

PACE

PATHWAY TO A COMPETITIVE EUROPEAN FC/MCHP MARKET



Project ID:	700339
PRD 2023:	Panel 4 – H2 end uses – stationary applications
Call topic:	FCH-02.9-2015: Large scale demonstration μ CHP fuel cells
Project total costs:	EUR 91 681 943.33
Clean H₂ JU max. contribution:	EUR 33 932 752.75
Project period:	6.1.2016–30.4.2023
Coordinator:	European Association for the Promotion of Cogeneration VZW, Belgium
Beneficiaries:	Baxi Innotech GmbH, BDR Thermea Group BV, Bosch Thermotechnik GmbH, Danmarks Tekniske Universitet, Element Energy, Element Energy Limited, ERM France, EWE AG, Fachhochschule Zentralschweiz – Hochschule Luzern, Hexis AG, Hexis GmbH, Remeha BV, Remeha GmbH, Remeha NV, Senertec Kraft-Wärme-Energiesysteme GmbH, SOLIDpower GmbH, SolydEra SpA, Sunfire Fuel Cells GmbH, Sunfire GmbH, Vaillant GmbH, Viessmann Climate Solutions SE, Viessmann Elektronik GmbH, Viessmann Werke Allendorf GmbH, Viessmann Werke GmbH & Co. KG

<http://www.pace-energy.eu>

QUANTITATIVE TARGETS AND STATUS

Target source	Parameter	Unit	Target	Achieved to date by the project	Target achieved?
Project's own objectives	No of units sold	units	2 800	3 091	✓
	Time before stack replacement	years	10-year system lifetime with > 50 % reduction in stack replacement or no stack replacement during a 10-year service plan	15-year system lifetime with > 50 % reduction in stack replacement or no stack replacement during a 10-year service plan	✓
	Manufacturing capacity (average company level)	units per year per OEM	1 000	2 300	✓
	Availability	%	99	96.2–99	⚙️ (for some units)

PROJECT AND OBJECTIVES

PACE is unlocking the large-scale European deployment of the state-of-the-art smart energy solution for private homes: fuel cell micro-co-generation. PACE will see up to 2 800 households across Europe reaping the benefits of this home energy system. The project enables manufacturers to move towards product industrialisation and fosters market development at the national level by working with building professionals and the wider energy community. The project uses modern fuel cell technology to produce efficient heat and electricity in homes, empowering consumers in their energy choices.

NON-QUANTITATIVE OBJECTIVES

- Deploy new manufacturing processes for increased capacity.
- Develop efficient routes to market: innovation in sales, marketing and the consumer offer.
- Provide efficient field support.
- Identify potential revenue streams from participation in the power markets and the economic added value from the avoidance of grid expansions.
- Develop a platform approach to component standardisation for fuel cell micro combined heat and power (mCHP) units across the EU supply chain.
- Create the conditions for expansion of the market for fuel cell mCHP units across Europe.
- Increase awareness of fuel cell mCHP systems in European markets.

PROGRESS AND MAIN ACHIEVEMENTS

- The installation of units will continue until the end of the project.
- The project has increased the system lifetime to more than 15 years and improved the maintenance interval using new/improved components. The system (excluding stack) lifetime was 10 years at the start of project; this increased to a minimum of 15 years by the end of the project.
- By the end of the project, all partners will eliminate the need for stack replacement during a customer's 10-year service plan (the worst case is 7 years, as reported at the project's start).

FUTURE STEPS AND PLANS

- All of the 2 800 units to be deployed in the project will be installed.
- PACE will continue data collection and analysis to provide a fact-based understanding of the performance and benefits of the technology.
- The project will identify ongoing regulatory barriers to the deployment of mCHP units across Europe, and collaborate with industry and policymakers to remove such barriers.
- The project will develop use cases for fuel cell mCHP units relevant beyond the project finish point, including an assessment of the economic potential of fuel cell mCHP units.