

Hydrogen Technology by Bosch

Accelerating green hydrogen production



WIVA P&G Jahresveranstaltung 2024

Jochen Butz

Sales Electrolysis, Robert Bosch GmbH

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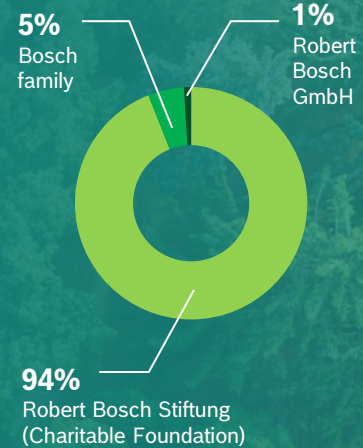
<https://www.bosch-hydrogen-energy.com/>



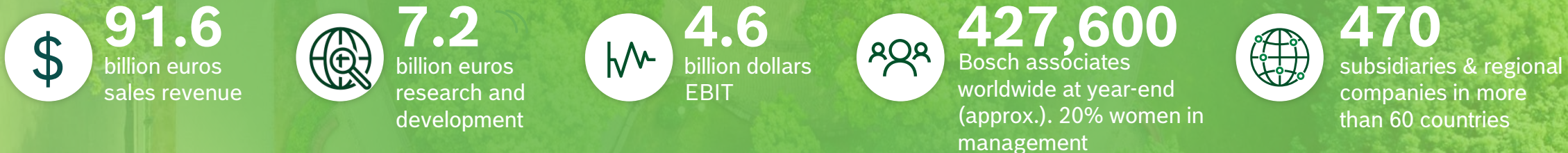
Bosch industry segments & strategic focal areas

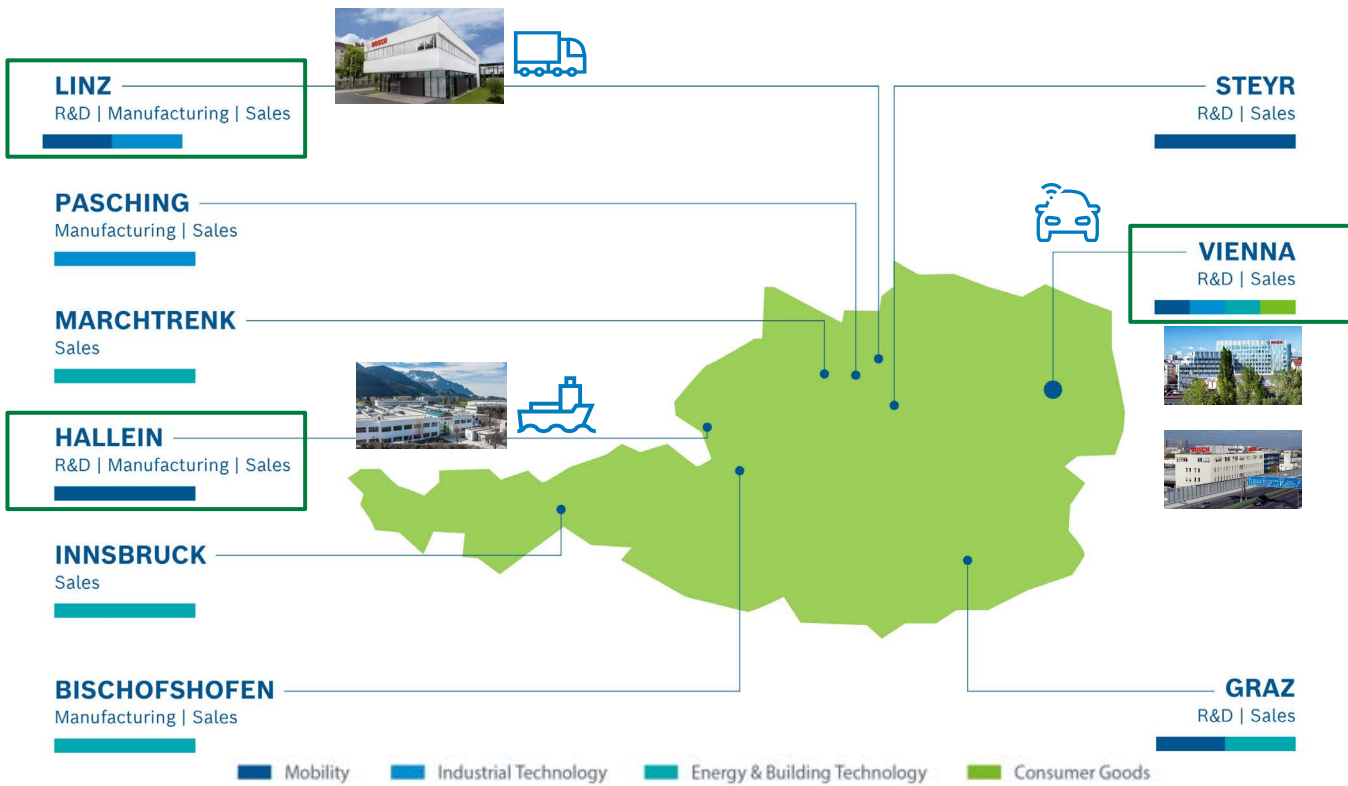


Ownership



2023 Figures





Bosch in Austria: Strong engineering presence

Today, there are three
mobility engineering centres
across the country

Figures of Bosch Austria

€

1.4

billion euros
sales revenue



190

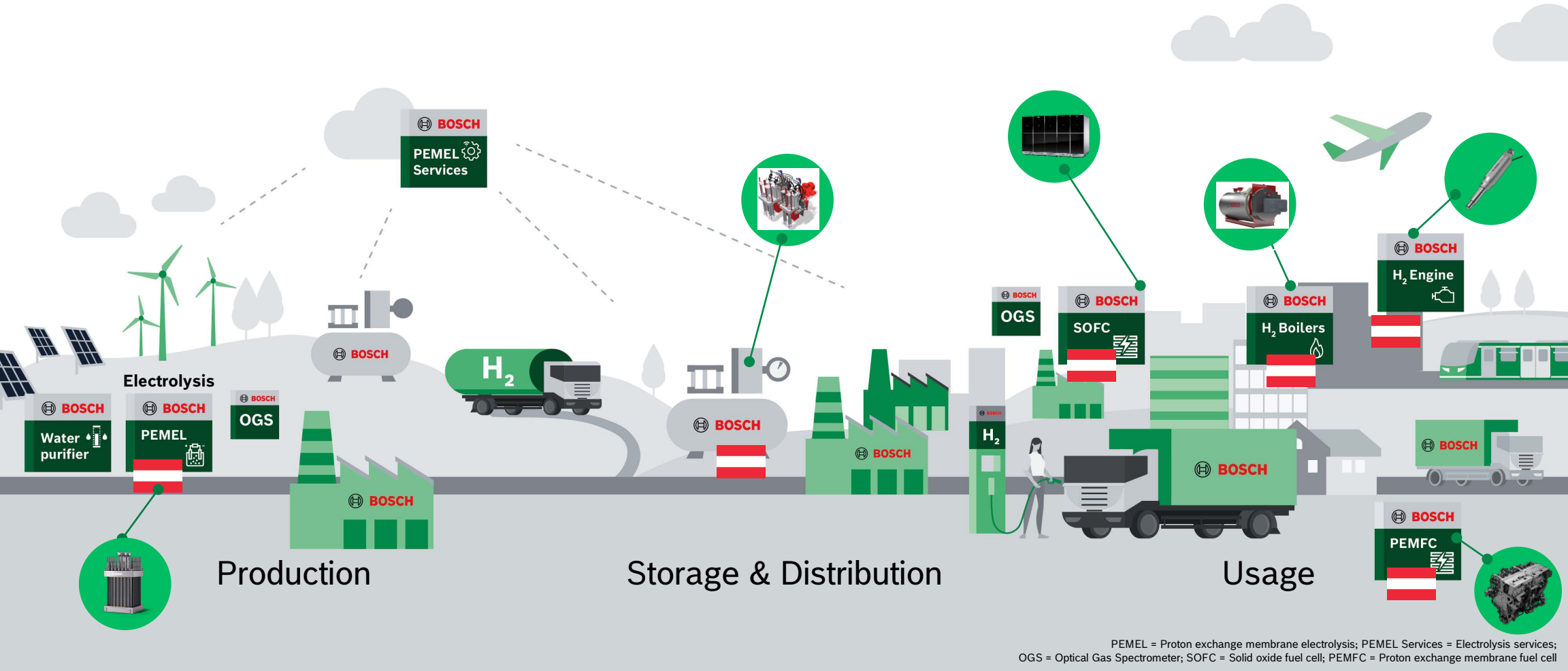
million euros
research and
development



3 300

Associates
(1450 R&D)

Bosch and the hydrogen economy



PEMEL = Proton exchange membrane electrolysis; PEMEL Services = Electrolysis services; OGS = Optical Gas Spectrometer; SOFC = Solid oxide fuel cell; PEMFC = Proton exchange membrane fuel cell

The Bosch PEM Stack as efficient heart of electrolysis

Bosch PEMEL Stack

⚡ Electricity

💧 Purified water



Digital service portfolio
for electrolysis system

🔗 Hydrogen (+ oxygen)

Performance

⚡ **1.25 MW**
maximum power input¹⁾

📈 **~50 kWh/kg H₂**
maximum efficiency^{1), 2)}

🔗 **23 kg/h**
H₂ output at full load

🕒 **> 30 bar**
H₂ output pressure

All values are subject to development activities & provided on a non-reliant basis.

¹⁾ Beginning of life; ²⁾ At partial load; ³⁾ Levelized cost of hydrogen;
⁴⁾ Pre-assembled modules on steel frame

Customer benefits

- Standardized design for **scaling-up electrolyser** solutions
- Enabling **lowest LCOH³⁾** due to high volume production and high efficiency
- **High quality and reliability** due to production according to automotive standards

Maximum scaling effects by best fit for key applications

Containerized solutions



From 1.25 MW to 5 MW
per container

via Bosch
partners



Digital service portfolio
for electrolysis system

via Bosch
partners

Plant solutions



For hydrogen plants
from 10 to 1000 MW

Summary



Bosch providing innovative electrolyzer solutions w/ high efficiency on a large scale based on proven experience in industrialization



Our electrolyzer stack enables other new players to enter the hydrogen market



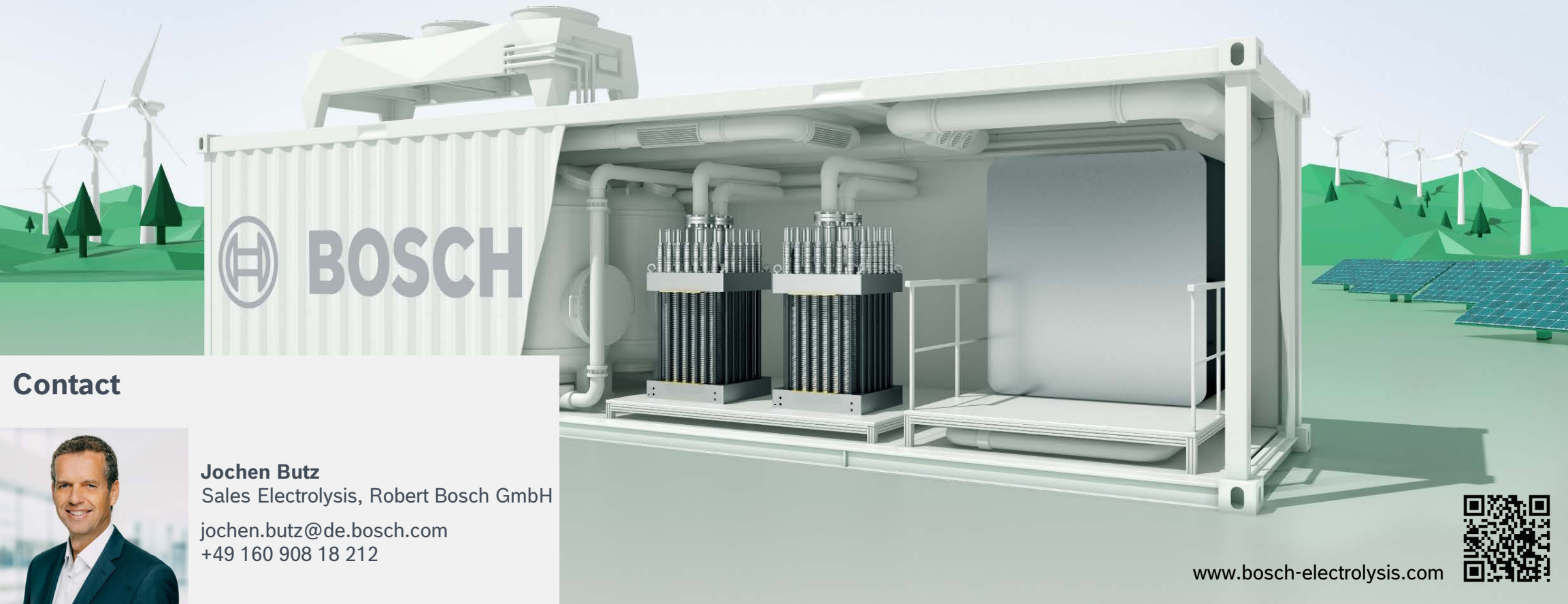
Bosch's internationalization, incl. Bosch Austria, and cooperation w/ associations, industries, politics and research institutions are key success factors



Let's build and jointly exploit market opportunities through reliable partnerships!

Electrolysis Technology & Services by Bosch

Accelerating green hydrogen production



Contact



Jochen Butz
Sales Electrolysis, Robert Bosch GmbH
jochen.butz@de.bosch.com
+49 160 908 18 212

www.bosch-electrolysis.com

