Making an impact on the clean energy transition

TRANSPORT

MASS FUEL-CELL PRODUCTION IN LINE FOR A BOOST

Bottleneck breakers

Fuel cells and hydrogen (FCH) technologies are key in the EU's switch to low-carbon energy to protect the climate and environment. For adoption across Europe, fuel cells must be cheaper to produce, perform better and last longer, and be made in large enough volumes to meet market demand.
INLINE is one of eight FCH JU projects improving fuel-cell manufacturing and quality control. The project has increased the capacity of a 100-unit PEMFC production line to up to 50 000 fuel cells each year, with better-quality output. Each unit can be made 27 % faster, thanks to a redesign of two components – the media supply unit and tank valve – while automated quality-control processes correct faults during production, reducing waste.

Industry-ready technology

Fuel cells from the project have been integrated into 20 commercial HyLog-Fleet fuel systems for industrial forklifts. Other fuel-cell industries could follow. INLINE has produced a list of key exploitable results with good market potential and projected return on investment. For one quality-control tool, an endoscopic inspection sensor, the project consortium has produced a business plan to encourage adoption. All results help manufacturers to develop a competitive European PEMFC supply chain that contributes to a greener, cleaner world.

Mass fuel-cell manufacturing is a step closer in Europe. The FCH JU project INLINE has designed a large-volume, flexible production line for high-quality proton-exchange fuel cells (PEMFC), the most common type of fuel cell. These innovations drive forward a stronger European PEMFC industry and a lower-carbon, more sustainable economy.

FCH JU Success Stories >

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KEY ACHIEVEMENTS

500
times more capacity in a single manufacturing line

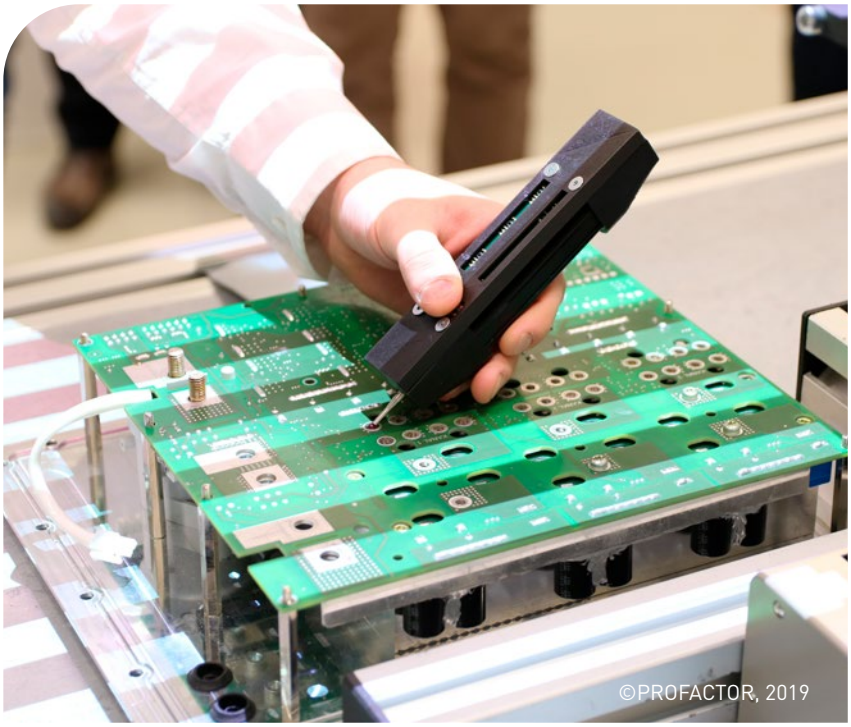
27 %
faster production time

2
key components redesigned for faster production and assembly

20
units in industrial forklift trucks using HyLog fuel systems

20
innovations and processes ready for industry adoption

1
business plan for an endoscopic quality-control sensor



IMPACT

INCREASED CAPACITY
to produce fuel cells that help to reduce carbon emissions

FASTER
manufacturing of high-quality PEM fuel cells

MORE COMPETITIVE
EU-based fuel-cell supply chains

ADOPTABLE
solutions for industry, for a quicker return on the EUR 3.2 million public investment

REDUCED WASTE
thanks to improved in-line quality control technology

250
potential new jobs from the technology

FASTER, CHEAPER, HIGH-QUALITY FUEL-CELL PRODUCTION

European manufacturers need scalable, efficient processes to manufacture high-quality PEM fuel cells for a more competitive fuel-cell industry in Europe.

COMPONENT AND PROCESS UPGRADE

Research organisations and technology companies have analysed and redesigned a PEMFC production line and key components to scale up the manufacturing process. **The goal?** To develop flexible technology and processes fuel-cell manufacturers can integrate to reduce bottlenecks, quality issues and end-of-line rejections. **Key results?** Innovative component designs, manufacturing and quality-control technology and processes. Results can be adapted to other lines, supporting a more secure, competitive supply of fuel cells in Europe.

FIND OUT MORE

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FUEL CELLS AND HYDROGEN JOINT UNDERTAKING

A partnership dedicated to clean energy and transport in Europe

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