

Cargo Bike in Europe

Technology Overview

With rise in the e-commerce, delivery services is set to rise in the future. In 2019 European consumers ordered goods at a value of approx. 621 bn € equal to 13% growth and in tradition with the two-digit growth rate of e-commerce for the past 20 years. There is a need for more efficient ways to deliver the parcels and cargo bike is the solution.

In comparison with batteries, fuel cell powered cargo bikes is able to operate much longer (up to 9hrs on a single charge) and offers fast charging in the matters of minutes to get back the full range. This will increase the productivity and uptime of the assets as well as reducing the amount of infrastructure needed for charging services.



Technical Specification

Fuel Cell Power System

Weight (excluding tank)	1	kg
Fuel Cell Rated Power	400	W
Hydrogen Tank	9	L
Estimated run time	9	hrs
Refilling time	5-10	mins

Potential Application

- Delivery
- Material handling
- Transportation

Benefits at a glance



Light and Compact



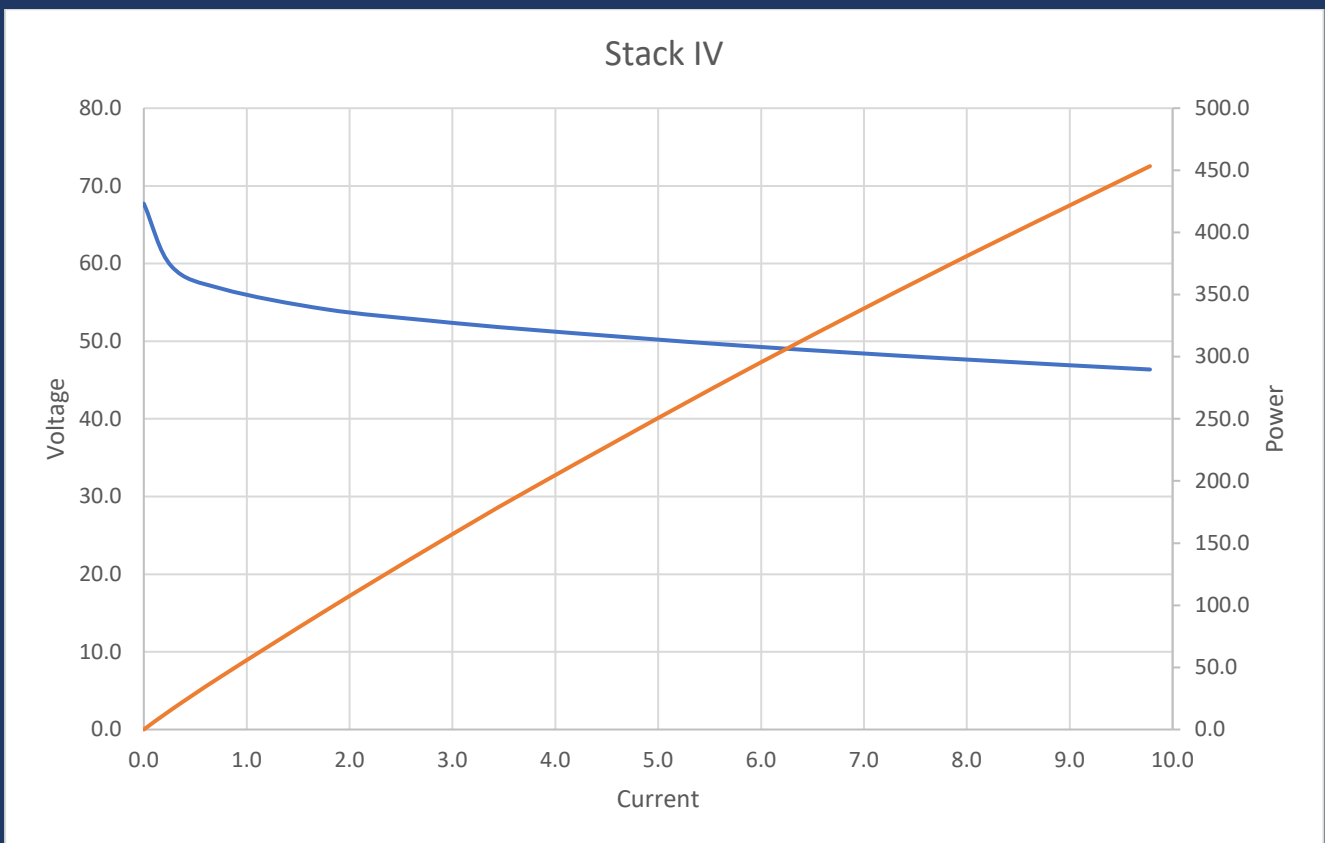
Fast Refuelling



High Endurance

Technical Specification (Fuel Cell)

Power Specification	Rated Power	400W
	Rated Current	8.5A @ 47V
	Hydrogen Pressure	2 barg
Fuel Requirement	Peak consumption	~5.5L/min
	Hydrogen Purity	Min 99.99%
Physical Specification	Cell Number	75 Cell
	Dimension (L x W x H)	~170mm x 75mm x 130mm
	Weight (excluding control circuit)	1.0kg
Accessories	<ul style="list-style-type: none">• Cooling Fans• Purge Valves• XT 90 Power Connection• OD 6mm PU Tubing Connector (inlet and outlet)• Fan Holder	



Beginning of life test. Test condition: Ambient 22.5°C, RH 70%

Used Case



Picture for illustration, extracted from: <https://www.eav.solutions/eav-2-cubed>

Together with our project partners, we have successfully integrated 20 units of our 400W fuel cell stacks to be integrated into delivery cargo bikes in Germany.

Benefits

The bikes can operate non-stop for more than 9hrs (on a 9L, 300bar tank) or even more with a larger tank.

Refilling will only take up 5-10mins for the full 100% range regardless of the tank size.

Typical specification of the cargo bikes

Speed: 25km/hr

Power System: 48V input

Cargo Space: 2m³