEW CENTER OF INNOVATION

- Founded in Q1 2024 to bridge the gap between fundamental research and industrial applications
- Bundles R&D capacities by leveraging synergies from PVA TePla's strong R&D ecosystem to create new products and production methods entirely owned by PVA TePla
- We profit from our experience with projects on the fringe of commercialization

THE TECHNOLOGY HUB WILL ALLOW US TO:

- Significantly reduce time to market
- Lower market introduction risks
- Develop comprehensive technology setups



Source: Luo et al., 2020, DOI: 10.1002/adma.202001903

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ORGANIZATIONAL OVERVIEW
STAFF, STRUCTURE, SOLUTIONS

STAFF

- Led by Materials Engineer Dr.-Ing. Jan Pfeiffer, who has already established a well-run and profitable center for joining technologies at PVA TePla
- Interdisciplinary team of physicists, chemists, material scientists, data analysts, and material technologists
- Regular staff of 15 FTE, supported by experts across our business segments on individual projects

STRUCTURE

- Working across business segments to methodically identify new materials and technology solutions
- R&D teams conduct the necessary research and map out the fastest path to commercialization
- Leveraging our strong network of national and international research partnerships
  (> 90 R&D partners with > 1,000 researchers)

SOLUTIONS

- We develop solutions that help users maximize the potential of PVA TePla systems – from materials to handling and processes
- Our goal is to provide a comprehensive technology setup including process know-how for our customers
  – Example: Silicon Carbide
- What's next: future materials created with different methods

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OUR INTEGRATED APPROACH TO NEW TECHNOLOGIES

PROVIDING COMPREHENSIVE TECHNOLOGY SETUPS

1

TECHNOLOGY & MATERIAL SCIENCE

New industrial processes require extensive theoretical and experimental groundwork. Using both original research and input from our technology segments, we meticulously test new materials and technologies for their suitability on an industrial scale.

2

PROCESS TECHNOLOGY & INDUSTRIALIZATION

In this stage between material science and application, we look for the optimal ways to rapidly transfer the research into industrial applications and plant engineering.

3

PLANT ENGINEERING

Complex materials and processes require sophisticated and robust plant technology. We see increasing demand for comprehensive technology setups and technology partnerships.

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TECHNOLOGY HUB SERVICE PORTFOLIO

PVA TEPLA AS TECHNOLOGY PARTNER

R&D	DESIGN	INDUSTRIALIZATION	PLANT ENGINEERING	PROCESS INTRODUCTION
				
Identification of suitable technologies & feasibility	Materials & geometric design	Development and qualification of processes, implementation in plant technology	In-house capacity, process sampling and scaling scenarios	Implementation of established processes after the installation of the system technology on site

OUR INTEGRATED APPROACH PROVIDES SOLUTIONS FOR ANY NEW MATERIALS

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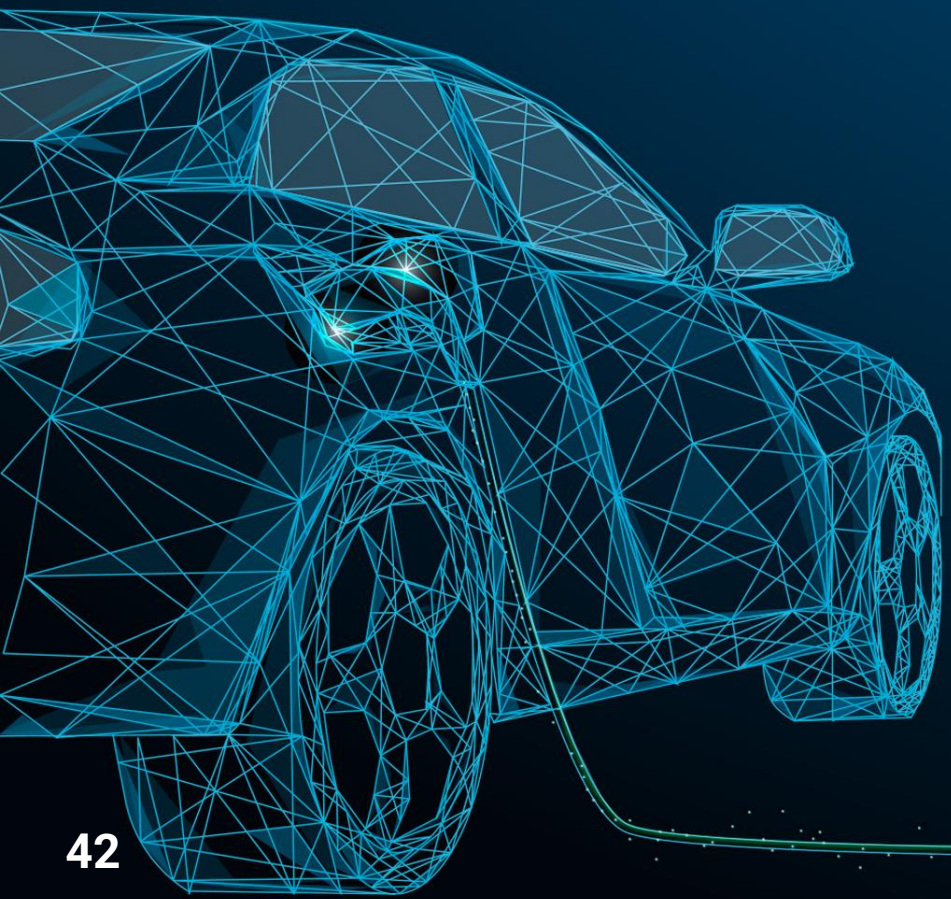

DEVELOPMENT

The Technology Hub is working intensively on comprehensive technology solutions.

One of the early projects is Silicon Carbide. This material of the future offers numerous advantages in high-performance applications, such as those required for 5G networks or the digitization of industrial processes.

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FOCUS ON SILICON CARBIDE

THE NEXT GENERATION MATERIAL

BENEFITS OF SILICON CARBIDE

- Reduced power losses, thus saving energy
- Higher heat resistance
- Greater efficiency for all energy transfer applications

RELEVANT PVA TECHNOLOGIES

- **Material Synthesis**
- **Metrology**
- **Refining**

SILICON CARBIDE PRODUCTION PROCESS

OUR CAPABILITIES AT THE TECHNOLOGY HUB

1	2	3	4	5
BASE MATERIALS	**PREPARATORY STEPS**	**CRYSTAL GROWING**	**CRYSTAL PROCESSING**	**ANALYSIS AND QUALITY**
Use of benchmark powders Production of own mixtures	> 100m² laboratory area with state-of-the-art clean room equipment > 100m² handling area for high-purity graphite	10 fully equipped crystal growing systems Dedicated infrastructure and media State-of-the-art computer simulation	Diamond grinding machines for grinding the crystals (setting the shape) X-ray machines for precise alignment Diamond saws for wafering	Established testing equipment (spectroscopy, resistance measurements, microscopy) All PVA metrology solutions will be qualified for Silicon Carbide

PVA TePla

DEEP DIVE: SILICON CARBIDE PRODUCTION PROCESS

FROM POWDER TO WAFER

SiC powder

PVT Growth (physical vapor transport)

SiC Boule

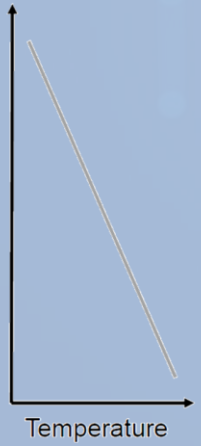
Grinding

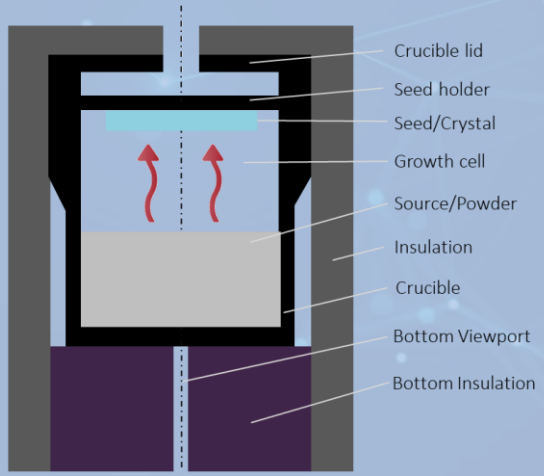
Puck

Wafering

Wafer

PVA SiCma





Orientation Values:

Temperature:	1,800–2,600 °C
Pressure range:	1 mbar
Growth period:	6 to 20 days
Carrier gas:	e.g. Ar

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PROJECT SILICON CARBIDE
PROJECTED TIMETABLE

Parallel developments:

- Powder synthesis
- Qualification of PVA metrology systems
- Improvement of crystal growing equipment
- Boule annealing

Q2 2024

Go-live of the lab factory with already developed 6” basic process

Q4 2024

Scalable 6”process

2025

30% reduced defect density (6”)
Start of 8” development

2026

50% reduced defect density (6”)

2026-28

Continuous yield improvements in terms of quality and size

PVA TePla

LOOKING AHEAD
THE TECHNOLOGY HUB IN 2028

LAB SPACE & STAFF
We will house more than 500 m² of laboratory space in Wettenberg and expect to double our staff to 30 FTE by 2026.

NEW MATERIALS
We already added new projects beside Silicon Carbide and are currently in the phase of identifying the most promising materials in terms of commercialization.

PARTNERS
We will expand our already extensive national and international research network of currently > 90 R&D partners from various industries, universities, and research centers.

PVA TePla

METROLOGY

INDUSTRY-LEADING SOLUTIONS FOR QUALITY ASSURANCE

PVA TePla

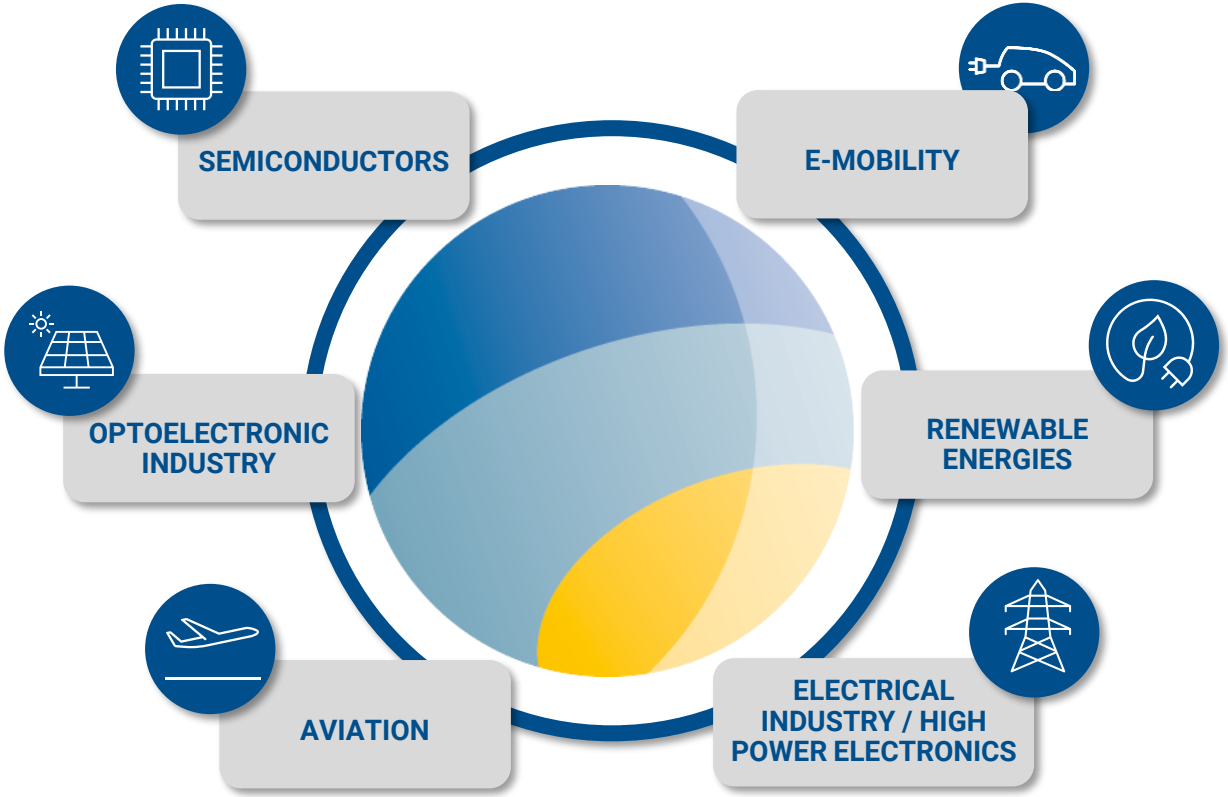
MISSION STATEMENT

INDUSTRY-LEADING METROLOGY SOLUTIONS

Increasingly complex production methods for high-tech applications require disproportionately more metrology. With our industry-leading systems, we enable our customers to perform on a reliably consistent high level of quality.

THE MARKETS WE SERVE

WE HAVE SUCCESSFULLY DIVERSIFIED OUR CLIENT BASE



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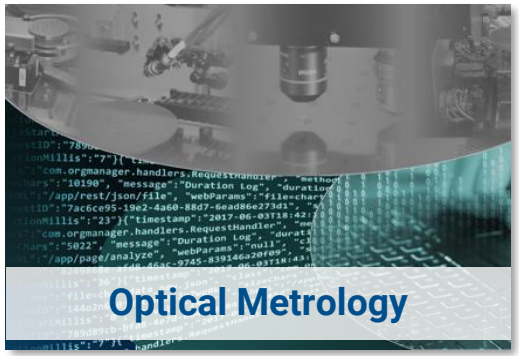
PORTFOLIO OF INNOVATIVE SOLUTIONS

METROLOGY SOLUTIONS FOR ALL ASPECTS OF MODERN INDUSTRY

Acoustic Metrology

Chemical Metrology



Optical Metrology

PVA TePla

ACOUSTIC METROLOGY

ULTRASOUND – NON-DESTRUCTIVE METHOD TO DETECT CAVITIES, VOIDS, BUBBLES, INCLUSIONS AND DELAMINATIONS

Major Drivers

- Growing market demand for high-performance components within areas like advanced packaging, hybrid bonding, and e-mobility
- Increasing requirements for non-destructive methods
- Focus on failure localization, especially in z dimension

Our Values

- Own design & production of transducers give highest resolution
- High level of automization using artificial intelligence
- Higher throughput due to multi-channel solution & dual gantry

CHEMICAL METROLOGY

VAPOR PHASE DECOMPOSITION IS A HIGH-PRECISION METHOD TO IDENTIFY CONTAMINATIONS IN SEMI-WAFERS

Major Drivers

- Growing market demand for high-performance Silicon wafers
- Higher requirements on contamination sensitivity
- Silicon Carbide and new wafer materials

Our Values

- Best-in-class contamination sensitivity
- High-performance cleaning process leads to less wafer contamination and down time
- Excellence in liquid handling

OPTICAL METROLOGY

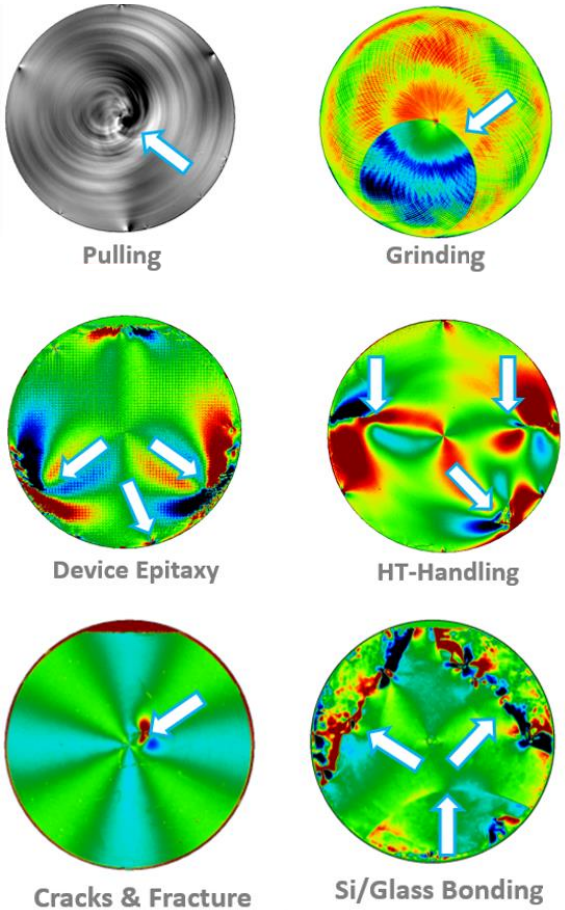
LASER – PHOTO-ELASTIC CHARACTERISATION OF SEMICONDUCTOR WAFERS AND DEVICES

Major Drivers

- Growing market demand for high-performance Silicon wafers
- Use of new materials within the semiconductor value chain

Our Values

- High level of precision in wafer stress and defect detection
- High level of automatization using artificial intelligence



PVA TePla

OUR COMPETITIVE EDGE

HIGH-TECH SOLUTIONS THAT CREATE VALUE FOR OUR CUSTOMERS

HIGH-TECH PRODUCTS

Our product portfolio comprises leading and critical metrology solutions for the semiconductor and other industrial manufacturing processes – with high resolution rates, speed, and accuracy.

EXPERIENCE & KNOW-HOW

Our customers profit from our substantial, decades-long experience in the industries we serve and the technologies and services we offer.

CREATING VALUE FOR OUR CUSTOMERS

We offer a high degree of automization with the use of artificial intelligence, which speeds up production processes, improves quality, and thereby lowers production costs.

MATERIAL SOLUTIONS

GENERATING AND PROCESSING HIGH-TECH MATERIALS

PVA TePla

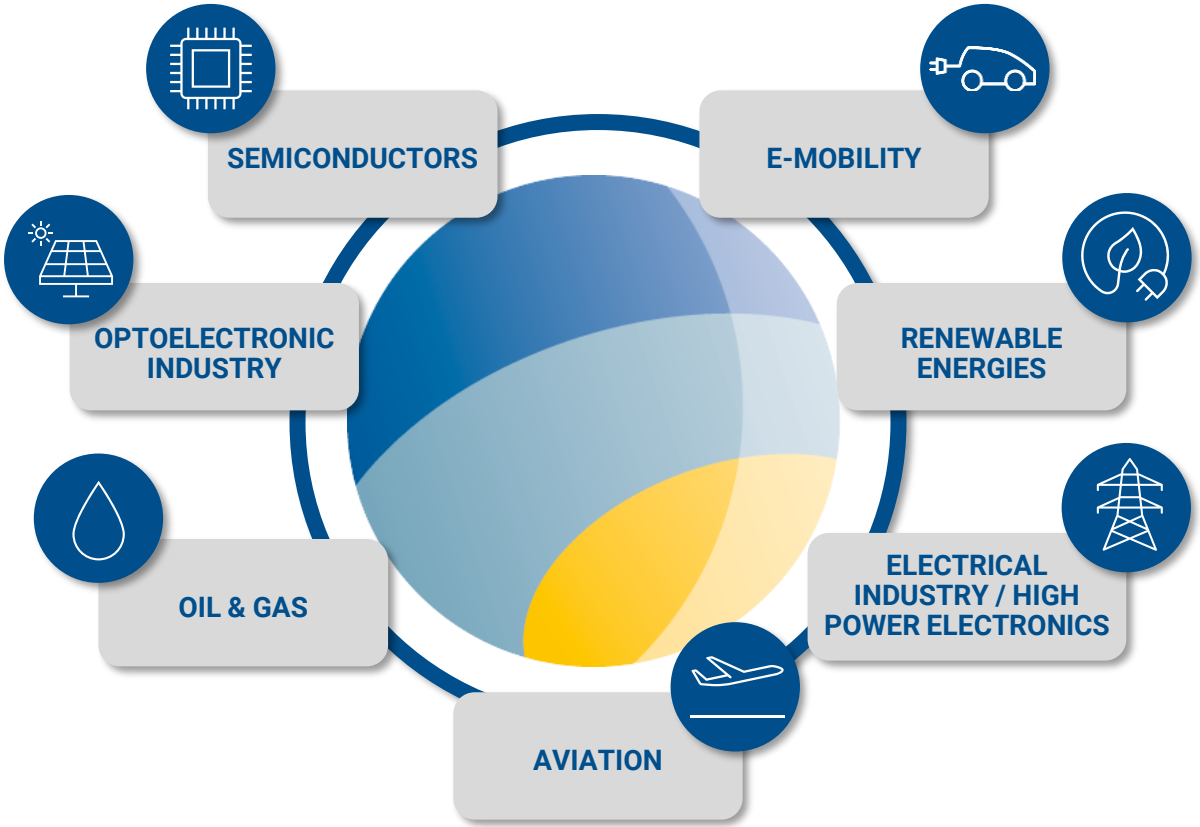
MISSION STATEMENT

WE ARE A CRITICAL MATERIAL SCIENCE FACILITATOR

We provide cutting-edge equipment and process technology for complex and highly sophisticated materials and materials combinations that shift the boundaries of technological capabilities.

THE MARKETS WE SERVE

WE HAVE SUCCESSFULLY DIVERSIFIED OUR CLIENT BASE



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PRODUCT PORTFOLIO

HIGH-TECH SYSTEMS PRODUCING THE TOOLS FOR TRANSFORMATION

Synthesis

- Crystal growing
- Chemical Vapor Deposition/Infiltration
- Sintering
- Powder synthesis

Joining

- Diffusion bonding
- Brazing

Refining

- Purification
- Heat treatment
- Degassing

Surface Treatment

- Passivation
- Activation
- Cleaning / stripping
- Plasma Nitriding

PVA TePla

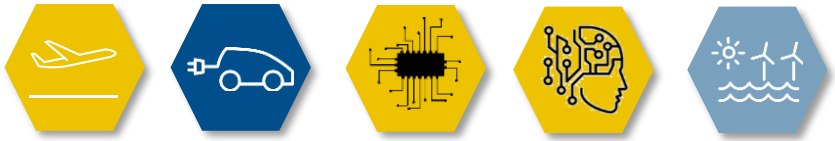
JOINING

SOLUTIONS FOR BONDING AND BRAZING

Leading edge systems for the creation of highly sophisticated joining bonds for highest demands

Diffusion bonding furnace with innovative multi-pillar pressing device and high-precision sensoric system for highest process control, optionally equipped with smart process software and process data base for repeatable highest joint quality

Key products and applications



H_2 technology (liquification)
Semiconductor industry
Heating industry

REFINING

SOLUTIONS FOR PURIFICATION

Thermo-chemical reactor for the purification of graphites to achieve highest-quality semiconductor standards

Ultra high-temperature furnace (> 2200°C) with halogen gas application including base process, that fulfills highest safety standards and most efficient processing

Key products and applications

Graphite for semiconductor applications (hot-zones, wafer carriers)

SYNTHESIS

SOLUTIONS FOR HIGH-TEMPERATURE CERAMIC MATERIALS SYNTHESIS

Chemical vapor deposition system for high corrosion and wear-resistant ceramic materials (CVD, CVI)

Thermo-chemical reactor with precursor gas application, including base process as comprehensive technology setup for Carbide synthesis (e.g. SiC, TaC)

Key products and applications

CMC turbine air foils for civil aviation, heat shields for re-entry vehicles in the aerospace industry

SiC and TaC coating of graphite components for semi applications

SYNTHESIS

SOLUTIONS FOR POWDER SYNTHESIS

Fluidized bed reactors for industrial scale production of synthetic graphite powder

Customized reactors with scalable working capacity for high-volume production that fulfill highest safety standards and process repeatability

Key products and applications

Anodes for battery and capacitor industry

DEEP DIVE CRYSTAL GROWING
MORE THAN JUST SILICON

Providing highly reliable crystal growth systems for the creation of various kinds of crystal materials from Silicon to complex compound materials that enable the technologies of the future.

DEEP DIVE CRYSTAL GROWING SYSTEMS

OVERVIEW OF TECHNOLOGY PORTFOLIO

TECHNOLOGY SOLUTIONS	Czochralski Pullers (CZ)	Floating Zone Systems (FZ)	Physical Vapor Transport Furnaces (PVT)	Vertical Gradient Freeze Systems (VGF)
PRODUCT MATERIALS	Semi-grade Silicon	High-Purity Silicon	Wide bandgap materials, e.g. Silicon Carbide	Indium Phosphite, Gallium Arsenide, Calcium Fluoride
APPLICATIONS	Semiconductors for: Logic, Memory, Artificial Intelligence	Power electronics, Radar applications	Renewable energies, E-Mobility	Data transfer / Communication, Optoelectronics

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DEEP DIVE CRYSTAL GROWING SYSTEMS

MEGATREND DIGITIZATION

Artificial Intelligence

- Artificial intelligence as current major driver for further development and demand for Silicon wafers for logic and memory chips.
- High-end lithography tools requiring Calcium Fluoride to enable the production of high-end chips.
- Increasing demand for fast data transfer and communication is driving demand for Indium Phosphide as well as Gallium Arsenide wafers.

Czochralski Crystal Puller

Logic **Memory**

PVA TePla serves the rising demand for silicon wafers by providing high end Czochralski crystal pullers to the industry

Vertical Gradient Freeze Furnace

Data Transfer / Communication **Lithography**

Vertical Gradient Freeze Systems to grow Indium Phosphide, Gallium Arsenide and Calcium Fluoride

DEEP DIVE CRYSTAL GROWING SYSTEMS

MEGATRENDS MOBILITY AND DECARBONIZATION

Green Energy

E-Mobility

- For decarbonization and the connected field of e-mobility, two key factors are energy efficiency and fast-charging capabilities.
- These requirements are driving the demand for high band-gap materials such as Silicon Carbide.
- Inverters based on Silicon Carbide substrates reduce power dissipation and therefore support a more sustainable future by increasing the efficiency of electric cars, batteries, solar cells, and wind turbines – to name a view examples.

Physical Vapor Transport Furnace

Floating Zone Crystal Puller

Inverters

PVT systems to grow SiC substrates for SiC MOSFETs that enable new dimensions in efficiency as well as substrates for GaN devices

Power

Besides SiC, Silicon and especially Silicon from Floating Zone Process remain important, as this process enables high purity and resistivity for power electronics

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DEEP DIVE CRYSTAL GROWING SYSTEMS

ADDITIONAL APPLICATIONS

Medical & Health

- Apart from the megatrends digitization, mobility, and decarbonization, crystal growth is also highly relevant in other fields, for instance in the field of medical and health.
- Silicon chips are used in a lot of medical equipment, but certain applications require specialized materials.
- Optoelectronical characteristics are for instance important in detecting technology, but also in the field of room disinfection.

Vertical Gradient Freeze Furnace

Tomography

State of the art computer tomography uses photon counting technology based on Cadmium Telluride grown with Vertical Gradient Freeze to create high resolution and colored scans.

Physical Vapor Transport Furnace

Disinfection

Aluminum Nitride grown with Physical Vapor Transport can be used for room disinfection as it creates UVC light that does not harm human skin but can destroy viruses.

DEEP DIVE CRYSTAL GROWING SYSTEMS

NEXT GENERATION SUBSTRATES

- Based on their special characteristics, there are several materials that have the potential to become key materials for the semiconductors of the future.
- The key is the development of growth technologies that enable sufficient crystal quality and size at economically viable production costs.
- The Crystal Growth and Technology Hub teams of PVA TePla continuously follow the latest developments and are always looking for collaborations with corresponding research institutes.

We closely follow the trends to identify new applications for existing materials or new materials that are on the verge of industrialization.

Examples are shown below:

Wide bandgap materials	Bandgap [eV]
Si	1.12
4H-SiC	3.20
Gallium Nitride	3.40
ß-Ga203	4.90
Diamond	5.50
Aluminium Nitride	6.00
c-BN	6.40

Sources: Jeff Y Tsao et al., 2017; Chi, Z et al., 2022

OUR COMPETITIVE EDGE

HIGH-TECH PRODUCTS, EXPERIENCE, AND CUSTOMER CENTRICITY

HIGH-TECH PRODUCTS

Our portfolio comprises leading technology solutions for every part of the modern industrial manufacturing process – from the production to the cleaning, purification, and coating of a host of different materials.

EXPERIENCE & KNOW-HOW

Our customers profit from our substantial, decades-long experience in the industries we serve and the technologies and services we offer.

CUSTOMER CENTRICITY

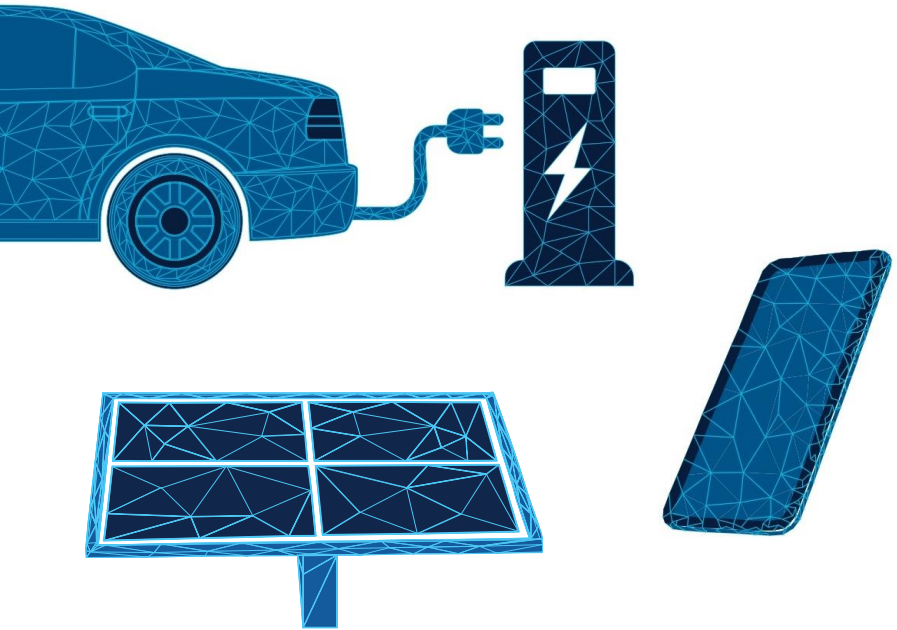
We offer both a high degree of automatization, which lowers production costs, but also design tailored solutions that fit the specific needs of our customers.

ESG

OUR APPROACH TO SUSTAINABILITY

PVA TePla

AGENDA



MEET PVA TEPLA'S ESG TEAM AND ITS MISSION

FOCAL POINTS IN THE SUB-AREAS M,E,S AND G

MEET PVA TEPLA'S ESG TEAM

WE BUILT UP A YOUNG AND STRONG TEAM

MICHAEL SCHUBERT

Head of Sustainability

01.01.2014

MARLENE DEITERSEN

Sustainabiliy Manager

01.11.2023

KIRA BUCH

Junior Sustainability Manager

01.08.2023

Environment

JOHANNA BUCHENAUER

Junior Sustainability Manager

01.08.2023

Social

TOBIAS REINECKE

Junior Risk & Compliance Manager

15.10.2023

Governance

OUR MISSION IN AN ESG CONTEXT

CLEAR FOCUS ON INNOVATION AND APPRECIATION

Markets and R&D

We diversify into markets that make a difference towards a more sustainable world.

With innovation!

Through appreciation!

To success!

Social

We foster an appreciative corporate culture that motivates our employees.

ADDITIONAL FOCUS ESTABLISHED WITH MARKETS AND R&D

ESG STRATEGY CORNERSTONES

COMMITTED TO SUSTAINABILITY

Net carbon neutral
by 2024 (Scope 1+2)

- Reduce greenhouse gas emissions and pollutants
- Focus on reducing, reusing, and recycling waste, supporting a circular economy

- Focus on markets and products for energy efficiency and better environmental performance
- Develop innovative solutions for future challenges

- Focus on employee satisfaction and positive work environment
- Promote workforce diversity

- Promote sustainability throughout value chain
- Suppliers to meet environmental and social standards

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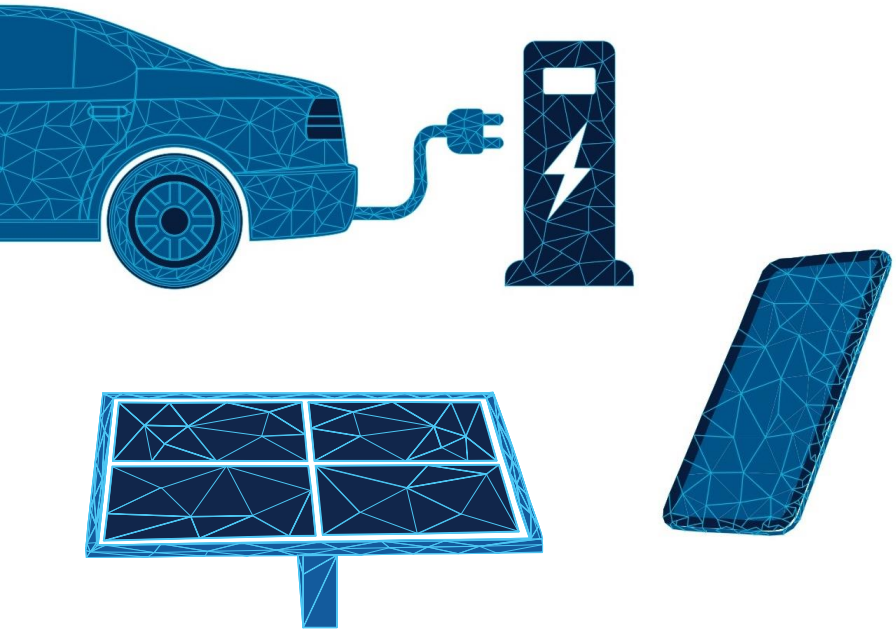
AGENDA



MEET PVA TEPLA’S ESG TEAM AND ITS MISSION

FOCAL POINTS IN THE SUB-AREAS M,E,S AND G

MARKETS, RESEARCH & DEVELOPMENT

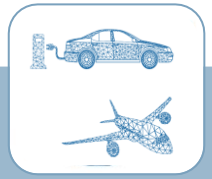
CONTRIBUTING TO A MORE SUSTAINABLE WORLD THROUGH R&D

We respond to rapid technological progress and an ever-increasing number of applications that require **more and better semiconductors**

DIGITIZATION

We develop highly innovative solutions for the **generation, storage and conversion of green energy**

DECARBONIZATION



We enable **modern mobility solutions** to make the transportation of people and goods as efficient and sustainable as possible

MOBILITY

MARKETS, RESEARCH & DEVELOPMENT

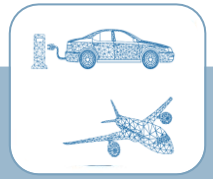
EXAMPLES OF R&D PROJECTS

Crystal growing systems used in the development of **high-tech chips** for server solutions, the IoT and 5G

DIGITIZATION

System for brazing high-voltage switchgears in the **power distribution of wind** farms, **replacing SF6 gas** with climate-friendly vacuum technology

DECARBONIZATION

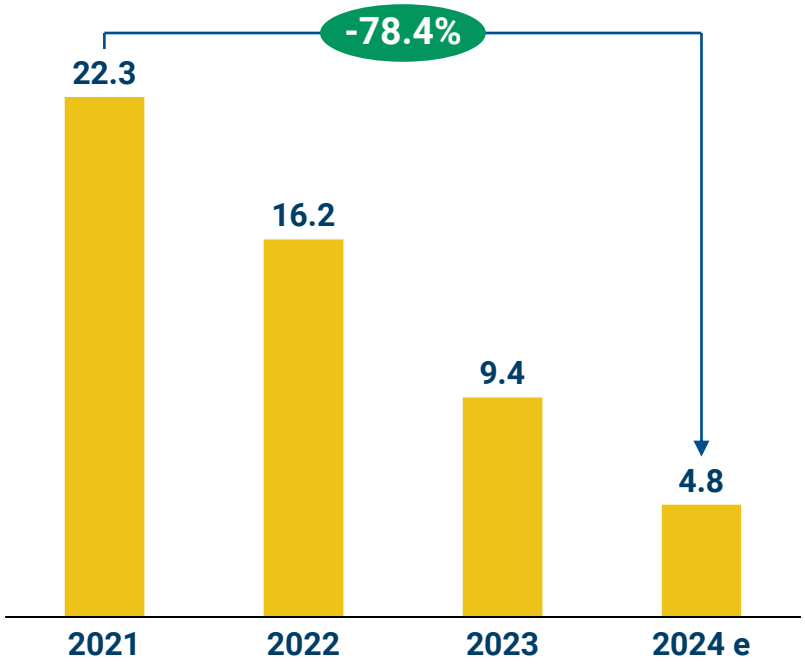


Brazing technique for ceramic substrates as circuit carriers for high-performance electronic components **for rapid charging electric vehicles**

MOBILITY

ENVIRONMENT

ON TRACK WITH OUR CARBON NEUTRALITY GOAL FOR SCOPE 1 AND 2



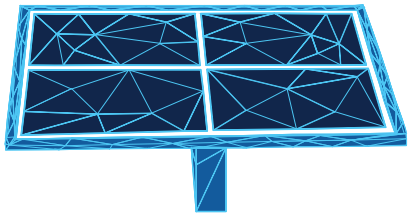
[tons CO_2 equivalent per EURm]

- Our sales increase ~20% (CAGR 21-24) from 155,7 EURm to expected 270 to 290 in 2024
- Despite this strong growth we reduce our Scope 1 and Scope 2 emissions since 2021 from 3,473 tons CO_2 equivalent to 2,479 tons in 2023 and expect further reduction to 1,300 tons in 2024.
- This leads to a reduction of ~40% CAGR in relation to sales
- **Strong reduction achieved by installing solar systems, recovering waste heat and using green electricity at the main production sites.**

PVA TePla

ENVIRONMENT

EXPANSION OF PHOTOVOLTAIC SYSTEMS



- Investment:
  € 1.7 million
- New installed power:
  ~1.300 kWp
  ~1.300 mWh pa
- Share of solar power in total consumption:
  ~ 20%
- CO_2 avoidance per year:
  600 metric tons

Jena

Wettenberg

Source: Google Earth

SOCIAL

WE AIM FOR APPRECIATION, EMPLOYEE SATISFACTION, AND DIVERSITY

Diversity

Gender

Cultural diversity

Demography

KPI

Inclusion

Infiltration

Appreciation

Every employee contributes to the success of the company by creating a respectful and equal working environment.

Employee satisfaction

KPI development

Employee survey

Measures

PVA TePla

FINANCIAL PERFORMANCE AND ORGANIZATION

Capital Markets Day 2024

MID-TERM GOAL: DOUBLING SALES BY 2028

STEERING THE WHOLE GROUP INTO SUSTAINABLE GROWTH

SALES TARGET:

EUR 500 MILLION

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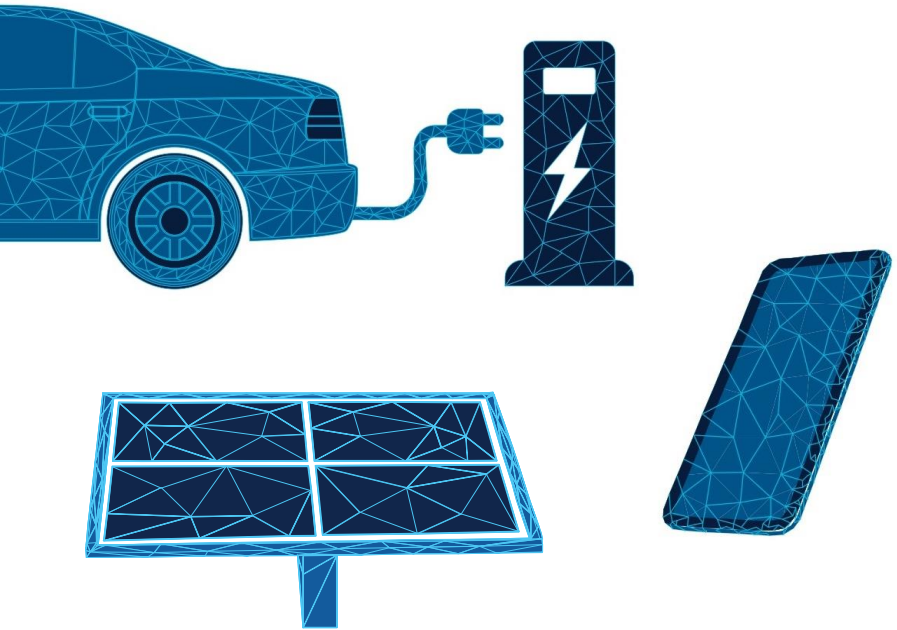
AGENDA



FY 2023 AND Q1 2024 HIGHLIGHTS

BUILDING ON A STRONG TRACK RECORD

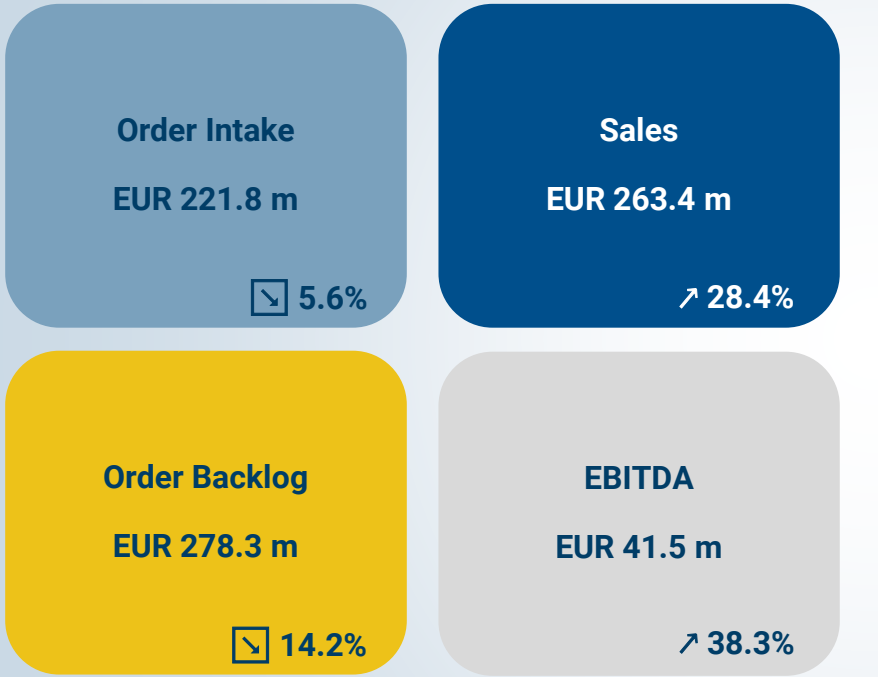
ORGANIZATION

PERSPECTIVES

PVA TePla

VERY SUCCESSFUL YEAR 2023

STRONG GROWTH



- Sales, EBITDA and EBITDA-Margin at all time high
  - High double digit growth rate in last 2 years
  - Guidance exceeded again
- **Order intake** at a sound level with further **diversification** of order book and broadening customer base taking effect
- Intensification of investments in **workforce, capacity, innovation, and infrastructure** to support sustainable future growth: Capex at EUR 11.7 m, R&D costs EUR 9.5 m (+3m → +45%)
- Further milestones of **ESG strategy** achieved

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HIGHLIGHTS Q1

GOOD START INTO 2024

- **All in all on track towards guidance**
  - **5% growth in revenue**
  - **Margin improvement** on track
- **Metrology business** with strong growth in Q1
- Higher investment level: **Capex at EUR 3.7 m** with focus on property and building
- Tech Hub **fully established**

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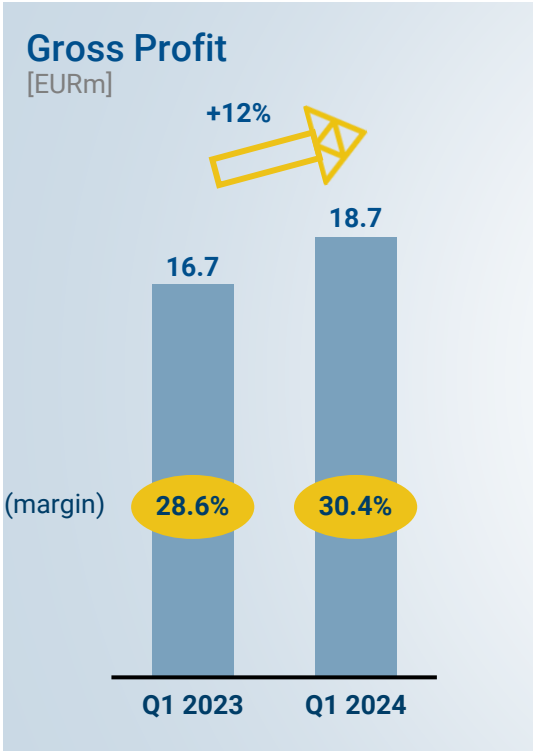
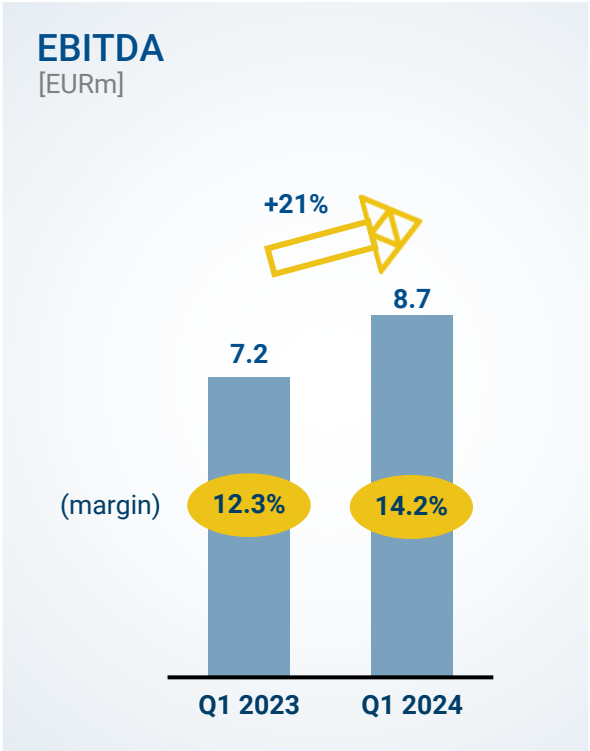
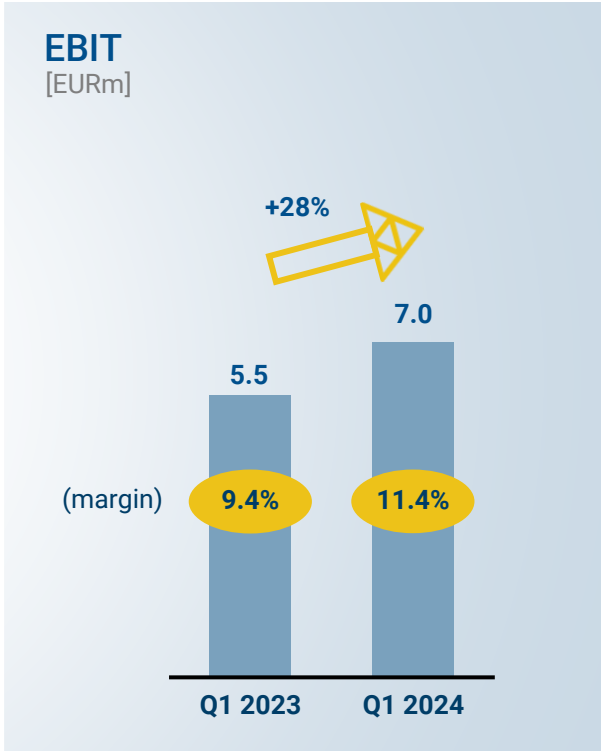
STARTING INTO 2024 WITH STRONG MOMENTUM

KEY FIGURES Q1 2024



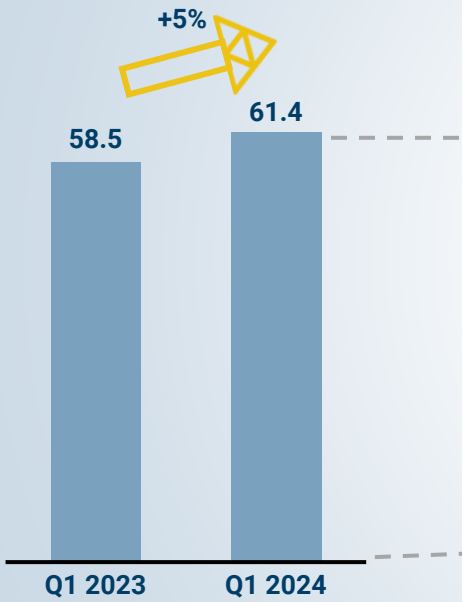




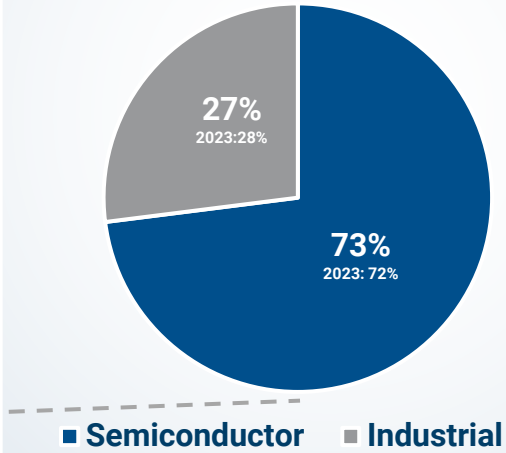
GROUP SALES Q1 2024

START INTO THE FY IN LINE WITH EXPECTATIONS

Year on Year
[EURm]



Segment Split
[EURm]

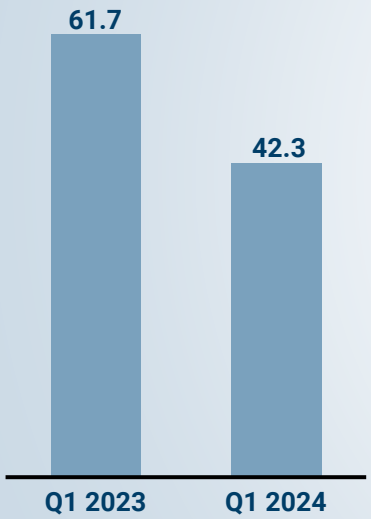


- Increasing share of **metrology systems**
- We become **less dependent** on specific sector cycles by **generating revenue from a variety of sectors**

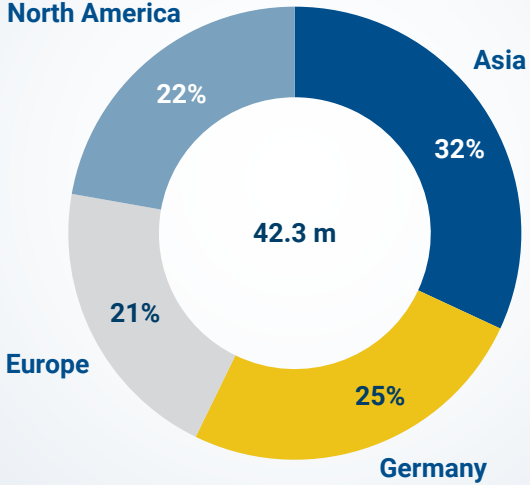
ORDER INTAKE Q1 2024

REFLECTS TEMPORARY WEAKNESS OF THE SEMICONDUCTOR INDUSTRY

Year on Year
[EURm]



Region
[EURm]



- **Order intake at EUR 42.3 m,** strong demand from decarbonization and mobility, semiconductor remains weak
- Well diversified order book: **Asia 32%, Germany 25%, Europe (ex-Germany) 21%, North America 22%**
- **Semiconductor** contributes **58%** of orders, **Industrial 42%**

PVA TePla

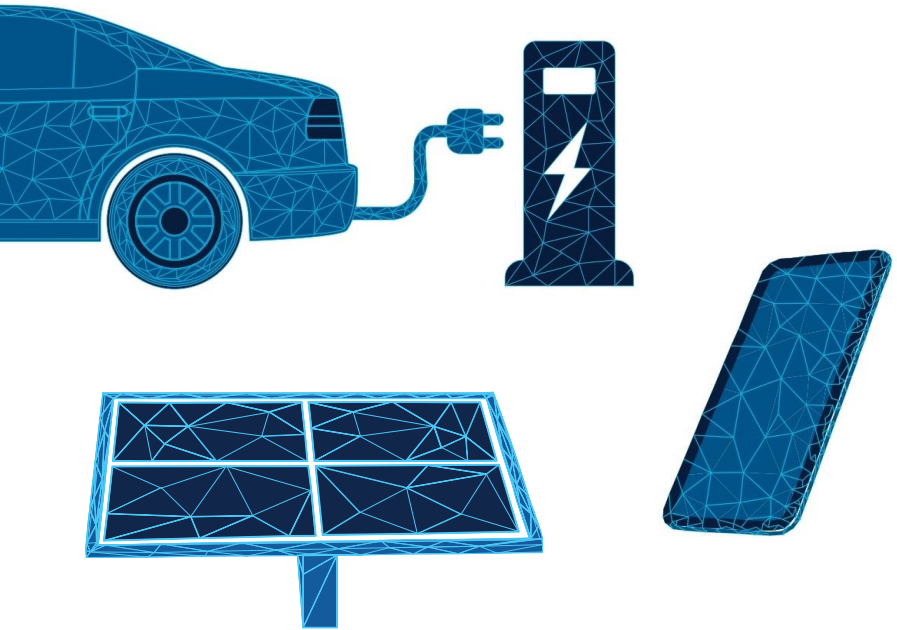
FINANCIAL GUIDANCE

SHORT-TERM GUIDANCE CONFIRMED

2024/2025

- FY2024 sales target between EUR 270 m and EUR 290 m with earnings before interest, tax, depreciation and amortisation (EBITDA) ranging from EUR 47 m to EUR 51 m
- 2025 is expected to continue to grow at a similar level

AGENDA



FY 2023 AND Q1 2024 HIGHLIGHTS

BUILDING ON A STRONG TRACK RECORD

ORGANIZATION

PERSPECTIVES

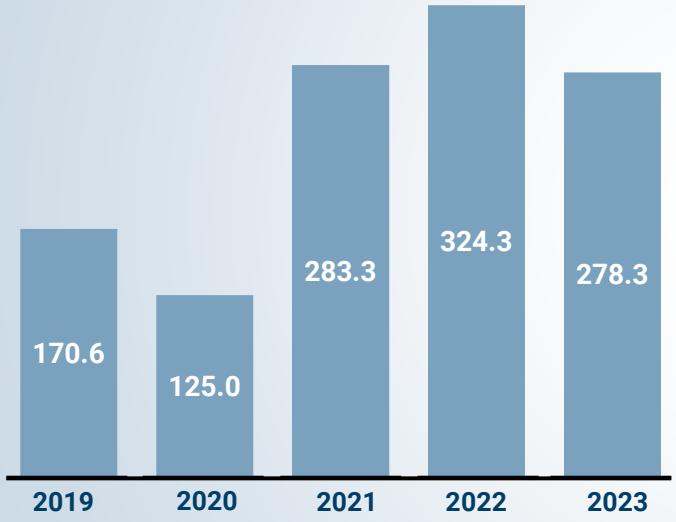
PVA TePla

PVA 5-YEAR PERFORMANCE

SUSTAINABLE TRACK RECORD OF GROWTH

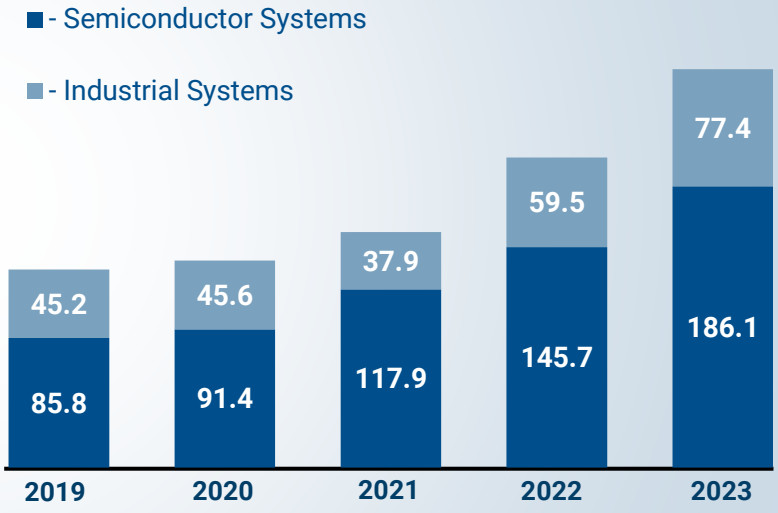
Order Backlog Development

[EURm]



Sales Development

[EURm]



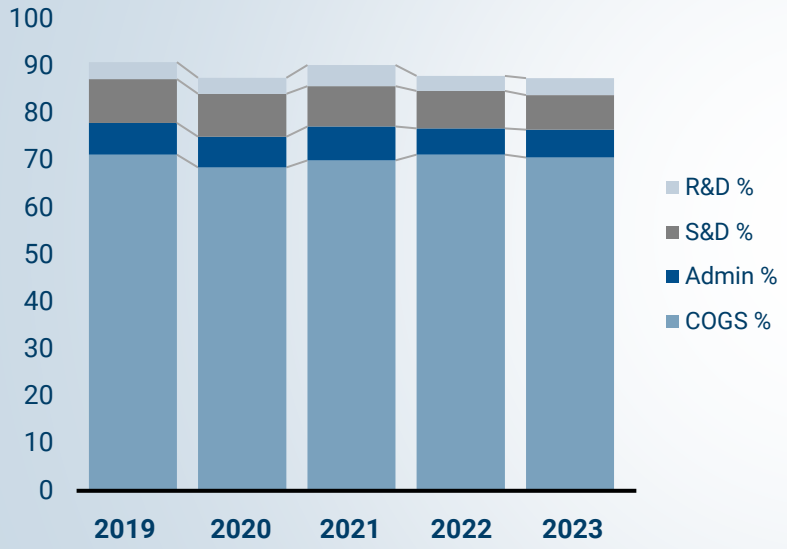
PVA TePla

PVA 5-YEAR PERFORMANCE

SOLID PROFITABILITY DRIVEN BY WELL-MANAGED COST BASE

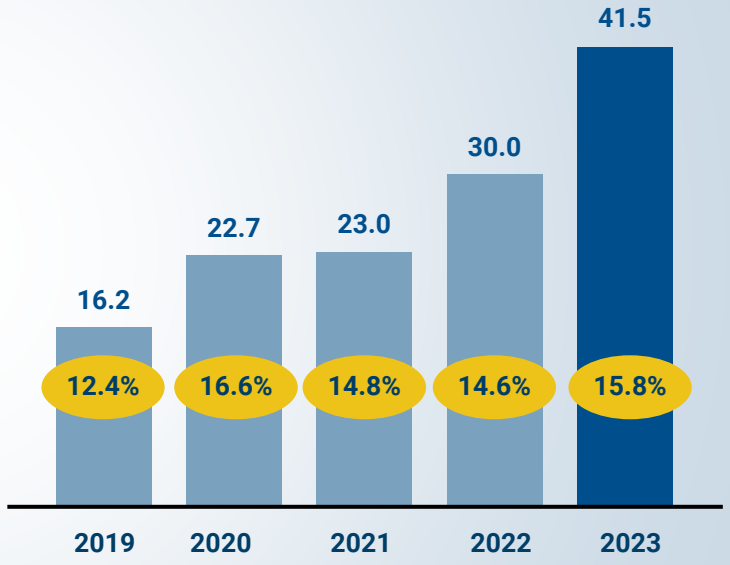
Cost Ratios Development

[in % of Revenues]



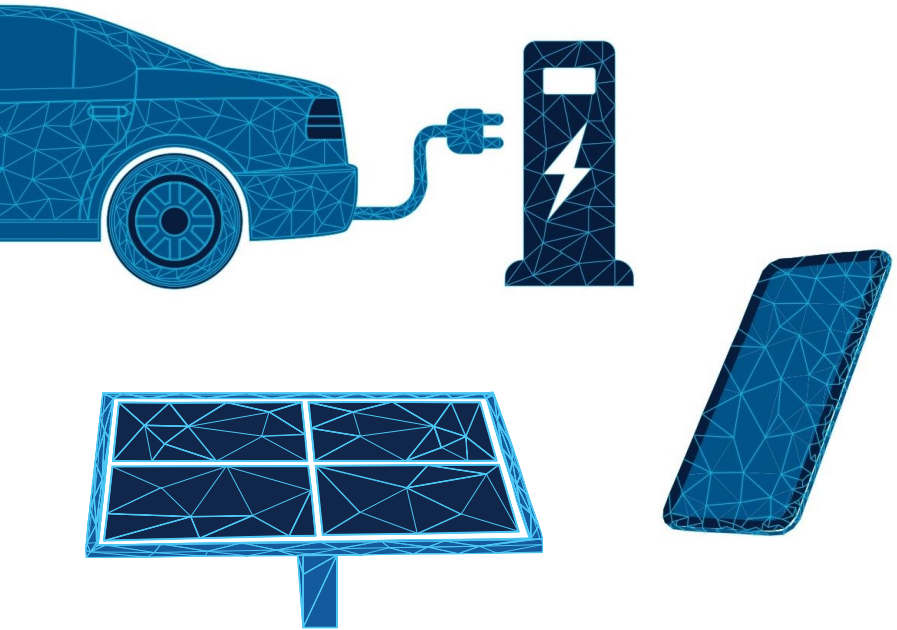
EBITDA Development

[EURm]



PVA TePla

AGENDA



FY 2023 AND Q1 2024 HIGHLIGHTS

BUILDING ON A STRONG TRACK RECORD

ORGANIZATION

PERSPECTIVES

PVA TePla

OUR MISSION

PURSUING SUCCESS TOGETHER

With innovation!

Through appreciation!

To success!

GREAT SUCCESS IS BASED ON SKILLED AND MOTIVATED TEAMS ON ALL LEVELS

ORGANIZATIONAL STRUCTURE

WE ARE PREPARING FOR GROWTH

777

# of employees today

>1,000

# of employees 2028

- Comprehensive people development program: “Together into the Future“
- Focus on internal qualification, training, and succession planning

OUR RECRUITMENT APPROACH

COLLABORATION WITH ACADEMIC INSTITUTIONS

- We will take a more international approach to recruitment
- Centralized international search programmes
- High management approach already in early stage
- Targeted approach of universities with relevant expertise
- University cooperations (from local to international)
- Training and education centre to be established

PVA TEPLA'S MANAGEMENT BOARD

LEAN BOARD STRUCTURE – ALIGNED WITH STRATEGY

CEO

JALIN KETTER

CEO since 01/2024, CFO since 06/2020

Strategy, IR/PR, ESG, R&D, HR-Development

COO

OLIVER HÖFER

COO since 12/2013

Construction, Production, Procurement, Sales, HR-Administration

CFO

CARL MARKUS GROß

CFO as of 01/2025

Finance, Legal and IT

HIGHLY TECHNOLOGY-DRIVEN SECOND TIER OF LEADERSHIP

SHAPING OUR FUTURE TECHNOLOGICAL PATH

MATERIAL SOLUTIONS

DR. UDO BROICH

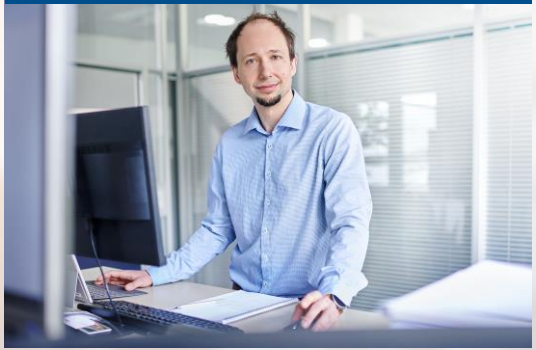
Material Scientist

METROLOGY

DR. PETER CZURRATIS

Physicist

TECHNOLOGY HUB



DR. JAN PFEIFFER

Material Engineer

INDIVIDUAL UNITS ARE IN CHARGE OF BUSINESS OPERATIONS (PRODUCTION, CONSTRUCTION, PROCUREMENT, PRODUCT MARKETING AND SALES)

PVA TePla

PVA TEPLA'S SUPERVISORY BOARD

IN LINE WITH COMPETENCE PROFILE

Alexander von Witzleben
Chairman

Prof. Dr. Gernot Hebestreit

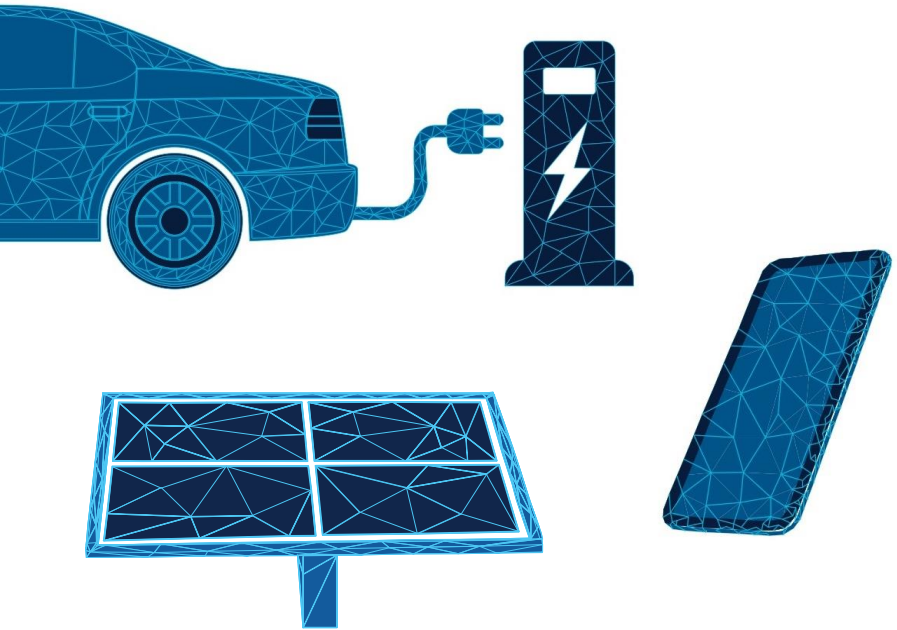
Dr. Myriam Jahn

Prof. Dr. Markus H. Thoma
(until 06/2024)

Proposed for election at the AGM on 26 June 2024:

Christoph von Seidel
Auditor and tax consultant

AGENDA



FY 2023 AND Q1 2024 HIGHLIGHTS

BUILDING ON A STRONG TRACK RECORD

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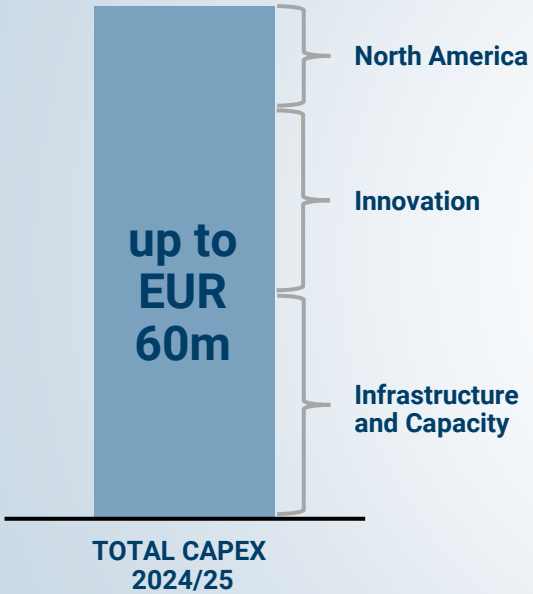
PVA TePla

INVESTMENTS: CAPEX PROJECTION

SUPPORTING FUTURE GROWTH WITH INVESTMENT PEAK IN 2024/2025



KEY INVESTMENT AREAS:

- **North America**
  - Showroom/Assembly capacities
- **Innovation**
  - Technology Hub
  - Training- & Education Centre
- **Infrastructure and Capacity**
  - Production capacity
  - Software & IT

M&A HAS ALWAYS BEEN PART OF OUR GROWTH STRATEGY

OVERVIEW

PVA TePla

Scanning Acoustic Microscopy

- Acquired in 2007, with sales in the single-digit million range
- **Growth** since acquisition **>1,000%**

PVA TePla

MPA Industrie

- Acquired in 2022
- Grown from **single-digit to double-digit** revenues in 2 years

NEW FINANCING STRUCTURE

DESIGNED FOR FURTHER GROWTH

- Financing in line with strategic focus
- Volume almost doubled
- Maturity of at least 5 years
- Reflecting:
  - Investment planning
  - Higher M&A line
  - Product mix/prepayment structure

KEY TAKEAWAYS

PVA TePla

Thank you for attending our Capital Markets Day

Have a safe journey!

IR Contact

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Manager Investor Relations
Phone: +49 (641) 68690-400
Mobile: +49 (151) 122 03311
E-Mail: gert.fisahn@pvatepla.com

FINANCIAL CALENDAR

- **26 June 2024**
  AGM, Gießen
- **14 August 2024**
  Quarterly Report Q2
- **12 November 2024**
  Quarterly Report Q3