

Green Hydrogen On Demand

NOW IN LOUISIANA

This is our know-how

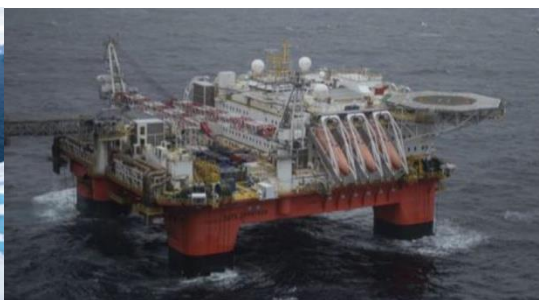
April 2025



ABOUT US

Who are we?

- Electrical systems integrator, specializing in marine and land based electric power systems and energy management
- 28 years old, headquarters in Canada, offices in Europe, US, Singapore
- 150 full time employees and 40 contractors worldwide
- Engineering capabilities: electrical, mechanical, control and automation divisions
- Vertically integrated: 100,000 sq ft machine and electrical assembly shop, large testing and prototyping facility
- Worldwide commissioning and field services team
- Shareholding partners: **Transocean** and **MAN Energy Solutions**
- **PARTNERED WITH BOSCH**



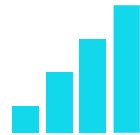
Why AKA?

Since 1996 AKA has focused on delivering value based on these three elements.



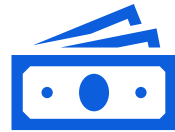
REDUCE ENVIRONMENTAL IMPACT

We deliver solutions that reduce the environmental impact associated with the same operations.



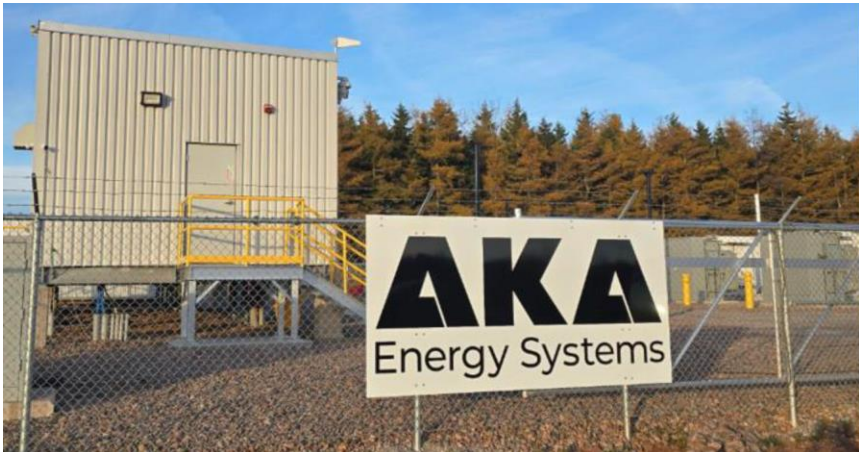
INCREASE RELIABILITY

Our systems provide a step change from the gold plate industry standard for system reliability.



REDUCE OPERATING COSTS

AKA provides the above increased reliability and reduced environmental impact while at the same reducing the cost of operation.





ABOUT US

Our Top Clients And Partners

- Transocean Offshore International
- MAN Energy Solutions
- Shell
- Siemens
- General Electric
- Caterpillar Power
- Washington State Ferries
- Jurong Shipyard
- Keppel FELS
- Davie Shipyard
- Canadian Navy
- TTLine
- Samsung
- Bosch
- KOTUG
- Canadian Coast Guard
- ABB
- DSME
- HHI
- Alaska State Ferries
- Bay Ferries
- SeaSpan Ferries
- Foss Maritime
- Irving Shipbuilding
- Damen Shipyard
- Stena
- Ocean Rig
- Seadrill

ABOUT US

Vertical Integration

Closing Technological Gap



Design



Commissioning



Build



Life Cycle Support

Bringing Marine Technologies to Shore

World's First Hybrid Drillship



Marine Hybrid Knowledge → Technology for Microgrid



- Sea going assets are microgrids with **highly resilient power plants**
- Completed the largest Atlantic Canada microgrid (Sunbank)
- Modular integrated microgrid solutions with:
 - Renewable power
 - Energy storage
 - **Hydrogen generation.** [®] **BOSCH** **QUEST ONE**
 - E-Fuel production

Microgrid Solutions

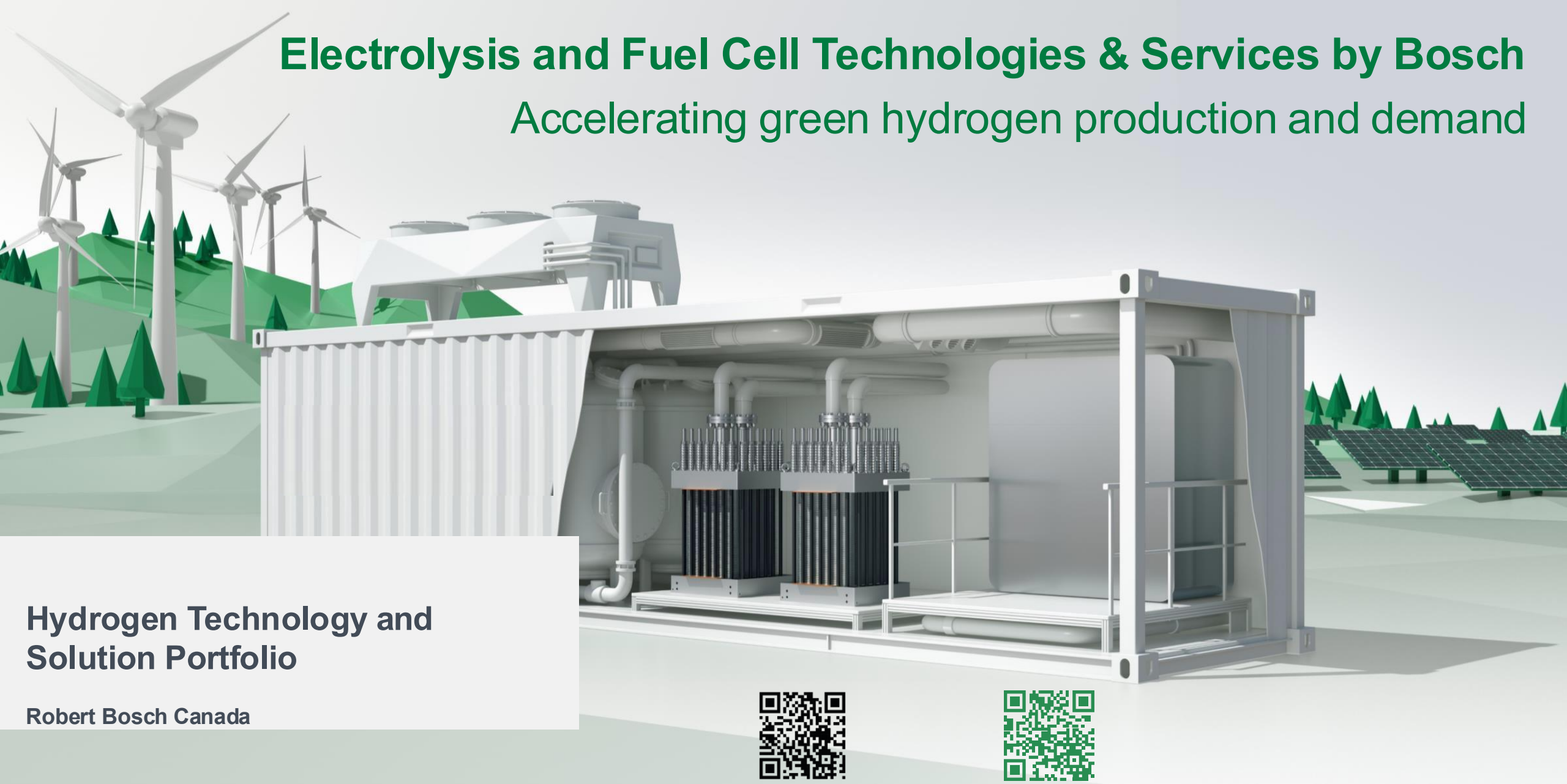
Modular distributed net zero renewable power generation and energy management with hydrogen and e-fuel production.

- Localized **H2** production tailored to the offtake demand to reduce the risk and cost of H2 transportation
- **AKA** has developed, with **Bosch**, an integrated microgrid solution to go from renewable energy directly to the H2 offtake point
- **AKA Microgrids feed GREEN HYDROGEN** into methanol/ammonia synthesis process if needed
- **AKA solution eliminates:**
 - H2 transportation
 - energy consuming and costly H2 compression
 - H2 storage
- **AKA / BOSCH solution** ensures a ready supply of **hydrogen** when and where needed
- Production can be scaled to supply H2 for blend with Natural Gas transmission in pipeline



Electrolysis and Fuel Cell Technologies & Services by Bosch

Accelerating green hydrogen production and demand



Hydrogen Technology and Solution Portfolio

Robert Bosch Canada

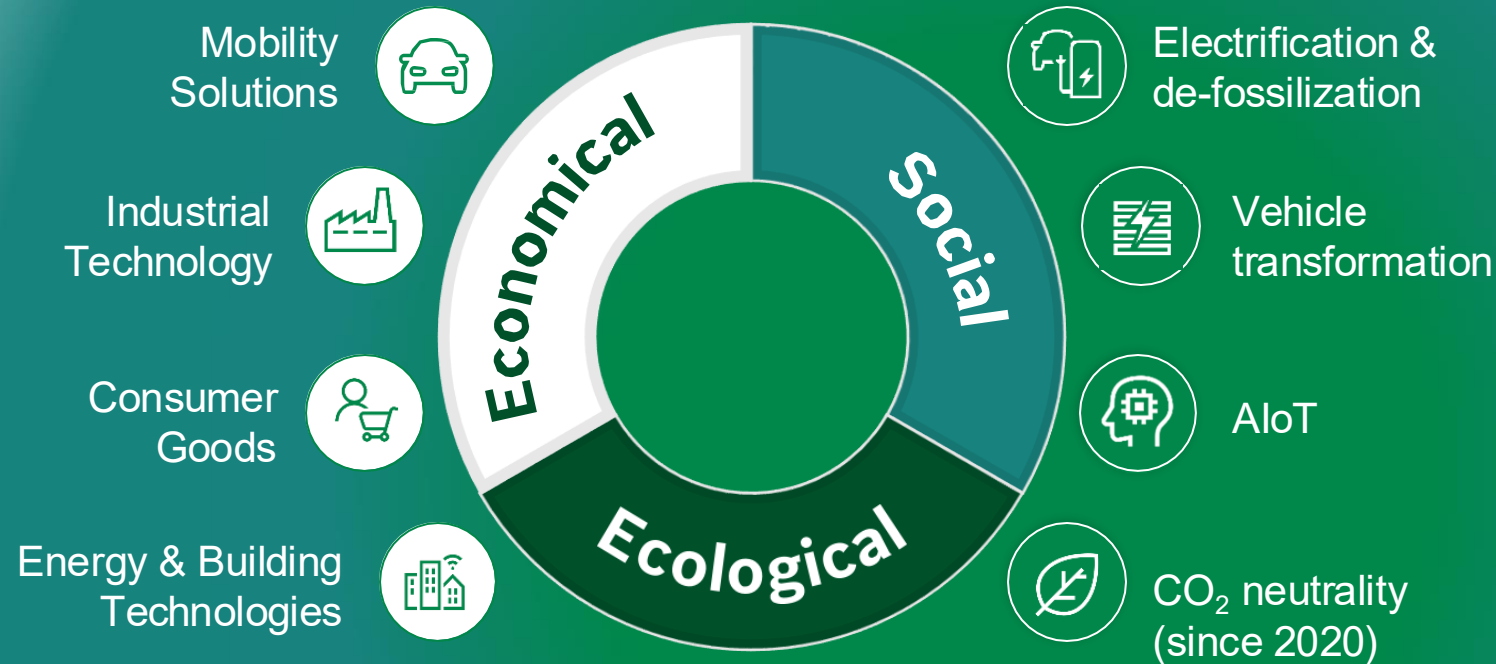


www.bosch-electrolysis.com

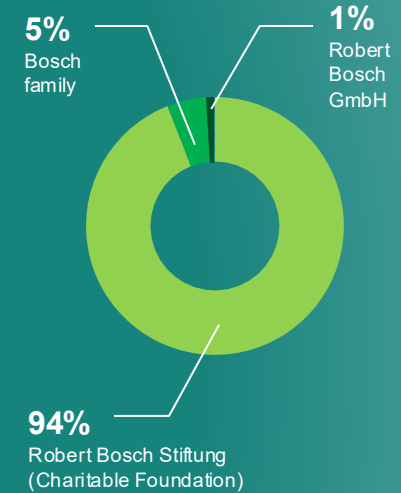


www.bosch-hydrogen-energy.com

Our industry segments & strategic focal areas



Ownership



2023 Figures



~99
billion dollars
sales revenue



~7.9
billion dollars
research and
development



~5.2
billion dollars
EBIT



429,416
Bosch associates
worldwide at year-end
(approx.). 20% women in
management



468
subsidiaries & regional
companies in more
than 60 countries

Patent
leader



System
know-how



Industrialization
strength



Endurance
Master



We are fully committed

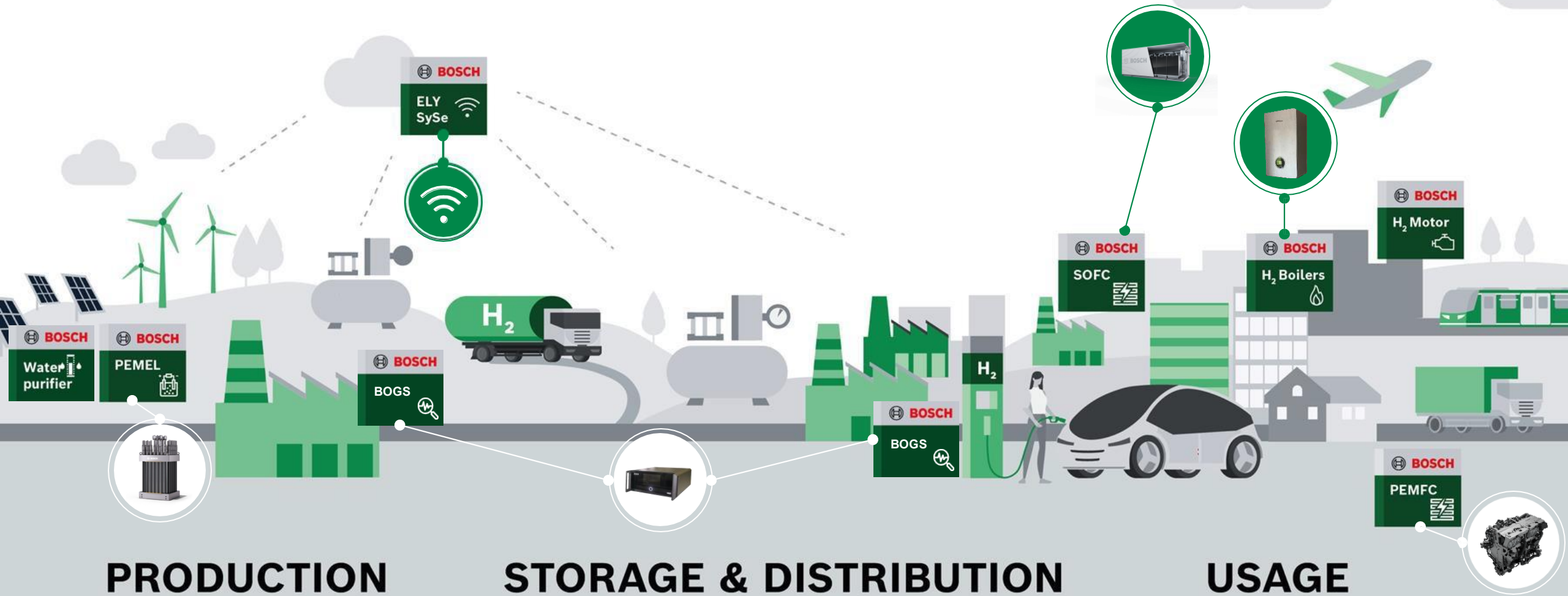
BOSCH invests multi-bn € in clean hydrogen technologies

- ▶ Hydrogen as a core element of our BOSCH strategy
- ▶ Utilizing strengths as global automotive and industrial supplier
- ▶ Contribution along the entire hydrogen value chain
- ▶ Establish **BOSCH** as the preferred supplier for core products of a future green H₂ eco-system

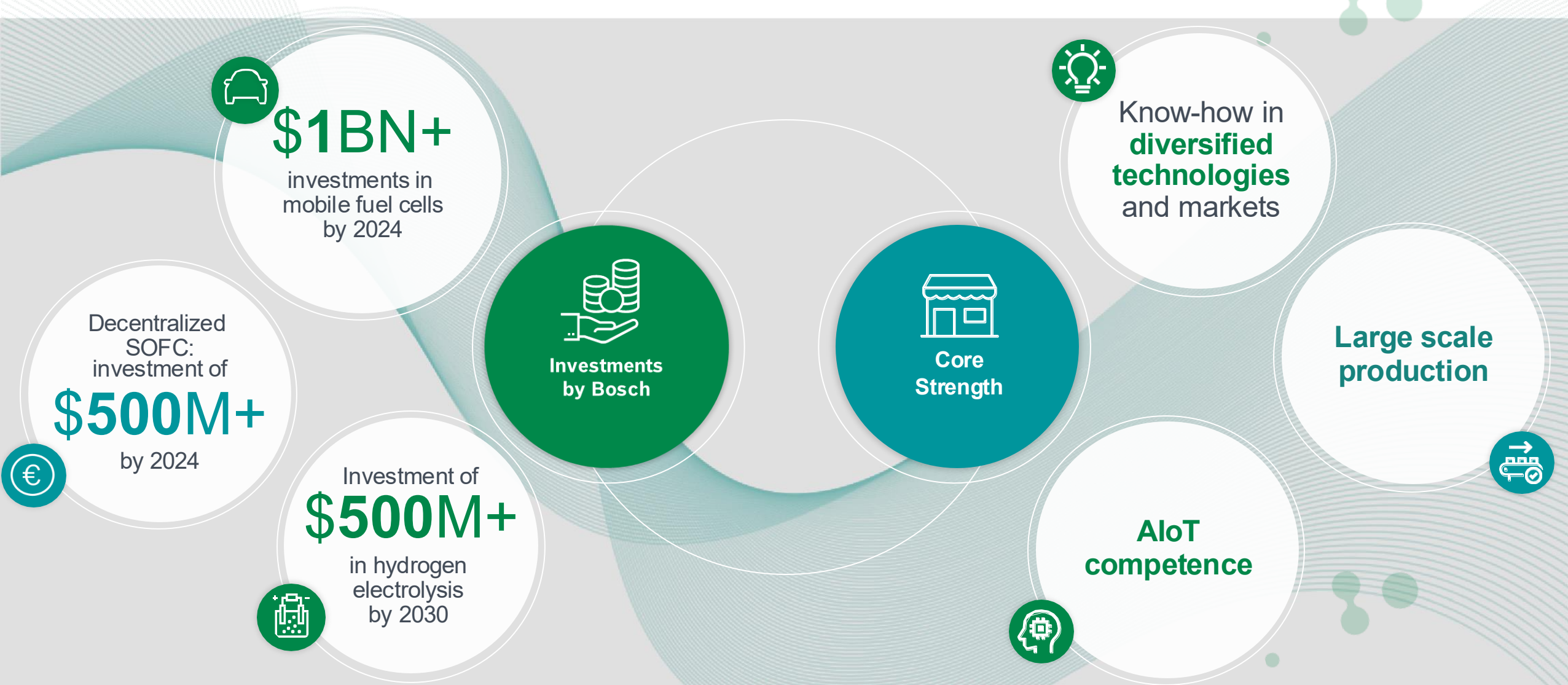


Robert Bosch GmbH, Board of Management, 2022 announcement

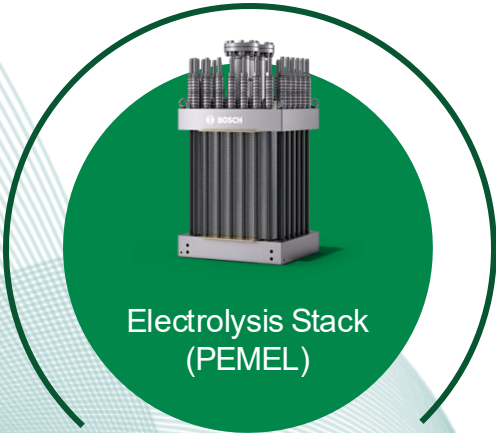
Bosch and the Hydrogen Ecosystem



Hydrogen market & investments & core strength



Bosch Electrolysis & Fuel Cell portfolio



Electrolysis Stack (PEMEL)

Non-Automotive

H₂ production



Technology 

Low Temperature

Type 

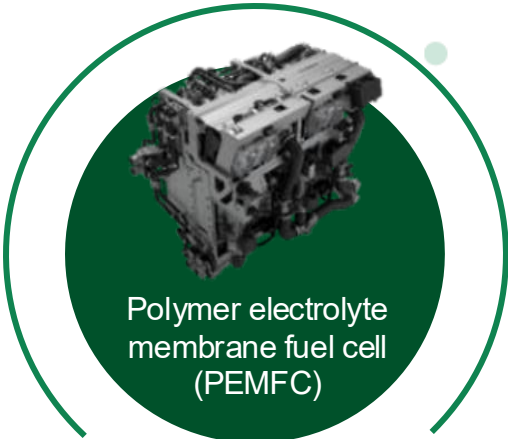
Electrolysis

Power per module 

1.25 MW

Fuel 

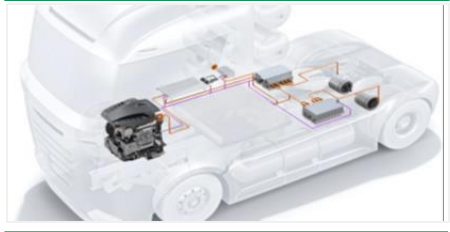
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Polymer electrolyte membrane fuel cell (PEMFC)

Automotive

H₂ usage

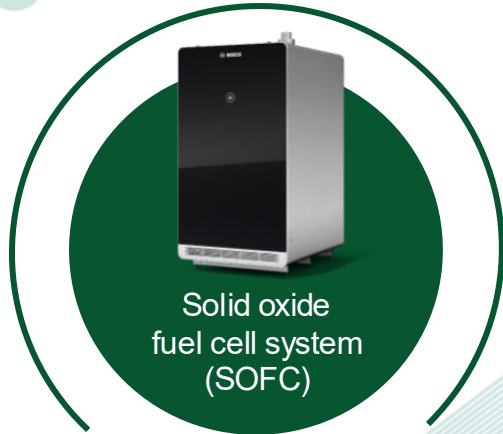


Low Temperature

Fuel Cell

Up to 130 kW

Hydrogen



Solid oxide fuel cell system (SOFC)

Non-Automotive

H₂ usage



High Temperature

Fuel Cell

100 kW¹ up into the MW range

Hydrogen, Biomethane², Natural gas

¹The Bosch SOFC system is currently in the pilot phase. All technical specifications given in this informational document are development objectives and refer to beginning of life.
²According to DVGW G 260

Bosch Hydrogen Activities

Locations

Mississauga, ON, CAN
Regional Project office,
Business Development



Farmington Hills, MI, U.S.
Regional Project office,
Business Development &
Engineering



Anderson, SC, U.S.
Regional Manufacturing
support, selected Plant for
PEMFC stack production



Tilburg
Engineering PEMEL stacks



Bamberg
Production PEMEL stacks &
smart electrolysis modules



Budweis
Engineering smart electrolysis
modules



Linz
Engineering PEMEL stacks



Stuttgart-Feuerbach
Project office, test lab &
engineering smart
electrolysis modules



Renningen
Corporate research:
Pre-development, test lab



Manufacturing



Development

About
280+ associates
work in the electrolysis team (status Jan. 2024)

Bosch Hydrogen Activities

The Bosch PEMEL stack as efficient heart of electrolysis

Bosch electrolysis stack

⚡ Electricity

💧 Ultra-pure 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 efficient stack design
- **High quality and reliability** due to production according to automotive standards
- **Lowest integration & commissioning effort** through compatibility with existing container and skid⁴⁾ designs

Bosch Hydrogen Activities

Bosch Electrolyzer Offering and Value-Chain Positioning

Containerized solutions



From 1.25 MW to 5 MW
per container

Up to four stacks in
series connection



Our mission: Be a global core partner and high-volume supplier of PEM ELY stacks to the hydrogen industry, focusing on customers in the integrated product and plant solutions space



1,25 MW
PEM Stack

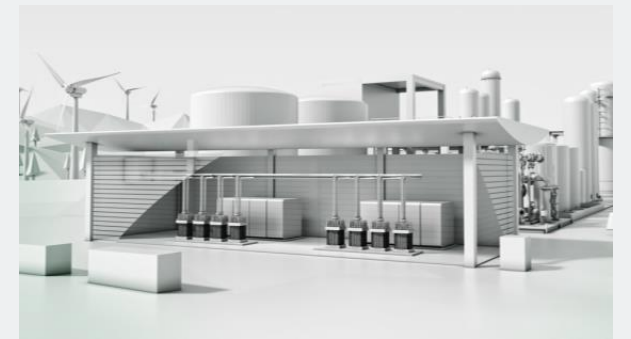


Future: Customized
engineering solutions



Digital service portfolio
for electrolysis system

Plant solutions



For hydrogen plants
from 10 to 1000 MW

Scaled skid mounted modules
2.5 MW, 5 MW or 20 MW

Bosch Hydrogen Activities

Bosch is working with strong partners for joint business scale-up

Benefits to customers



Reliable supply and product quality



Serving up to large scale projects



Global footprint in production & services



Optimized LCOH, asset lifetime and availability through Bosch products & services



Energize
#LikeABosch



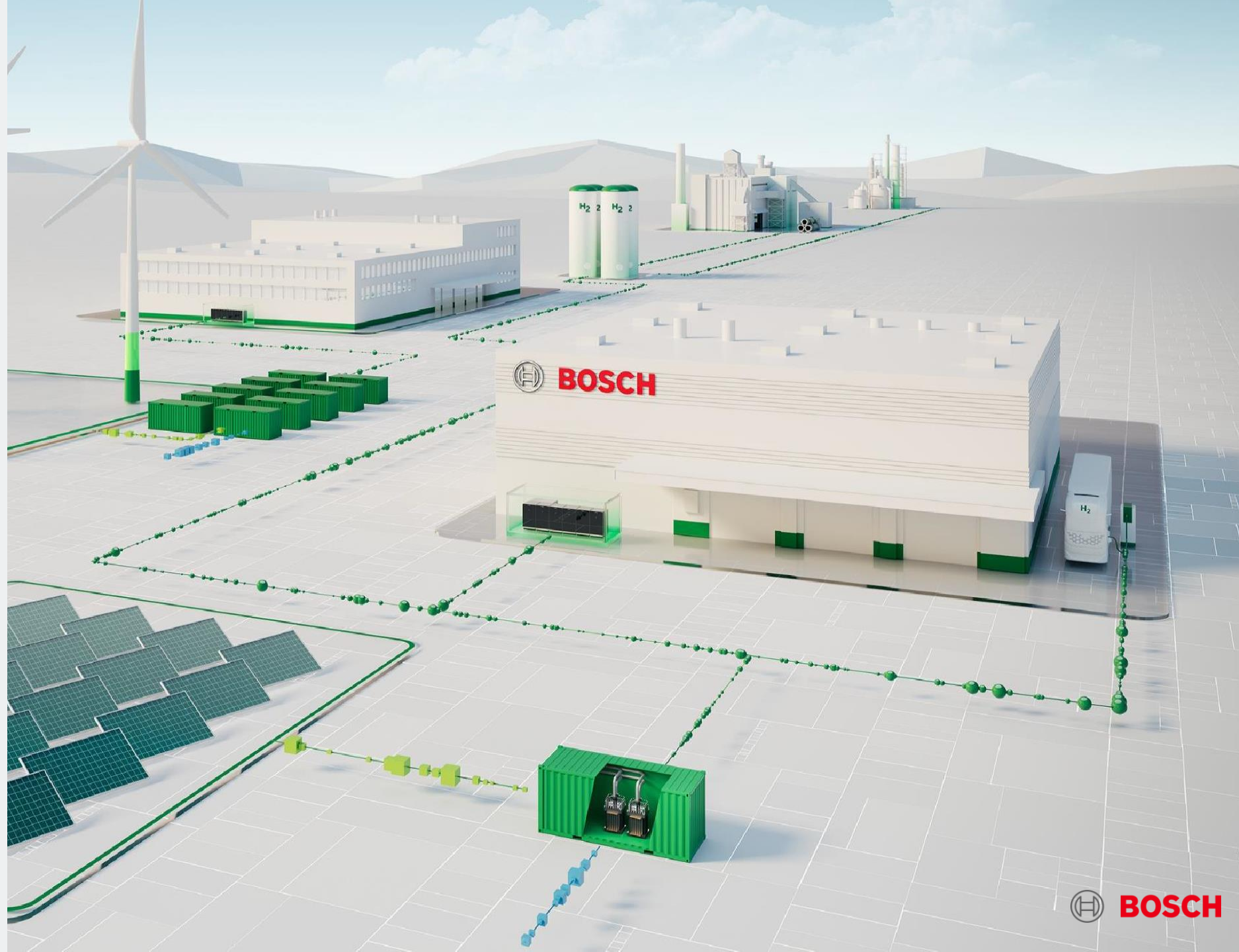
Thank you
for your interest!



Rafael Antiquera
Director, Growth and Innovation

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Phone: +(1)647-218-0703



Bosch Electrolyzer OEM & Integrator Partners in NA

AKA Energy Systems



Company Name	AKA Energy Systems
HQ Location	Montague, PEI, Canada
Established Date	1996
Type of Industry	Energy Systems OEM
No. of Employees	140
Website URL	https://www.aka-group.com/

Company overview

AKA’s green energy solutions are designed to support multiple commercial and industrial energy management strategies – and create options for providing grid services to utility or wholesale markets.

AKA’s high reliability and hybrid power systems improve performance, reliability, efficiency and reduce carbon footprint for Marine applications. Alternate sources of power and energy storage systems are used to efficiently provide unprecedented grid stability and emission reductions in various configurations integration and financial objectives.



AKA Highlight:

Industrial

AKA’s facilities contain over 100,000 square feet of floor space for the fabrication and manufacturing of electrical power and control systems and includes centers for engineering, research and development, and testing.

Services

From engineering, consulting and design, to commissioning, field service and world-leading documentation, AKA exceeds expectation. Our services exist to support our clients for the continued success of their projects.

Key contacts:

Jason Aspin
CEO

Martin Simic
BD, Strategy

