



**BALLARD™**

**FCwave™**



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The image shows a row of large, industrial-grade stationary power generation units. Each unit is a large, rectangular metal cabinet with a complex network of pipes, valves, and electrical conduits on top. The units are arranged in a line, and the scene is set outdoors during what appears to be dawn or dusk, with a soft, hazy light in the background. The overall color palette is dominated by blues and greys, with a slight greenish tint on the right side of the image.

Stationary Power Generation with  
Zero-Emission Fuel Cells

# Proven

10MW successfully deployed products and modules, certified to stationary fuel cell power generator requirements per EU, ATEX and CSA standards

# Performance

High reliability

+50% efficiency

Excellent availability

Exceptional durability

# Promise

End-to-end support throughout the whole customer journey. Sustainable zero-emission solutions from stack supply to turnkey power solutions for the end users





# Fuel cell power for uninterrupted, zero-emission power supply

Ballard's 200kW DC electric power generator, FCwave™, is an efficient, quiet, zero-emission energy alternative to diesel generators. The PEM fuel cell technology is well suited for intermittent power applications, cycling and rapid ramp up, making the FCwave™ a strong fit for decentralized zero-emission power generation, including challenging environments, as well as standby for critical infrastructure applications.

## Benefits of stationary fuel cell systems

- » Scalable from 200kW to MWs with flexible and simple integration at minimal use of space
- » High reliability, +50% efficiency
- » Exceptional durability with low maintenance requirements
- » Low total-cost-of-ownership through optimized product performance and common components across product platforms
- » Fast responding standby power for critical infrastructure

# Introducing **FCwave™**

Highly reliable in supplying seamless, uninterrupted power, the FCwave™ is available in 200kW modules that are scalable up to MWs for flexible integration with minimal use of space.

- Easy installation as stand-alone modules, coupled in parallel or as a containerized solution.
- Remote monitoring of performance data and planning for preventative maintenance via diagnostic connections
- Low total-cost-of-ownership achieved through optimization of product performance, common components across product platforms and low maintenance requirements
- Uncompromising focus on the highest safety, health and environmental protection standards.



FCwave™

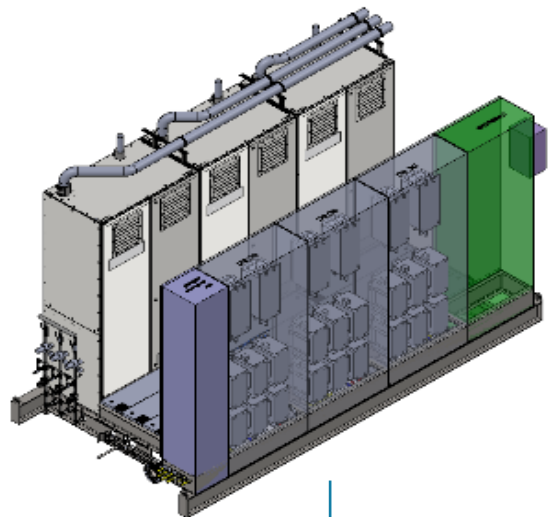
- » Heat management and battery subsystems can be included
- » Product with full service supply and spare parts support
- » Certified to stationary fuel cell power generator requirements



BALLARD™

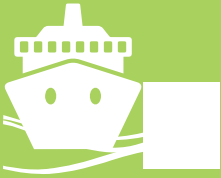
FCwave™ can be delivered in modular skids with a prepared interface to cooling and power management.

- 30 stacks per MW (96% recyclable stack components)
- Scalability from 200kW to MW
- Ramp rate to 20-100% power in 10 sec



FCwave™ modular skids

# Fuel cell systems are used for a variety of stationary applications



## Shore Power

Fuel cell systems run independently on the site

Secures reliable electricity access and decrease grid dependency

Low OPEX



## Backup Power

Supplies reliable and uninterrupted power when a failure or outage occurs

Fuel cell systems can eliminate use of diesel generators and secure zero-emission operation



## EV Charging

Highly scalable according to growing needs

Quick and constant EV charging solution

Decentralized, self-contained sustainable charging solution

Reducing strain on the grid

High power output



600kW onshore power at the Port of Esbjerg



1.5MW back-up power at Microsoft data center



1MW decentralized power generation for EV charging



1.2MW (DC) offshore peak shaving power generation at Hollandse Kust Noord offshore wind project

Stationary applications  
**#PoweredByBallard**

With 45 years of experience in designing and implementing PEM fuel cell technology, we are confident that fuel cell technology is the right choice for your zero-emission power solution.



We deliver fuel cell power for a sustainable planet

When it comes to product lifecycle management, Ballard is at the leading edge of innovation in applying the three “Rs” to its fuel cell stacks. Our expertise in Refurbishing, Reusing, and Reclaiming fuel cell components means our solution is both zero-emission and zero-waste.



PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING

*Here for life™*

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