Horizon Fuel Cell Technologies

An end-to-end hydrogen technology innovator.

Company Overview

Horizon is a leading global hydrogen technology player

Founded in 2003, Horizon Fuel Cell Technologies ("Horizon") offers pure-play hydrogen technology, focusing on fuel cell systems and new electrolyzer technologies

- Offices & partners located in 20 countries, with multiple manufacturing sites
- 300+ employees, of which 40% in R&D functions
- Over 1 million fuel cells sold in 20 years | delivered more than 300 MW of fuel cell systems

Horizon's mission is to accelerate decarbonization through mass-deployment of full hydrogen energy value chains, from green hydrogen production to fuel cell power generation

>300MW
cumulative fuel cell power delivered

>1 million
units of air-cooled fuel cell sold cumulatively

>2,500 trucks
powered by Horizon fuel cells on the road today

>1 GW
core materials manufacturing capacity

Company History

Two decades of continuous innovation in hydrogen technology

2003
Founded in Singapore

2006
H-racer named TIME Magazine Best Invention

2007
Drone powered by Horizon ultra-light fuel cell stack broke the FAI-certified flight distance record

2010
Launched fuel cell charger and desktop electrolyzer

2011
HYMERA for BOC/Linde begins sales in the UK

2015
Launch of the "Methanol Reforming Fuel Cell System"

2017
Launch of liquid-cooled 50kW vehicle fuel cell system

2019
Launch of 150kW Fuel Cell Stack and 120kW Fuel Cell System

2022
Launch of 250kW Fuel Cell Stack and 200kW Fuel Cell System

2023
20th anniversary of Horizon Launch of the first MW-scale PEM electrolyzer

2024
Launch of 400kW Fuel Cell Stack

Launch of 5MW AEM Electrolyzer System

2025
Launch of 240kW Fuel Cell System

2026
Launch of 300kW Fuel Cell System

NEW

Launch of C/UL/M Series Fuel Cell System

NEW

Global Footprint

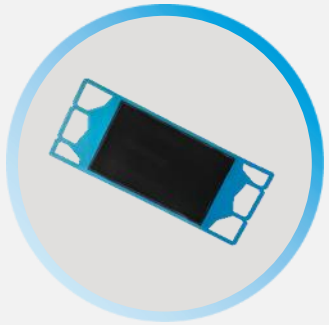
R&D & manufacturing supported by long-term global distribution partners

San Francisco, CA
USA
Mexico
Brazil
Netherlands
Czechia
Italy
Spain
Zigong
Ordos
Xinxiang
Zhangjiagang
Shanghai
Foshan
Korea
Japan
India
Thailand
Malaysia
Singapore

- Horizon North America Headquarters
- Horizon Holding Company
- Horizon R&D & Manufacturing
- Global Distribution Partners

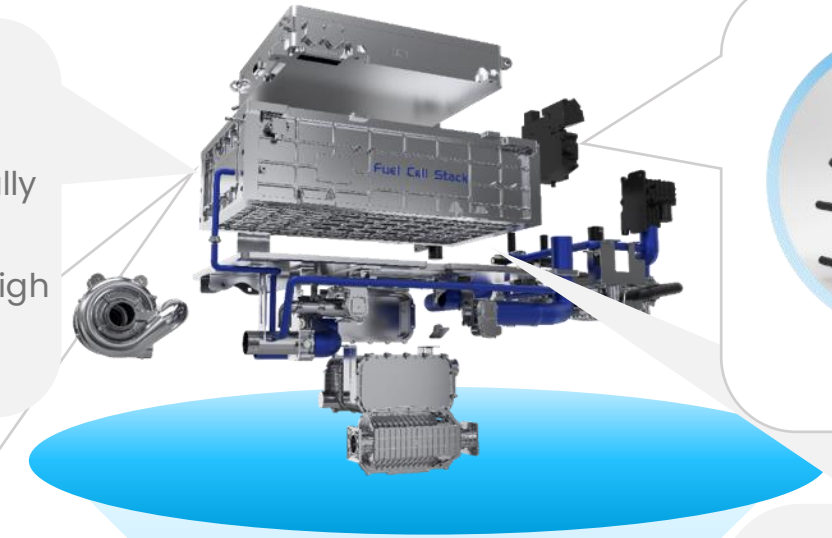
Core Components Developed In-house with Continuous Optimisation

Driving breakthrough economics on fuel cells



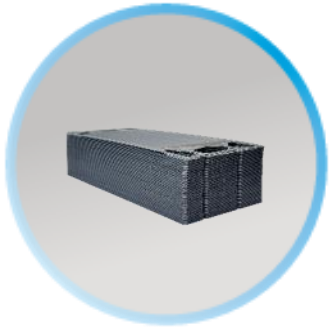
MEA

- Advanced roll-to-roll fully automated production
- Low platinum loading high power density



Hydrogen Injection and Recirculation Module

- Inhouse proprietary design
- More compact, reliable and no parasitic power consumption



Bipolar Plates

- Embosssed graphite bipolar plates developed inhouse
- Lower cost, better performance and more durable

Stacks

- Single stack power output of 5W–400kW
- More compact design, higher power density and reliable operation

Stationary Power Solutions

From kW to MW scale dispatchable zero-emission, water-positive power

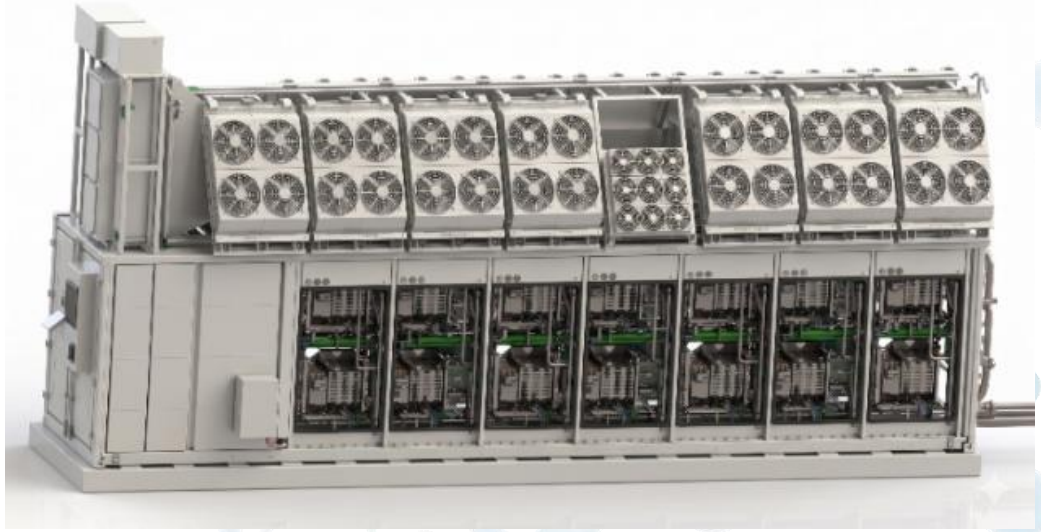
- High-efficiency energy conversion
- Scalable modular power platform
- Excellent dynamic load response performance
- Flexible DC output integration
- Design with low auxiliary power consumption
- Reliable thermal management system
- Compact integrated structural design

HFC-P5/P10/P13

HFC-P65

HFC-P140/P230

Parameter	Value
Rated output (DC-side)	3.5 MW DC
DCDC voltage range	500–840 V DC
H_2 supply pressure	1.7 ± 0.1 MPag
H_2 consumption @ 3.5 MW, BOL	234 kg/h
Ambient temp / humidity	-30 to +45 °C / 0–95% RH
Cooling medium	50% glycol + 50% DI water
Emissions	Zero pollutant (trace H_2 in steam/condensate)
Communication	Modbus TCP

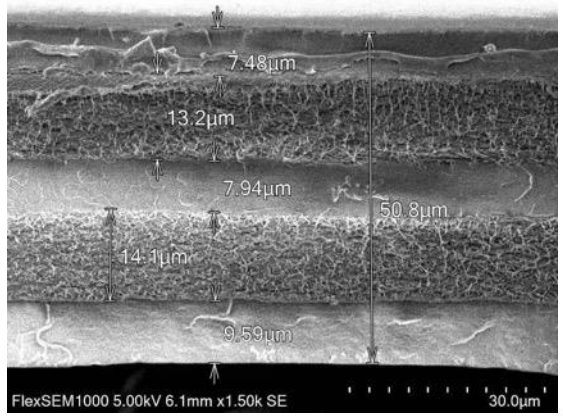


HFC-PGU 2.8MW

World Leading AEM Technology

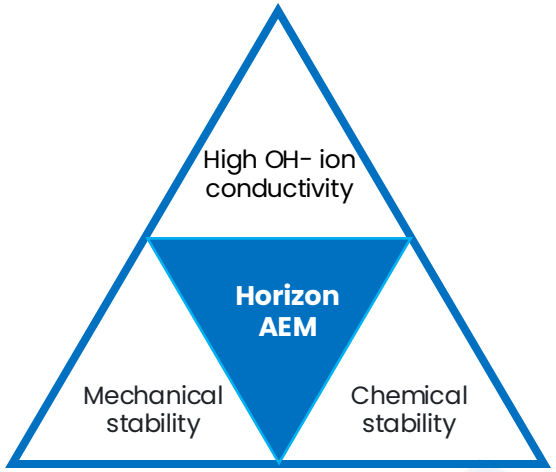
Superior anion exchange membrane, electrode structure and novel stack design

- Originated from Horizon's multi-layer mechanical and chemical reinforcement technology developed in 2007, achieving superior mechanical strength and chemical for long lifetime operation.
- Partnership with world-leading technology institution on all saturated SP3 carbon anion exchange polymer.
- Highly active and durable anode electrode structure
- Novel stack design reaching 500kW-2MW/stack.



Functional group	Quatermarised Norbornene
Reinforced	double reinforcement
Thickness(dry)	50μm
Tensile Strength(dry)	TD≥65Mpa, MD≥65Mpa
Temperature Durability(dry)	No oxidation below 180℃
Ion Exchange Capacity	3.5meq/g
OH-conductivity	>120mS/cm @80℃

Technical Specifications of Horizon AEM



Superior Performance of Horizon AEM: world-first 5MW

Case Study

5MW AEM Electrolyzer

World's First 5MW AEM System Delivered: Horizon Transforming Green Hydrogen

The world's first 5MW AEM electrolyzer system was recently delivered to the Rockcheck Steel industrial park in Tianjin by Horizon Fuel Cell subsidiary HET Hydrogen.

This marks a significant milestone in Horizon's mission to commercialize megawatt-scale AEM products globally, with the technology hailed as an important next-generation enabler for Green Hydrogen.

The HET-A1000 equipment delivered to Rockcheck establishes the world's first integrated system combining Photovoltaics (PV), AEM Hydrogen Production, and Hydrogen-Enriched Blast Furnace Smelting. The industrial park is constructing a new 17MW Building-Integrated Photovoltaic (BIPV) system, supported by two 5MW AEM electrolyzer systems (each producing 1,000Nm³/h). The green hydrogen produced will be used for hydrogen enrichment in Rockcheck Steel Group's blast furnaces, reducing coal consumption and carbon emissions, transforming the steel plant from a major carbon emitter into a decarbonization showcase.

Case Studies

MW-scale Stationary Power on Demand

Data Center Project in USA
400kW Fuel Cell System

- In 2025, Horizon completed the deployment of a 400kW fuel cell Mountain View, CA, primary power to a local data center startup.

CHP Plant Project in China
2MW Fuel Cell System

- The fuel cell CHP system provides up to 2MW of electrical power and approximately 7GJ/h of heat for an industrial complex.
- This delivers significant economic benefits,reducing annual electricity purchases by up to16GWh and eliminating up to 10,000 tonnes ofharmful emissions.

Power Plant Project in Korea
200kW Fuel Cell System

- Horizon supplied a 200kW power plant for an industrial complex in South Korea, utilizing waste hydrogen from the complex's chemical operations as fuel.
- The power plant is designed to operate on demand, providing a clean backup alternative to diesel generators.

Case Studies

Mobility Applications

> 2,500 trucks

heavy-duty trucks powered by Horizon fuel cells on the road today

49t Trucks

42t Logistics Trucks

4.5t Refrigerated Trucks

12m Fuel Cell Buses

Fuel Cell Trains

31t Dump Trucks

Fuel Cell Forklift

Hybrid H2/Electric Boat

UAVs

Two-wheelers

Case Study

Hydrogen Truck Ecosystem

~1,300 heavy trucks

a single fleet of zero emission trucks with integrated operations

High utilisation 49t trucks

Economic viability is driven by the match between the various components, not sheer scale

H2 from Electrolysis

Horizon has already scaled production; easier to achieve attractive economics

Filling Stations

What does this mean for the Baltics?

Hydrogen trucks being validated right here

Hydrogen Truck test: 1,932 km from Helsinki to Kaunas

Hyzon fuel cell truck 446-KMJ with a Vammas sweeper semitrailer, 7 Jan–6 Apr 2026: Helsinki Airport, Tallinn, Riga and Kaunas

1,932 km

total distance driven

≈260 kg

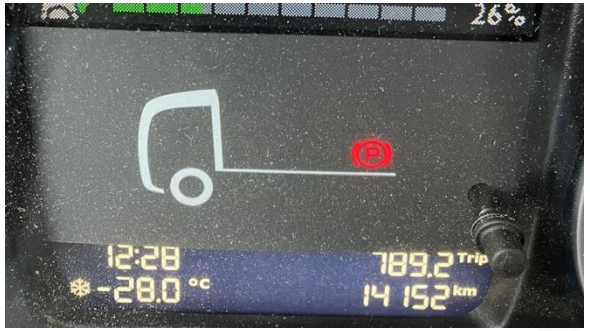
hydrogen consumed

13.6 kg

average H_2 per 100 km on hydrogen

≈1.8 t

tailpipe CO_2 avoided vs. diesel



HyAirport demonstration at Helsinki Airport, 15 January 2026

The opportunity for fuel cell heavy mobility

- The **core technologies are all thoroughly va**lidated: fuel cells, hydrogen onboard storage, batteries, electric drive, as well as hydrogen management / dispensing
- Thanks to adoption within China, the learning curve is delivering **improved performance and sharper economics**
- Many heavy vehicles operating in northern China, with very cold winters
- **Viability comes mostly from the right-sizing** of hydrogen production, dispensing, etc, along with vehicle fleet size and operating dynamics .. you don't need hundreds of trucks to have a strong economic model
- Horizon prior experience can accelerate the development of a **viable hydrogen ecosystem** in the Baltics

- **Local partnerships** are important for a strong ecosystem: engineering support, aftersales capabilities
- We have **experience being gained** here in the Baltics, and can leverage other European capabilities from Germany and elsewhere as needed

Road Charges: Hydrogen Truck vs Euro VI Diesel

5-axle combination, 40 t GCW · 2 trips × 200 km per day · 250 days = 100,000 km/year

Charging model and rates by country

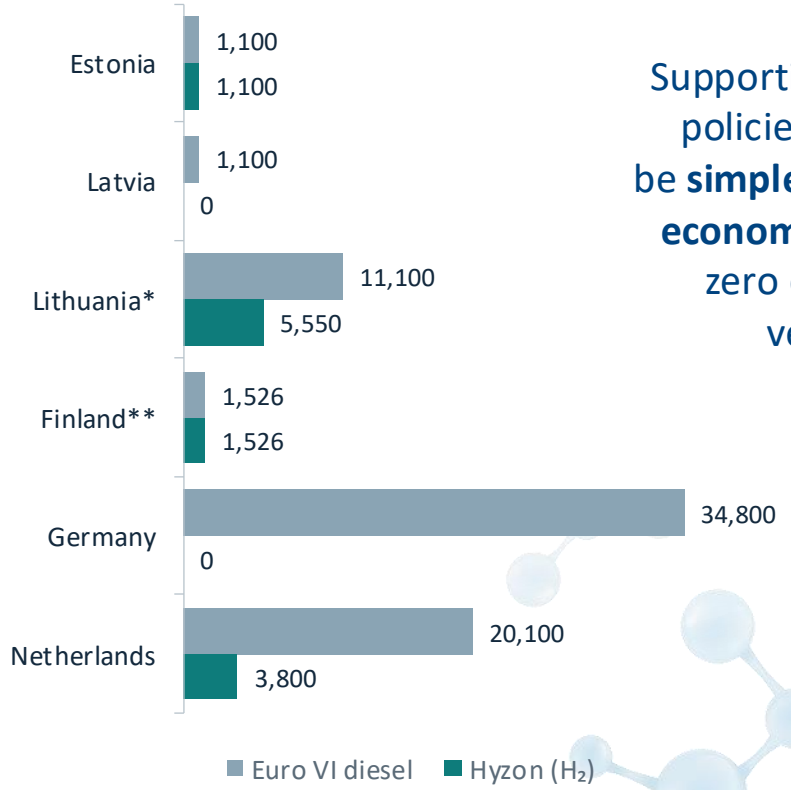
Country	Charging model	Euro VI diesel	Hyzon (H_2)
Estonia	Time vignette	€22/day · €1,100/yr	Same as Euro VI
Latvia	Time vignette	€22/day · €1,100/yr	**Free since 1.3.2026**
Lithuania*	Vignette → km toll 2027	≈€0.111/km (2027)	**–75% now, –50% 2027**
Finland**	Vehicle tax (FI-reg.)	≈€1,526/yr	No ZE truck rate
Germany	km toll	€0.348/km	**Exempt to 30.6.2031**
Netherlands	km toll (from 7/2026)	€0.201/km	**€0.038/km**

€34,800
saved per truck per year in Germany

€16,300
saved per truck per year in the Netherlands

€0
advantage in Estonia and Finland

Annual road charges, € per truck



Supportive road charge policies are proven to be **simple, effective and economical drivers** for zero emission heavy vehicle adoption

* Lithuania: planned 2027 Via Toll average for Euro VI (€0.111/km) with 50% zero-emission discount; annual vignettes discontinued 1.7.2026. ** Finland: tax applies only to Finland-registered trucks, assuming a 19 t 4x2 tractor. Assumes all km on tolled roads in one country; rates as of Sept 2026, excl. VAT. Sources: teetasu.ee, lvvignette.eu, keliumokestis.lt, vialietuva.lt, Traficom, Toll Collect/BALM, vrachtwagenheffing.

Thank you!

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