

Local Hydrogen, Global Impact: Unlocking Distributed Electrolytic Hydrogen in North America

WELCOME TO THE NEW H_2

Martin Hering

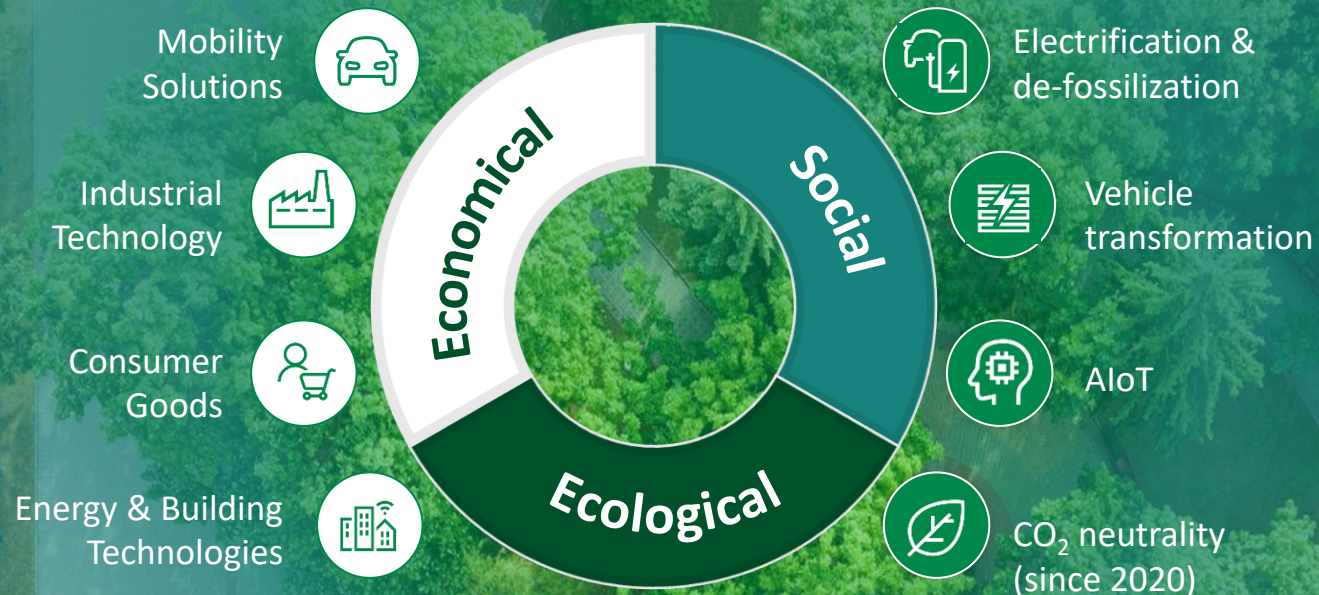
Senior Business Development Manager

Robert Bosch LLC

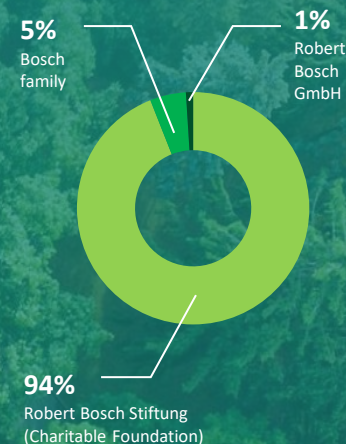
November 18, 2025



Our industry segments & strategic focal areas



Ownership



2024 Figures



~98
billion dollars
sales revenue



~8.4
billion dollars
research and
development



~3.4
billion dollars
EBIT



~417,900
Bosch associates
worldwide at year-end.
~20% women in
management

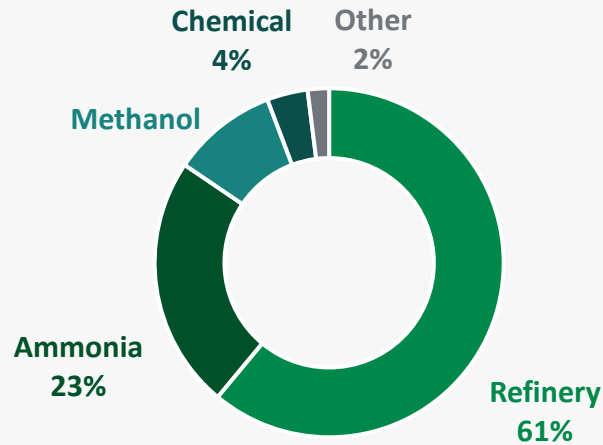


~470
subsidiaries & regional
companies in more than
60 countries

Local Hydrogen, Global Impact

Drivers for Electrolytic Hydrogen in NA – Distributed Demand

Hydrogen demand sectors in NA, representing ~16.7 Mt/a with ~99% from convectional H₂ production



1 Mt = million tons



Strong & growing demand: Today ~16.7 Mt/a (2025) with ~72% captive onsite production & ~28% merchant H₂. Demand projected to exceed 20 Mt/a by 2030.



Sector-specific drivers: Diverse use cases with sector-dependent economics driven by location, off-take demands, size, purity, and utilization.



Distributed demand: Numerous industrial and commercial users are widely distributed, with varied needs and limited access to centralized infrastructure.



Growing fragmentation: Demand fragmentation will increase as hydrogen adoption expands into new sectors and variable offtakes.



Fit-for-purpose: Optimizing fragmented demand requires hydrogen solutions sized to volume needs and tailored to demand profiles for best economics.



Local-for-local advantages: Distributed electrolyzers produce hydrogen at the point of use, avoiding costly transport while improving reliability and economics.

Data reference: Saoradh Enterprise Partners LLC

Local Hydrogen, Global Impact

Key Logistics Corridors – West & South Central



● Major sea ports

🚰 H₂ production

🚰 H₂ refueling

🚚 H₂ mobility

Map Reference: [ArcGIS Hub](#)



Interstate Coverage: Refueling needed across key multi-state freight corridors



Efficient Supply: Distance erodes centralized H₂ economics



Optimized Deployment: Electrolyzers at decentral hubs reduce transport needs and scale with demand.



Shared Infrastructure: Enable municipal fleets, transit, and regional delivery operators.



State Synergies: Aligns with hydrogen strategies forming anchor supply nodes.



Phased Growth: Start with anchor fleets, expand outward

Local Hydrogen, Global Impact

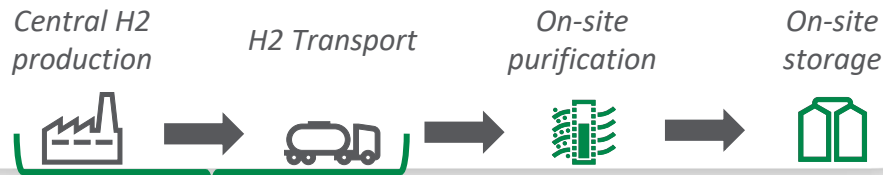
Semiconductor Application: Bosch Roseville Fab example

Bosch silicon carbide (SiC) fab

- Roseville, California – acquired in 2023
- \$1.5 billion invest to upgrade site



Today's H₂ supply chain



**On-site
Electrolyzer
(Future
Opportunity)**



Hydrogen in Semiconductors



Critical Process Role: *Used as carrier gas and reducing agent.*



Purity Challenge: *Ultra-high purity hydrogen required (99.999%+) for high yields.*



Sustainability Conflict: *Conventional gray H₂ supply clashes with chipmakers' ESG and net-zero goals.*



Reliability Imperative: *Supply interruptions unacceptable, downtime in fabs extremely costly.*



Clean H₂ Opportunity: *On-site electrolyzers provide local-for-local supply, ESG upside & hub synergies.*



Co-Product Advantage: *Electrolyzers generate oxygen as a valuable by-product for fab processes.*

Bosch H₂ Portfolio

Addressing key challenges across value chain

Production

Storage & Distribution

Usage

Water purifier

PEM electrolysis stack

Optical gas spectrometer

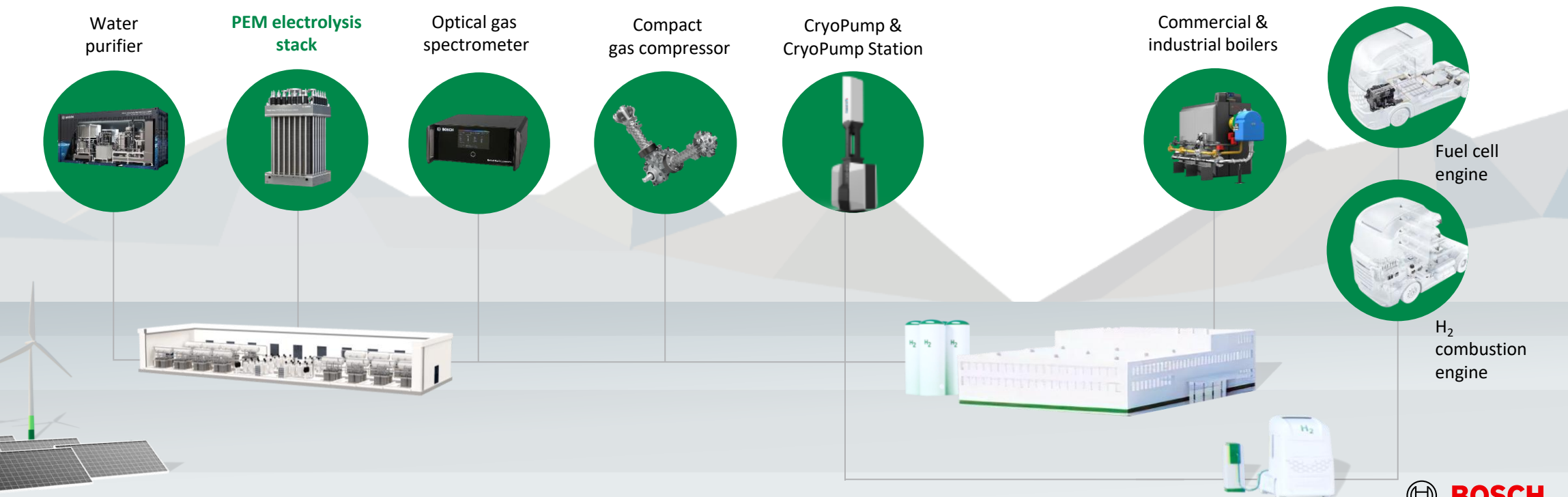
Compact gas compressor

CryoPump & CryoPump Station

Commercial & industrial boilers

Fuel cell engine

H₂ combustion engine



Local Hydrogen, Global Impact

Project snapshot



1.25 MW Electrolyzer for industrial application



- Michigan (Bosch HQ)
- 1 Bosch stack, containerized
- Permits in place, construction ongoing
- Operation early 2026
- H2 for mobility R&D (fuel cells & H2ICE)



1.25 MW Electrolyzer for R&D application



- PEI, Canada
- 1 Bosch stack, containerized
- System and site design in progress
- Operation 2026
- H2 for mobility R&D and refueling

In Development

15 MW Electrolyzer for mobility application, co-located with solar



- California, strategic site on I-5 corridor
- Containerized solution
- Front-end engineering
- Planned operation 2027
- H2 for mobility applications (refueling)
- Future extension beyond 15 MW

Integrating decentralized hydrogen production with distributed demands

Local Hydrogen, Global Impact

#H2 Landscape at Bosch Plant in Bamberg, Germany

 **BOSCH** **FEST**



- Bosch Plant Bamberg
- 2 Bosch stacks, containerized
- Operational
- H2 for mobility R&D (long-term fuel cell testing)

Hybrion

PEM Electrolysis Stacks by Bosch



ASME BPVC & CSA/ANSI:B22734

1.25 MW
maximum power input ¹⁾

maximum efficiency ^{1),2)}

50 kWh
/kg H₂



23 kg/h
H₂ output at full load

> 32 bar
H₂ output pressure

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

¹⁾ Beginning of life; ²⁾ At part load

Providing optionality to established industrial system integrators



... to address needs of diverse off-takers

WELCOME TO THE NEW H_2



Martin Hering

Senior Business Development
Manager

Robert Bosch LLC

Martin.Hering2@us.bosch.com



Hydrogen Means Business in California



NEUMAN & ESSER

FEST

AKA
Energy Systems

ANDRITZ

ty
TECNICAS REUNIDAS

KYROS
HYDROGEN SOLUTIONS

H2 Ready!



Pietro Fiorentini

HYTER
NEW ENERGY ROUTES

Hygreen energy



BOSCH

NIKKISO

IMI

H2B2
Electrolysis Technologies



BOSCH