

PACE

PATHWAY TO A COMPETITIVE EUROPEAN FC MCHP MARKET



Project ID	700339
PRR 2024	Pillar 4 – H ₂ end uses: stationary application
Call topic	FCH-02.9-2015: Large scale demonstration µCHP fuel cells
Project total cost	EUR 91 681 934.33
Clean H₂ JU max. contribution	EUR 33 932 752.75
Project period	1.6.2016–30.4.2023
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 Limited, Environmental Resources Management France, EWE AG, Fachhochschule Zentralschweiz – Hochschule Luzern, HEXIS AG, HEXIS GmbH, New Enerday GmbH, Remeha BV, Remeha GmbH, Remeha NV, SenerTec Kraft-Wärme Energiesysteme GmbH, Solidpower GmbH, SolydEra SpA, 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>

PROJECT TARGETS

Target source	Parameter	Unit	Target	Achieved to date by the project	Target achieved?	SOA result achieved (by others)	Year in which SOA result was reported
Project's own objectives	Units sold	number	2 800	3 091	✓	1 046	2017
	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	✓	N/A	N/A
	Manufacturing capacity (average at the company level)	units per year per OEM	1 000	2 300	✓	150	N/A
	Availability	%	99	96.2–99	⚙️	99	2017

PROJECT AND GENERAL OBJECTIVES

PACE unlocked the large-scale European deployment of the state-of-the-art smart energy solution for private homes: fuel cell micro-cogeneration. PACE aimed to see up to 2 650 households across Europe reaping the benefits of this home energy system. The project enabled manufacturers to move towards product industrialisation and fostered market development at the national level by working together with building professionals and the wider energy community. The project used modern fuel cell technology to produce efficient heat and electricity at home, empowering consumers in their energy choices.

NON-QUANTITATIVE OBJECTIVES

Deploy new manufacturing processes to increase capacity.

Develop efficient routes to market, including innovation in sales, marketing and consumer offers.

Provide efficient field support.

Identify potential revenue streams from participation in the power markets and the economic added value of the avoidance of grid expansions.

Develop a platform approach to component standardisation for fuel cell micro combined heat and power (CHP) across the EU supply chain.

Create the conditions for expansion of the market for fuel cell micro-CHP across Europe.

Increase awareness in European markets of micro-CHP fuel cells.

PROGRESS AND MAIN ACHIEVEMENTS

A total of 2 674 units were commissioned (3 095 units sold) by the end of April 2023.

The project has increased the lifetime of the system to 15–20 years and improved the maintenance interval using new/improved components. The system (excluding stack) lifetime was 10–15 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 virtually eliminated the need for stack replacement during a customer's 10-year service plan (the worst case is 7 years at the project's start).

FUTURE STEPS AND PLANS

The project has finished.

Establish an alliance that will gather major European manufacturers in the area of stationary fuel cells and other relevant industry and research stakeholders to develop evidence and advocacy, with a view to promoting this solution at the EU level and supporting national initiatives.