

FUEL CELLS FOR STATIONARY POWER APPLICATIONS

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KEY SPEAKERS INCLUDE:

Nigel Brandon,
Director,
Sustainable Gas Institute (SGI),
Faculty of Engineering,
Department of Earth Science & Engineering,
Imperial College London

Fiona Riddoch,
Managing Director,
COGEN Europe

Bill Ireland,
Chair Hydrogen London Stationary Fuel Cell Group
and Chief Executive,
Logan Energy

9 February 2016
Institution of Mechanical Engineers, London

More details available at
events.imeche.org/fuelcells

Power Industries Division
Seminar



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FUEL CELLS FOR STATIONARY POWER APPLICATIONS

9 February 2016,
Institution of Mechanical Engineers, London



FUEL CELLS; THE NEXT POWER GENERATION TECHNOLOGY. MEETING THE GOVERNMENT'S CLIMATE CHANGE LEVY.

Fuel cells offer the high efficiency of reciprocating engines without the noise and high maintenance for moving parts. Like reciprocating engines, fuel cells are also well suited to combined heat and power (CHP) applications. Fuel cell technology is fast becoming a commercial opportunity, so now is the time to understand the technology in order to consider it for stationary power applications.

Join us at **Fuel Cells for Stationary Power Applications** to explore fuel cell technologies and hear about commercial installations, especially for combined heat and power (CHP). The seminar will examine domestic CHP, industrial and commercial applications, together with the attendant manufacturing and operational challenges.

Key topics include:

- The role of fuel cells in delivering secure and sustainable energy systems
- Operating experience across Europe
- How high efficient fuel cells will change domestic energy supply and the potential of Micro-CHP fuel cells in UK homes
- Stationary fuel cells in distributed generation
- Fuel cell CCHP and CHP London installations

+ BENEFITS OF ATTENDANCE:

- Understand the **current status of technology** for stationary fuel cells
- Discover **current commercial suppliers**
- Gain an understanding of **suitable installations and the economics** of new market developments
- Invaluable **networking opportunities** with power plant developers, consultants and investors
- Learn how to exploit the **commercial benefits** from new opportunities

ORGANISING COMMITTEE

Fossil Fuel Committee, Power Industries Division, The Institution of Mechanical Engineers

With special thanks to:

Tim Jackson

FIMechE, MEI, MBA Business Development Manager, InfraCo Africa Limited and Immediate Past Chair, The Institution of Mechanical Engineers Fossil Power Committee

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PROGRAMME

TUESDAY 9 FEBRUARY 2016

08:30

REGISTRATION AND REFRESHMENTS



09:00

CHAIR'S OPENING REMARKS

Tim Jackson, Business Development Manager, InfraCo Africa Limited and Immediate Past Chair, Institution of Mechanical Engineers Fossil Power Committee

TECHNOLOGIES AND FUELS

09:10

KEYNOTE: FUEL CELL TECHNOLOGIES FOR STATIONARY POWER APPLICATIONS

Nigel Brandon, Director Sustainable Gas Institute (SGI), Faculty of Engineering, Department of Earth Science & Engineering, Imperial College London

- An introduction to fuel cell technologies
- The role of fuel cells in delivering secure and sustainable energy systems
- The international status of fuel cell developments for stationary power applications

09:40

HYDROGEN OR NATURAL GAS; FUEL SUPPLY, COST AND CARBON?

Alastair Rennie, Project Director, Amec Foster Wheeler and Vice Chair, UK Hydrogen Fuel Cell Association

- Issues around heat and energy storage
- A basis for low-cost fuel
- The H21 project-testing an option for the UK



10:05

QUESTION AND ANSWER SESSION

DOMESTIC COMBINED HEAT AND POWER: DEVELOPERS EXPERIENCES AND PROJECTS

10:20

OPERATING EXPERIENCE: COGEN EUROPE TO PRESENT THE ENE.FIELD PROJECT

Fiona Riddoch, Managing Director, COGEN Europe

- Co-funded by industry and the European Union ene.field will place up to 1,000 fuel cell micro-CHPs into homes across 11 European countries
- Project runs from 2012-2017 - Europe's largest deployment of fuel cell micro-CHP to date featuring 26 partners
- Installation rates among the most active project partners took off in the second half of 2015

10:45

HOW HIGH EFFICIENT FUEL CELLS WILL CHANGE DOMESTIC ENERGY SUPPLY

Andreas Ballhausen, Commercial Director, SOLIDpower GmbH

- Technical concept of BlueGEN and EnGen
- Marketing position of high efficient fuel cells
- Experiences in the market



11:10

NETWORKING REFRESHMENT BREAK

11:40

DEVELOPMENT AND APPLICATION OF FUEL CELL TECHNOLOGY IN THE DOMESTIC HEATING SECTOR

Jeff House, Legislation and Regulatory Manager, BAXI

- Fuel cell developments in home heating over the past 15 years
- Field trial experiences of fuel cell application across the EU
- Findings and progress explored - together with wider aspects of fuel cell deployment in the heating sector

12:05

THE STEEL CELL: A CHANGE OF POWER

Mark Selby, Chief Technology Officer, Ceres Power

- The Steel Cell is one of the most cost-effective and robust fuel cells ever developed
- Steel Cells allow decentralised energy products to enable a change in the way homes and businesses generate their power
- Steel Cells reduce energy cost, CO₂ emissions and improve energy security and reliability

PROGRAMME

TUESDAY 9 FEBRUARY 2016 (CONT.)

12:30

THE POTENTIAL OF MICRO-CHP FUEL CELLS IN UK HOMES

Christian Engelke, Technical Director, Viessmann

- Two years' market experience after commercial launch of Vitocalor 300-P fuel cell boiler
- Has it delivered the expectation?
- What is happening next?

12:55

QUESTION AND ANSWER SESSION – OPERATORS AND DEVELOPERS PANEL

13:15

NETWORKING LUNCH



INDUSTRIAL SYSTEMS: APPLICATIONS AND OPERATING EXPERIENCES

14:15

STATIONARY FUEL CELLS IN DISTRIBUTED GENERATION

Tim Longstaff, Partner, Roland Berger

- European Commission and Fuel Cells and Hydrogen Joint Undertaking (FCH JU) funded study compiled with a coalition of more than 30 stakeholders using first-hand industry data
- Study analyses the commercialisation perspectives for fuel cell distributed generation in Europe
- Market potential, technology maturity, competitive performance and business outlook of large-scale stationary fuel cells for industrial applications

14:45

LONDON'S FUEL CELL POPULATION

Bill Ireland, Chair Hydrogen London Stationary Fuel Cell Group and Chief Executive, Logan Energy

- Transport for London, Palestra Building
- The Walkie Talkie, 20 Fenchurch Street
- The Crown Estates, Quadrant 3



15:15

NETWORKING REFRESHMENT BREAK

15:45

THE CHALLENGES OF REMOTE POWER APPLICATIONS AND SOLUTIONS FOR FUEL CELLS

Aaron Stevens, Product and Strategic Marketing Manager, Distributed Power and Generation, Intelligent Energy

- Outline design and packaging of the fuel cell
- Relation of features to remote prime power and backup power applications
- Economics, H2 logistics and field experience case study: Intelligent Energy's fuel cell rollout in India

16:15

LARGE SCALE DEVELOPMENT OF FUEL CELLS

Vinay Mulgundmath, Manager Green Development Group, Doosan Babcock

- Outline fuel cell technologies and applications
- Challenges to large scale development
- Case studies of successful fuel cell deployment

16:45

QUESTION AND ANSWER SESSION – INDUSTRIAL SYSTEMS PANEL

17:05

CHAIR'S CLOSING REMARKS

17:15

END OF SEMINAR

For the most up-to-date and detailed programme for the event, please visit events.imeche.org/fuelcells

- This programme is subject to change.
- The Institution is not responsible for the views or opinions expressed by individual speakers.

SPEAKERS AND CONTRIBUTORS

KEYNOTE SPEAKERS

PROFESSOR NIGEL BRANDON OBE, FREN
**DIRECTOR SUSTAINABLE GAS INSTITUTE (SGI), FACULTY OF
ENGINEERING, DEPARTMENT OF EARTH SCIENCE & ENGINEERING,
IMPERIAL COLLEGE LONDON**

Nigel Brandon OBE FEng is an electrochemical engineer whose research interests focus on electrochemical devices for energy applications. He is Director of the Hydrogen and Fuel Cell SUPERGEN Hub, Co-Director of the Energy Storage SUPERGEN Hub, and Founder Director of the Sustainable Gas Institute at Imperial College London. Prior to joining Imperial College he held research positions with BP and Rolls-Royce. He was a Founder of the UK fuel cell company Ceres Power in 2001. He has been awarded the Royal Academy of Engineering Silver Medal and the ASME Francis Bacon medal for his contribution to fuel cell technology.

DR FIONA RIDDOCH
MANAGING DIRECTOR, COGEN EUROPE

Fiona Riddoch joined COGEN Europe as Managing Director in November 2007. Fiona has a PhD in Physics from the University of St Andrews and an MBA from the University of Edinburgh. She has held several engineering and management roles in sectors ranging from consumer electronics to wind turbines and building system controls. She spent a large part of her career at Honeywell Controls Ltd.

BILL IRELAND MA, CENG, MCIBSE, MASHRAE, MFEANI
**CHAIR, HYDROGEN LONDON STATIONARY FUEL CELL GROUP
AND CHIEF EXECUTIVE, LOGAN ENERGY**

Bill Ireland has over 25 years' experience in engineering with specialist knowledge in energy in the built environment, alternative technologies, sustainable design and innovation in technology. Bill joined Logan Energy Limited in 2008 as Director of Operations and became Managing Director and CEO in 2012, responsible for driving the business of Logan Energy in the UK, Europe and further afield. He has had a major role in the design and implementation of all of Logan's recent projects. As Chair of Hydrogen London's Stationary Group, Bill assists the association with determining and implementing the group's objectives.

SPEAKERS

ALASTAIR RENNIE
**PROJECT DIRECTOR, AMEC FOSTER WHEELER AND VICE CHAIR UK
HYDROGEN FUEL CELL ASSOCIATION**

Alastair Rennie has had over 35 years of business experience encompassing general management and large project management, maintenance, construction and design engineering as client, consultant and contractor, with 19 years as a Project Director with Amec Foster Wheeler. Key skills and achievements include: organisational and staff development and team-building, generating synergy between companies and between departments, project management and interface management, innovating, patent holder and new business development. Since 2000 he has sought out the issues and opportunities in renewable and low carbon energy so that Amec Foster Wheeler now has an understanding and interest in CCS and hydrogen system options.

MARK SELBY
CHIEF TECHNOLOGY OFFICER, CERES POWER

Mark Selby joined Ceres Power in 2006 and was appointed to the Board as Chief Technology Officer in February 2013. He is responsible for leading all aspects of the strategy and delivery of the Steel Cell technology development.

CHRISTIAN ENGELKE
TECHNICAL DIRECTOR, VIESSMANN

Christian Engelke joined Viessmann in 2007, tasked with overseeing the manufacturer's UK product portfolio. He is responsible for all technical matters, from product performance to systems design, as well as being responsible for the project division covering Viessmann's industrial boilers, large biomass and CHP technologies. Graduating in mechanical engineering, Christian began his career in Germany, working as a development engineer in R&D. Responsible for developing and launching one of the first pre-mix boilers in the UK, Christian came to England in 1996. Christian is also involved with a number of trade associations shaping the heating market to become more energy efficient.

TIM LONGSTAFF
PARTNER, ROLAND BERGER

Tim Longstaff is a Partner at Roland Berger based in their London office. Starting his career at Rolls-Royce, Tim worked for Roland Berger in the 1990s, WS Atkins (first as Managing Director of the power division then Director of Corporate Strategy) and PwC. Subsequently, he re-joined Roland Berger in London. Tim has extensive functional expertise in strategy development and an industrial focus on technical services and the worldwide energy industry. He holds a Masters degree in Mechanical Engineering from Cambridge University, an MPhil in Solid Oxide Fuel Cells from the University of Keele, and an MBA from SDA Bocconi in Milan.

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9 February 2016, Institution of
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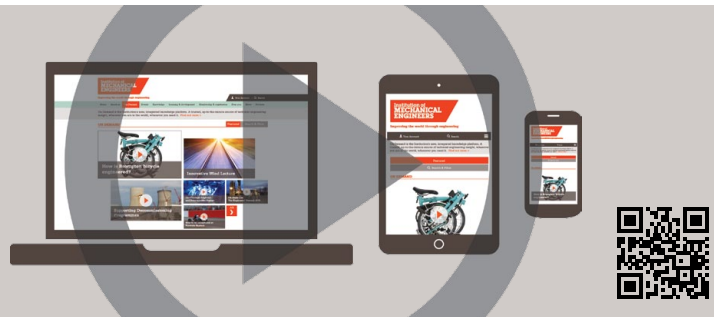
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