

Seminar:

Opportunities for Flexible Technology in an Evolving Energy System



In partnership with

nationalgrid

Tuesday 13 September 2016

IGEM House, Kegworth DE74 2DA

It is becoming increasingly clear that investors and utilities are reluctant to commit to the construction of new gas-fired generation plant of significant scale to replace the older coal stations. Uncertainties of financial return are the likely main reason – as well as being somewhat at the mercy of Government policy changes.

Existing coal stations are uneconomic when operating in a balancing/capacity margin role in the grid system because of low utilisation – and can close earlier than anticipated as happened with part of Fiddlers Ferry earlier in 2016.

This seminar will discuss the steps to be taken to ensure supplies are maintained and demand managed – particularly should we have a cold winter between now and 2020 – as well as presenting current experience of operation under the existing balancing initiatives such as the Capacity market, STOR, SBR and Demand Response.

However such situations where the generation margin is slim or even potentially negative do provide opportunities for new forms of plant and energy storage to be progressed with more urgency. These could include, for instance, a resurgence of interest in pumped hydro and the use of automobile electric car batteries as electrical energy stores – either new or used.

This is a “follow-on” seminar to the successful IDGTE seminar held last September on “Technologies required to balance the Grid” and highlights the changes that have occurred during the last year – an update on an evolving situation.

PROGRAMME

09:00 Registration

09:15 Keynote Speaker - Paul Lowbridge, Power Responsive Program Manager, National Grid

A forward view of the evolving electricity system landscape to 2020 and beyond

Paul will present a forward view of the evolving electricity system landscape following the recently published 2016 Future Energy Scenarios and will outline the System Operator view of the opportunities this presents for different sources of flexibility to play a key role in helping to balance this system.



Paul is responsible for the Power Responsive campaign at National Grid and System Operator Demand Side Response Strategy. Launched in June 2015, the Power Responsive campaign aims to facilitate the Energy Industry and Large Industrial/Commercial demand users to collaboratively address barriers; aiming to achieve significant growth in Demand Side Response participation in UK energy markets.

**09:55 Update on Capacity Market Changes and Future Demand Side Management
Speaker: Cameron Welsh, Flexitricity Ltd**

The early part of 2016 saw some structural changes to the Capacity Market and a major consultation exercise by DECC. This consultation also identified other areas of policy that will affect role of generation assets for use in demand response. The presentation will provide an update on current thinking and policy in the following areas; capacity market changes including early auction, embedded benefits review and DEFRA’s work on standby diesel emissions. This will be of particular interest to those sites and stakeholders keen to understand how demand side management is likely to evolve in the medium term.



Cameron Welsh has a background in electrical and electronic engineering. He has spent the last 25 years delivering a range of business improvement projects across manufacturing, process engineering, data centre and public sector organisations. Flexitricity has pioneered demand response in the UK and is recognised as a leading partner for innovation and delivery of services.

10:35 Tea/coffee break

Is Energy Storage coming of age?

10:50 Battery Storage in the Ascendancy

Speaker: TBC

The evolution of cheaper automotive Li-ion batteries is acting as a spur to electrical energy storage for electrical system support – from domestic to transmission system scale. What rate of increase and power is anticipated?

11:30 Energy storage innovation: liquid air as a storage medium and energy vector

Speaker: Dr Jonathan Radcliffe, Senior Research Fellow at the University of Birmingham and Policy Director for the Birmingham Energy Institute

Jonathan is co-Director of the £12m Birmingham Centre for Cryogenic Energy Storage, which has a grid-connected pilot-scale energy storage plant on campus; and of the £4m national Energy Storage Supergen Hub, for which he leads engagement with policy makers and regulators. His research focuses on policy and techno-economic analysis of energy systems, in particular enabling the deployment of energy storage. Jonathan is leading a £5m EPSRC-funded project, 'Manifest', which combines national energy storage facilities within a joint research programme.



Jonathan has published on energy storage technology and energy innovation processes, with current projects funded by Research Councils, Government and Industry. Jonathan studied physics at Imperial College and Cambridge, and spent much of his career in Government covering science and innovation policy before joining Birmingham in 2013.

12:10 Lunch

12:50 Advantages of Microgrids

Is there a commercial or other case for micro-grids connected to the Distribution/Transmission grid systems? ABB and consulting firm Ove Arup believe that there is - and that they would encourage adoption of local energy storage with renewable generation as well providing significant cost savings for commercial companies.

Experience of Operation and Control of an islanded microgrid in a remote location in Canada

Speaker: George Cooper, Hatch, Mississauga, Ontario



George Cooper is a Mechanical Engineer in the Thermal Energy Business Unit at Hatch, a firm that provides engineering, procurement and construction management services to the Mining, Metallurgical, Energy, and Infrastructure sectors. George has worked on a variety of thermal power engineering projects including Natural Gas Combined Cycle, Reciprocating Engine CHP, Nuclear and Coal Fired power plant facilities for both utility and captive power applications. He has also worked on a number of unique energy projects such as solar/wind diesel hybrid power for remote mining operations, coal-to-liquids, and plasma gasification waste to energy facilities.

13:30 Application of Micro-grid systems – a Viable approach for the UK?

Speaker: Maria Brucoli, Senior Engineer, Arup Energy Consulting

The presentation will cover typical successful applications of Microgrids around the world and discuss the existing projects and opportunities in the UK



Maria is a senior engineer in the Energy and Climate Change Consulting team at Arup and has more than 12 years' experience working on microgrids.

From 2004 to 2009 she was at Imperial College, London, first as a PhD student and then as a Research Associate. While at Imperial, her research was focused on the design of microgrid protection systems, modelling of inverter-interfaced distributed energy sources and developing suitable microgrid fault analysis techniques.

Since joining Arup in 2009, she has been working on a number of microgrid projects including a research lab, the NYSERDA Community Microgrids Prize, a number of off-grid systems and a research project on urban microgrids.

14:10 Report on Developing Best Available techniques for Combustion Plant operating in the Balancing Market
Speaker: Keir McAndrew, Associate Director, Amec Foster Wheeler E&I Europe

The final report was distributed to stakeholders at the beginning of August and will be published by DECC shortly. The report highlights the types of techniques that can be applied to a range of combustion plants supplying the balancing market as well as the potential costs in their application. The report is the first to make recommendations for BAT for plant operating low hours and under intermittent operation and, as such, is of interest to operators and competent authorities across the UK and beyond.'



Amec Foster Wheeler Environment & Infrastructure UK Ltd supports an array of government, multi-national and local customers through the whole policy life-cycle. We are recognised for the quality, reliability, objectivity and influence of our work. Keir formerly worked for both the Scottish Environment Protection Agency and the European Commission and is one of Europe's foremost experts in the development and application of BAT across a range of industrial activities including electricity supply and industrial energy production.

14:50 Is the Lack of a Long-Term Strategy Inhibiting Investment? - A Developer's View

Speaker: Mike Benson, Carlton Power



Carlton Power is one of the UK's leading developers of power stations and energy infrastructure. The presentation will discuss the impact of current strategy, or the lack of it, and market conditions generally, on potential developments in the UK power supply industry.

15:30 Tea/coffee break

Workshops (booth sessions) are organised where subjects can be discussed in smaller groups, as shown below:

Booth Sessions (3 simultaneous streams)

	Stream A	Stream B	Stream C
15:45	Market opportunities for sources of electricity flexibility Paul Lowbridge	Flexitricity Cameron Welsh	Combustion Plant in Balancing Market Keir McAndrew
16:15	Sizing and Design of Hybrid Power Projects George Cooper	Energy Storage – Liquid Air Dr Jonathan Radcliffe	Developer's View Mike Benson
16:45	Linked Microgrid Systems Maria Bruccoli	Energy Storage - Battery System Experience - TBC	

17:15 Finish

For delegates wishing to miss the traffic an evening meal has been arranged at a hotel nearby. The price for this is £20 (ex VAT).



The Institution of Diesel and Gas Turbine Engineers
Bedford Heights,
Manton Lane
Bedford
MK41 7PH

In partnership with

nationalgrid



01234 214340

enquiries@idgte.org

www.idgte.org

Seminar: Opportunities for Flexible Technology in an Evolving Energy System

Registration Form

Seminar Price

Delegate	£285 (ex VAT)	IDGTE member	£242.25 (ex VAT)
Student/Retired	£100 (ex VAT)	Evening meal	£20 (ex VAT)

Price includes seminar, teas/coffees, lunch, delegate pack, wifi and parking.

Delegate details

Mr/Mrs/Ms _____ First Name _____ Surname _____
Job title _____ Company _____
Address _____

Postcode _____ Phone _____
Email _____

Ways to pay

Cheque. Enclosed is our cheque made payable to IDGTE.

Please invoice quoting reference _____

Credit/Debit card (not AMEX) Card No _____

Expiry Date: _____ 3 digit security code _____ Amount £ _____

Bank transfer payable to The Institution of Diesel and Gas Turbine Engineers to:

National Westminster Bank plc, Bedford, UK. Sort Code: 60 02 13 Account Number: 51275368

Conditions

No refunds shall be issued for cancellations received after 30 August 2016. However, a substitute delegate may attend in your place.

Disclaimer

The IDGTE is endeavouring to meet the needs of the industry by transfer of knowledge from presenters to delegates registered for the event. A condition of registration is that the IDGTE, or presenters, cannot be held responsible for the information provided, changes to the advertised information, or for the services provided by IGEM conference centre.

Venue Details: IGEM House, 28 High St, Kegworth, Derbyshire DE74 2DA

Telephone: +44 (0)1509 678182

Please complete and return to IDGTE (details below)

The Institution of Diesel and Gas Turbine Engineers
Bedford Heights,
Manton Lane
Bedford
MK41 7PH

 01234 214340 enquiries@idgte.org www.idgte.org

In partnership with

nationalgrid