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Durable Solid Oxide Fuel Cell Tri-generation System for Low Carbon Buildings

Fact Sheet

Project Information

TriSOFC

Grant agreement ID: 303454

Project closed

Start date
1 August 2012

End date
31 July 2015



Funded under
Specific Programme "Cooperation": Joint
Technology Initiatives

Total cost
€ 2 727 219,06

EU contribution
€ 1 481 391,00

Coordinated by
THE UNIVERSITY OF
NOTTINGHAM
 United Kingdom

Objective

The project (TriSOFC) aims to develop and evaluate the performance of the first-of-its-kind LT-SOFC tri-generation system for low carbon buildings. The system is based on the integration of LT-SOFC stack and a novel liquid desiccant unit.

A 1.5kW low-cost durable LT-SOFC tri-generation prototype system will be designed optimised, constructed and tested. The tri-generation system incorporates additional components including a fuel processor, to generate reformat gas if natural-gas used

as fuel, and equipment for the electrical, mechanical and control balance of plant (BoP). With high efficiency, low-cost and long-term duration in mind, all these components will be first tested in the laboratory for further optimisation and miniaturisation. The performance of the tri-generation system will be tested using the Creative Energy Homes (low/zero carbon homes) at the University of Nottingham, UK.

The tri-generation system will be used primarily in the low carbon homes/buildings. The system will be tested using natural-gas but it could be modified for use with other clean/renewable energy fuels (e.g. alcohol, biomass liquid fuel and biodiesel).

The system has the potential to reduce CO₂ emission by 70% compared to a traditional energy production system comprising of separate condensate power plant, boiler and compressor-driven cooling units. The successful development of the proposed project will promote LT-SOFC applications for provision of power, heat and cooling. The commercialisation of the system will bring economic and environmental benefits to the EU.

Fields of science (EuroSciVoc)

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

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

[natural sciences](#) > [chemical sciences](#) > [organic chemistry](#) > **[alcohols](#)**

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

[engineering and technology](#) > [industrial biotechnology](#) > [biomaterials](#) > **[biofuels](#)**



Programme(s)

[FP7-JTI - Specific Programme "Cooperation": Joint Technology Initiatives](#)

Topic(s)

[SP1-JTI-FCH.2011.3.4 - Proof-of-concept fuel cell systems](#)

Call for proposal

FCH-JU-2011-1

[See other projects for this call](#)

Funding Scheme

[JTI-CP-FCH - Joint Technology Initiatives - Collaborative Project \(FCH\)](#)

Coordinator



THE UNIVERSITY OF NOTTINGHAM

EU contribution

€ 331 267,00

Total cost

No data

Address

University Park

NG7 2RD Nottingham

 **United Kingdom** 

Region

East Midlands (England) > Derbyshire and Nottinghamshire > Nottingham

Activity type

Higher or Secondary Education Establishments

Links

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

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

[HORIZON collaboration network](#) 

Participants (8)



KUNGLIGA TEKNISKA HOEGSKOLAN

 Sweden

EU contribution

€ 337 629,68

Address

BRINELLVAGEN 8
100 44 Stockholm 

Region
Östra Sverige > Stockholm > Stockholms län

Activity type
Higher or Secondary Education Establishments

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



THE UNIVERSITY OF BIRMINGHAM

 United Kingdom

EU contribution
€ 251 633,00

Address
Edgbaston
B15 2TT Birmingham 

Region
West Midlands (England) > West Midlands > Birmingham

Activity type
Higher or Secondary Education Establishments

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



INSTITUTO DE ENGENHARIA MECANICA

 Portugal
EU contribution

€ 89 705,00

Address

AVENIDA ROVISCO PAIS 1 INSTITUTO SUPERIOR TECNICO
1049-001 Lisboa 

Activity type

Research Organisations

Links

- [Contact the organisation](#) 
- [Participation in EU R&I programmes](#) 
- [HORIZON collaboration network](#) 

Total cost

No data



GETTFUELCELLS INTERNATIONAL AB 

 Sweden

EU contribution

€ 71 104,32

Address

JARNTORGET 78
11127 STOCKHOLM 

Activity type

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

Links

- [Contact the organisation](#) 
- [Website](#) 
- [Participation in EU R&I programmes](#) 
- [HORIZON collaboration network](#) 

Total cost

No data



Vestel Savunma Sanayi A.S.

 Türkiye

EU contribution

€ 225 203,00

Address

IHSAN DOGRAMACI BULVAN TITANYUM
ANKARA CANKAYA 

Activity type

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

Links

- [Contact the organisation](#) 
- [Website](#) 
- [Participation in EU R&I programmes](#) 
- [HORIZON collaboration network](#) 

Total cost

No data



PRZEDSIĘBIORSTWO INNOWACYJNO-WDROZENIOWE COMPLEX SP ZOO

 Poland

EU contribution

€ 36 946,00

Address

UL. JABLONIOWA 42/6
40 111 Katowice 

Region

Makroregion południowy > Śląskie > Katowicki

Activity type

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

Links

- [Contact the organisation](#) 
- [Website](#) 
- [Participation in EU R&I programmes](#) 
- [HORIZON collaboration network](#) 

Total cost

No data



RISE IVF AB

 Sweden

EU contribution

€ 122 000,00

Address

ARGONGATAN 30
431 53 Molndal 

Region

Södra Sverige > Västsverige > Västra Götalands län

Activity type

Research Organisations

Links

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

[HORIZON collaboration network](#) 

Total cost

No data



INEGI - INSTITUTO DE CIENCIA E INOVACAO EM ENGENHARIA MECANICA E ENGENHARIA INDUSTRIAL

 Portugal

EU contribution

€ 15 903,00

Address

RUA DR ROBERTO FRIAS 400

4200-465 Porto 

Region

Continente > Norte > Área Metropolitana do Porto

Activity type

Research Organisations

Links

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

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

[HORIZON collaboration network](#) 

Total cost

No data

Last update: 2 August 2019

Permalink: <https://cordis.europa.eu/project/id/303454>

