

HORIZON
2020

Automated mass-manufacturing and quality assurance of Solid Oxide Fuel Cell stacks

Fact Sheet

Project Information

qSOFC

Grant agreement ID: 735160

[Project website](#)

DOI

[10.3030/735160](https://doi.org/10.3030/735160)

Project closed

EC signature date

9 December 2016

Start date

1 February 2017

End date

31 July 2020

Funded under

SOCIETAL CHALLENGES - Secure, clean and efficient energy

Total cost

€ 2 110 015,00

EU contribution

€ 2 110 015,00


Coordinated by

TEKNOLOGIAN

TUTKIMUSKESKUS VTT OY

 Finland

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Objective

qSOFC project combines leading European companies and research centres in stack manufacturing value-chain with two companies specialized in production automation and quality assurance to optimize the current stack manufacturing processes for mass production. Currently the state-of-the-art SOFC system capital expenditure (capex) is 7000...8000 €/kW of which stack is the single most expensive component. This proposal focuses on SOFC stack cost reduction and quality improvement by replacing manual labour in all key parts of the stack manufacturing process with automated manufacturing and quality control. This will lead to stack cost of 1000 €/kW and create a further cost reduction potential down to 500 €/kW at mass production (2000 MW/year).

During the qSOFC project, key steps in cell and interconnect manufacturing and quality assurance will be optimized to enable mass-manufacturing. This will include development and validation of high-speed cell-manufacturing process, automated 3D machine vision inspection method to detect defects in cell manufacturing and automated leak-tightness detection of laser-welded/brazed interconnect-assemblies.

The project is based on the products of its' industrial partners in stack-manufacturing value-chain (ElringKlinger, Elcogen AS, Elcogen Oy, Sandvik) and motivated by their interest to further ready their products into mass-manufacturing market. Two companies specialized in production automation and quality control (Müko, HaikuTech) provide their expertise to the project. The two research centres (VTT, ENEA) support these companies with their scientific background and validate the produced cells, interconnects and stacks.

Effective exploitation and dissemination of resulting improved products, services, and know-how is a natural purpose of each partner and these actions are boosted by this project. This makes project results available also for other parties and increases competitiveness of the European fuel cell industry.

Fields of science (EuroSciVoc)

[engineering and technology](#) > [mechanical engineering](#) > **[manufacturing engineering](#)**

[engineering and technology](#) > [materials engineering](#) > **[fibers](#)**

[natural sciences](#) > [computer and information sciences](#) > [artificial intelligence](#) > **[computer vision](#)**

[social sciences](#) > [sociology](#) > [industrial relations](#) > **[automation](#)**

[engineering and technology](#) > [environmental engineering](#) > [energy and fuels](#) > **[fuel cells](#)**



Programme(s)

[H2020-EU.3.3. - SOCIETAL CHALLENGES - Secure, clean and efficient energy](#)

MAIN PROGRAMME

[H2020-EU.3.3.8.1. - Increase the electrical efficiency and the durability of the different fuel cells used for power production to levels which can compete with conventional technologies, while reducing costs](#)

Topic(s)

[FCH-02-6-2016 - Development of cost effective manufacturing technologies for key components or fuel cell systems for industrial applications](#)

Call for proposal

[H2020-JTI-FCH-2016-1](#)

[See other projects for this call](#)

Funding Scheme

[FCH2-RIA - Research and Innovation action](#)

Coordinator



TEKNOLOGIAN TUTKIMUSKESKUS VTT OY

Net EU contribution

€ 549 817,50

Total cost

€ 549 817,50

Address

TEKNIIKANTIE 21

02150 Espoo

+ Finland 

Region

Manner-Suomi > Helsinki-Uusimaa > Helsinki-Uusimaa

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Participants (7)



ELRINGKLINGER AG

 Germany

Net EU contribution

€ 431 877,50

Address

MAX EYTH STRASSE 2

72581 Dettingen An Der Erms 

Region

Baden-Württemberg > Tübingen > Reutlingen

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 431 877,50



AKTSIASELTS ELCOGEN

 Estonia

Net EU contribution

€ 200 750,00

Address

VALUKOJA TN 23

11415 TALLIN 

SME 

Yes

Region

Eesti > Eesti > Põhja-Eesti

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

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[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 200 750,00



AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE

 Italy

Net EU contribution

€ 239 750,00

Address

LUNGOTEVERE GRANDE AMMIRAGLIO THAON DI REVEL 76

00196 Roma 

Region

Centro (IT) > Lazio > Roma

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 239 750,00



ELCOGEN OY

 Finland

Net EU contribution

€ 275 750,00

Address

NIITTYVILLANKUJA 4

01510 Vantaa 

SME 

Yes

Region

Manner-Suomi > Helsinki-Uusimaa > Helsinki-Uusimaa

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

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[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 275 750,00



ALLEIMA TUBE AB

 Sweden

Net EU contribution

€ 107 145,00

Address

Storgatan 2

811 81 Sandviken 

Region

Norra Sverige > Norra Mellansverige > Gävleborgs län

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

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[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 107 145,00



HAIKU TECH EUROPE BV

 Netherlands

Net EU contribution

€ 204 925,00

Address

WATERMOLEN 12

6221 BS Maastricht 

SME 

Yes

Region

Zuid-Nederland > Limburg (NL) > Zuid-Limburg

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

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[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 204 925,00



MUKO MASCHINENBAU GMBH

 Germany

Net EU contribution

€ 100 000,00

Address

HEINKELSTRASSE 46
71384 WEINSTADT 

SME 

Yes

Region

Baden-Württemberg > Stuttgart > Rems-Murr-Kreis

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

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Total cost

€ 100 000,00

Last update: 18 August 2022

Permalink: <https://cordis.europa.eu/project/id/735160>

European Union, 2025