Ballard Power Systems
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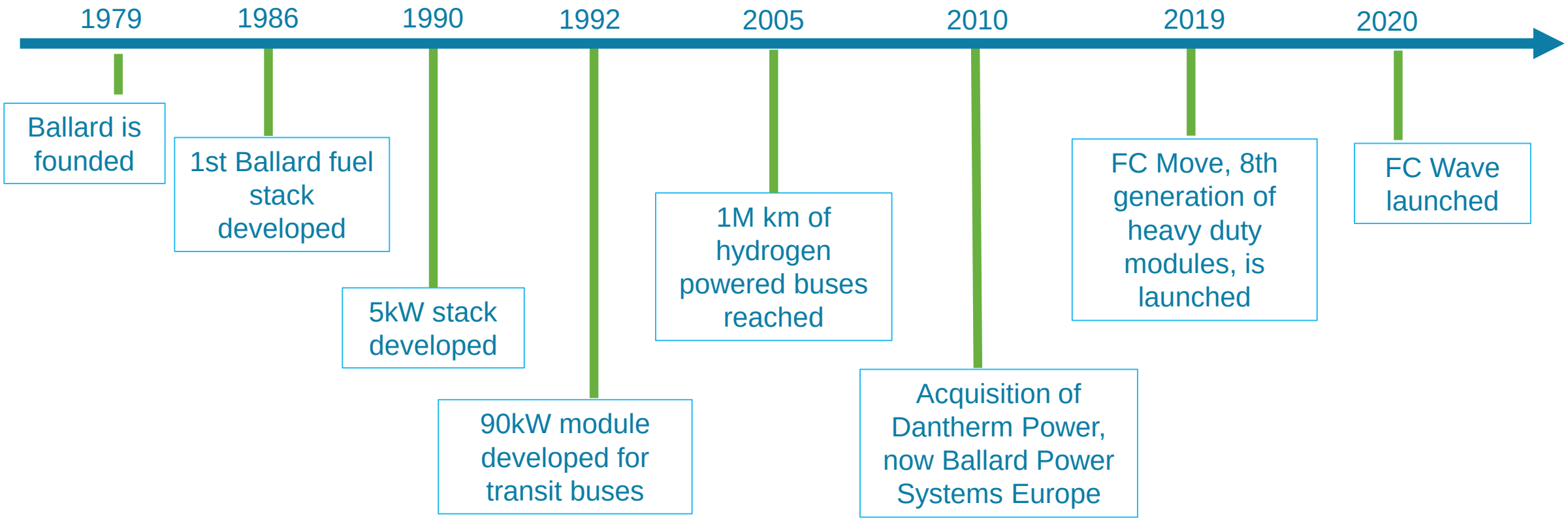
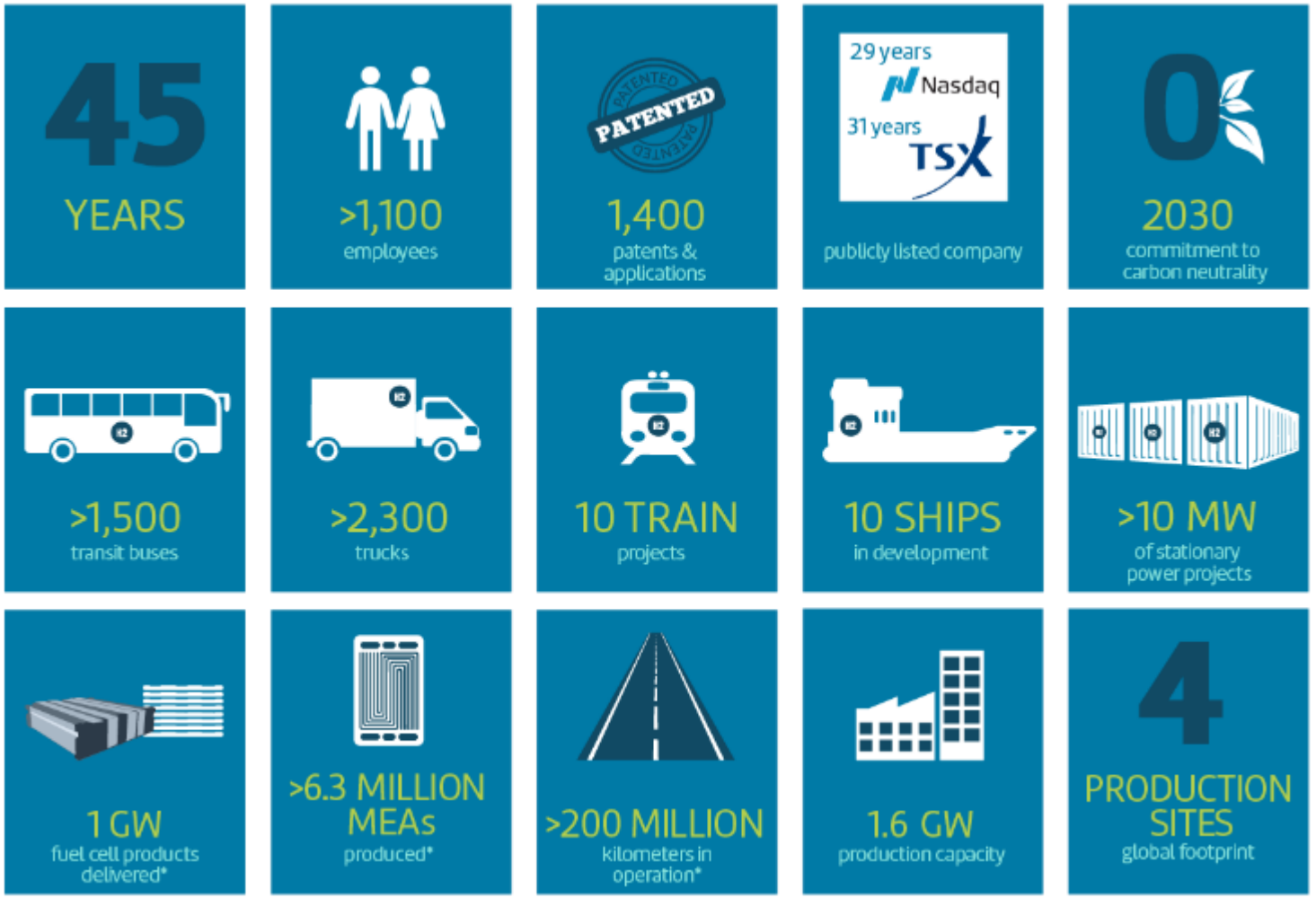
Ballard History



Ballard by the numbers



Driving the commercialization of fuel cell technology

Proven

40+ years of fuel cell deployments in diverse applications bring experience, scale, service and lifecycle cost expertise advantages

Performance

Leading fuel cell efficiency, durability and reliability

Products developed according to industry standards

Promise

End-to-end support from engineering, testing, after sales services & training

Sustainable zero-emission solution

We have a comprehensive range of fuel cell products
to address multiple applications

Wisdom 40t Taurus truck

The 40-ton heavy-duty 'Taurus' truck was developed by Chinese commercial vehicle manufacturer Wisdom for PepsiCo in the Australian market. The hydrogen-powered vehicle is equipped with a 110kW fuel cell engine from the Weichai-Ballard Joint Venture (WBJV), and its stack adopts Ballard's LCS M series with a power density of 4.0kW/L - allowing the truck's cabin a more practical design and compact layout.

Heavy Duty Truck

Wisdom 40-ton heavy duty ‘Taurus’

LOCATION

scheduled for commercial operation with PepsiCo in Brisbane, Australia

FUEL CELL

110kW fuel cell engine from the Weichai-Ballard Joint Venture (WBJV)

Urbino 18 Hydrogen

The Solaris Urbino 18 Hydrogen fuel cell electric bus is powered by Ballard's FCmove®-HD+ fuel cell engine.

The cutting-edge transit bus has been equipped with a module drive system, allowing Solaris to increase the vehicle's capacity – which can carry up to 138 passengers, depending on configuration.

FCEBs

There will soon be Urbino 18 zero-emission buses in operation or on order for public transit across Europe

LOCATION

Solaris's Ballard-powered FCEB will be in service in Aschaffenburg, Germany and on routes across several European cities during 2024

FCMOVE®-HD+ 100KW ROOFTOP FUEL CELL ENGINE

Applied Hydrogen Excavator

Ballard has partnered with Norwegian-based hydrogen-powered equipment and systems developer, Applied Hydrogen, to develop and deliver a zero-emission 30ton fuel cell excavator.

Based on the Volvo EC300E crawler excavator, the excavator integrates Ballard's FCmove®-XD heavy-duty fuel cell engine and will eliminate approximately 60 tons of CO_2 emissions per year.

Crawler excavator

The zero-emission vehicle is based on the Volvo EC300E crawler excavator.

LOCATION

The vehicle is being developed and delivered to Veidekke – one of the largest construction companies in Scandinavia

FCmove®-XD, 120KW FUEL CELL ENGINE

CPKC Hydrogen Locomotive Program

Over the past two years, Ballard has supplied CPKC with 20 fuel cell engines for use in three different types of locomotives, for both shunting and mainline applications.

These locomotives have been undergoing field testing in 2022 and early 2023 with successful tests. Based on this, CPKC has ordered another 30 engines.

Locomotive
Zero Emissions
97% reliability
50% efficiency
exceptional durability

LOCATION
Alberta, Canada

6 x FCwave™, 1.2MW FUEL CELL SYSTEM

FLAGSHIPS H2 Barge 2

With FPS H2 Barge 2, the partners Future Proof Shipping (FPS), LMG Marin, VTT, Persee, EC FCH-JU have retrofitted an inland waterway container ship that offers zero-emissions shipping services to enable players across the value chain make the transition to zero-emissions. FPS aims to build and operate a fleet of 10 zero-emission inland and short-sea vessels over the next five years which they will offer for charter to logistics service providers and cargo owners.

Inland Waterway Container Carrier

Zero Emissions
99.9% reliability
>50% efficiency
exceptional durability

LOCATION

Rhine river
Rotterdam (Netherlands) – Duisburg (Germany)

6 x FCwave™, 1.2MW FUEL CELL SYSTEM

First Mode Mining Truck

Powered by Ballard's FCmove®-HD+ fuel cell engine, First Mode looks to lead in decarbonizing heavy-duty mining by retrofitting a 300ton ultra-class haul truck, saving 2,600 tons of diesel fuel every year.

First Mode's FCEV retrofit, supported by Ballard technology, has a 100kW fuel cell fitted on each side of the truck that helps produce the electricity that powers the vehicle.

Mining Haul Truck

The fuel cell electric vehicle is a retrofit of a 300-ton Komatsu 930E-4 ultra-class haul truck.

LOCATION

Demonstrations of the truck has been ongoing in Washington, U.S., while the truck currently operates at Anglo American's platinum mine in Mogalakwena, South Africa

2 x FCmove®-HD+, 200kW FUEL CELL SYSTEM

Backup Power for Datacenters

Caterpillar, Microsoft, Ballard Power Systems, U.S. department of Energy (DoE), NREL to demonstrate the viability of using large-format hydrogen fuel cells to supply reliable and sustainable back-up power for data centers. The demonstration provides valuable insights into the capabilities of fuel cell systems to power multi-megawatt data centers, ensuring UPS to meet Microsoft's 99.99% uptime requirements.

Backup Power FC solution

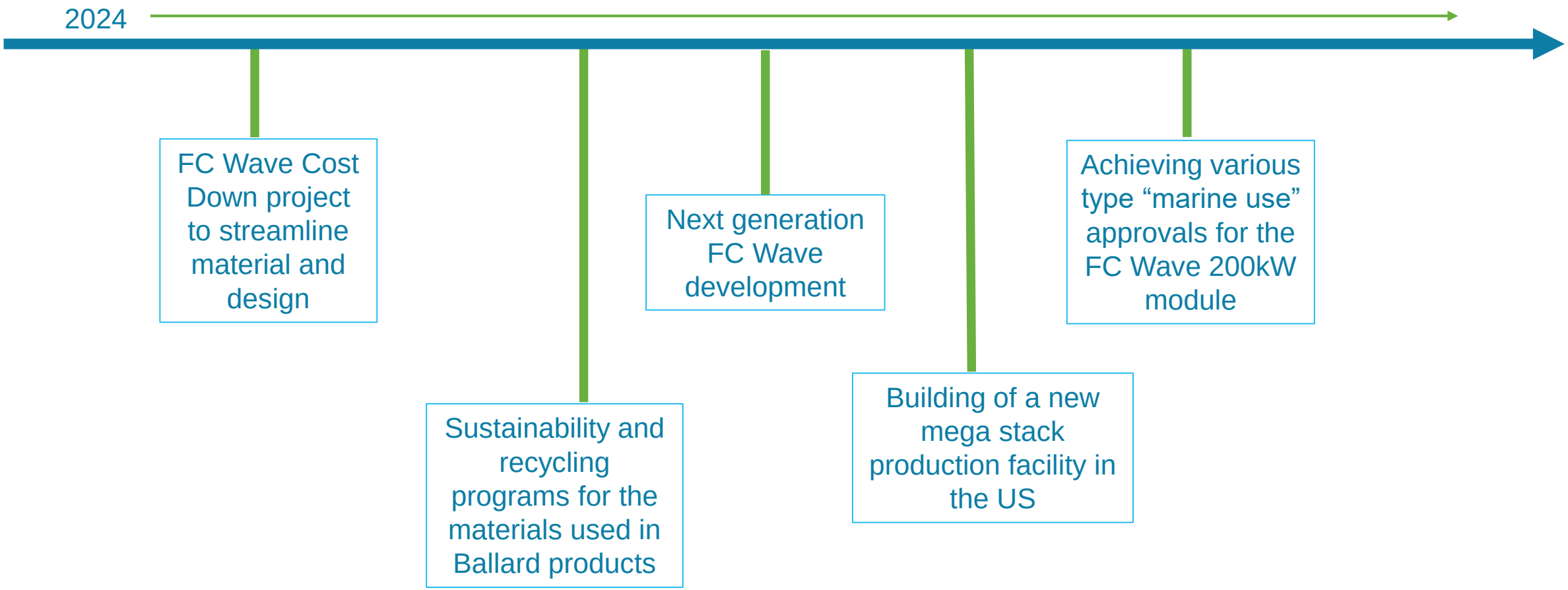
Zero Emissions
99.9% reliability
+50% efficiency
Exceptional durability

LOCATION

Microsoft's data center in Cheyenne, Wyoming (USA)

1,5MW FUEL CELL SYSTEM

Ballard Going Forward



“Urgent, concerted efforts are needed to reduce greenhouse gas emissions, protect biodiversity and switch to sustainable practices. On the other hand, population growth and the development of human activities are increasing energy requirements.”

-Damien Chanal


BALLARD
Thank you
Here for life™