Combined Heat & Power Conference

Thursday 5th March 2020 • Gibson Hotel, Dublin

In partnership with

Gas Networks Ireland

Free to attend

www.irishchpconference.com

Combined Heat & Power Conference

Introduction to CHP

CHP, also known as 'co-generation', is the simultaneous generation of electricity and heat from a primary fuel such as natural gas. Electricity is generated on site by using natural gas to drive an alternator connected to an engine. The heat from the exhaust fumes generated by the engine is harvested to provide heating and hot water for buildings, to supply district heating systems or process heat for industry (e.g. dairy processing plants and pharmaceutical operations). Some of the thermal energy can also be used to provide cooling and air conditioning through the use of absorption chiller technologies (known as 'trigeneration'). CHP technology is mature and well proven, and is expected to play an important role in Ireland's transition to a lower carbon energy mix. This technology, combined with the introduction of renewable gas (biomethane) into Ireland's energy mix, will help Ireland to reach the ambitious target of delivering 70% of its electricity from renewable energy by 2030.

Financial savings

Due to potential inefficiencies in centralised electricity generation and transportation, plus the resulting cost of electricity from energy suppliers, significant financial savings can be made by generating electricity on site to meet local requirements. Using co-generation to provide both heat and electricity on site allows a business to reduce overall energy costs resulting in a significant competitive and productivity advantage.

Environmental benefits

In conventional centralised electricity generation much of the input energy (over 50%) is lost to the atmosphere as waste heat. Distributed electricity generation, through the installation of suitably designed CHP systems, makes use of almost all of the heat generated in the generation process locally – in 2017 the useful heat output was estimated at 99% of the total heat generated by CHP plants. **The efficiency of a CHP plant can exceed 90% if designed and installed correctly, and is typically 20-25% higher than the combined efficiency of heat-only boilers and conventional power stations.** The use of CHP in 2017 avoided 423,000 tonnes of CO_2 emissions when compared with conventional electricity and heat production.

CHP therefore has the potential to be an economic means of improving the efficiency of energy supply, as well as, achieving environmental targets for emissions reductions, which is becoming an increasingly important consideration for all businesses.

Benefits of CHP

- ✔ Significant **reduction** in energy costs
- ✔ **Short project payback** times achievable
- ✔ CO_2 **emissions reduced**
- ✔ **Lower carbon tax**
- ✔ **Security** and **continuity** of **power supply**
- ✔ **Conservation** of valuable **fuel resources**
- ✔ **NZEB** compliance

A cleaner energy future

Gas Networks Ireland, together with its parent company Ervia, published "Vision 2050 – a Net Zero Carbon Gas Network for Ireland" in October 2019. The vision sets out how through a combination of technologies and initiatives the gas network can reduce Ireland's total carbon emissions by one third and create a net zero carbon gas network.

Renewable gas entered the gas network for the first time in 2019, it is a clean, renewable and carbon-neutral fuel, which can significantly improve the sustainability of the natural gas network and reduce dependency on imported natural gas. Renewable gas has the potential to further improve the environmental benefits offered by gas-fired CHP applications.

Conference Programme

0900 CHP introduction and overview

Chair's welcome and introduction: **Therese Murphy,** Principal, **3S Consulting**

Welcome and Introduction
Gas Networks Ireland

Gas as part of the energy transition to 2050
Dr James Watson, Director General, **Eurogas**

Distributed power generation: Benefits of combined heat and power to industry
Fran McFadden, National Customer Acquisition Manager, **Gas Networks Ireland**

CHP's role in UK energy policy
Caroline Bragg, Head of Policy, **Association for Decentralised Energy, UK**

The technical / economic optimisation of heat networks
Martin Crane, Director, **Carbon Alternatives**

Questions & answers / Panel discussion

1100 Morning coffee / networking break

1130 CHP working in practice

The benefits of the ESCO model for energy users
Cormac Healey, Energy Management Lead, **Dublin City Council**

Capturing the benefits of large-scale CHP
Cormac Reynolds, Project Engineer, **University College Dublin**

The use of CHP in the food and beverage industry
William Keeling, Property Director, **Keelings**
Ruud Brouwer, Project Management Consultant, **Keelings**

Overcoming the barriers to developing residential district heating in Ireland
Fintan Lyons, Managing Director, **Kaizen Energy**

Increasingly important role of demand side management
Ed O'Donoghue, Technical Sales Manager, **Electricity Exchange**

Questions & answers / Panel discussion

1315 Chairman's summary followed by networking lunch

1400 Tour of The Gibson Hotel CHP Unit



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CHP in practice

CHP is suitable for a wide range of applications, however it is particularly appropriate as an energy solution, where there is a high demand for both electricity and heat or hot water. At a European level, CHP is embedded across many sectors including food, distilling, agriculture, ceramics, chemicals, refining paper and in the supply chain of many more industries including packaging, food processing and the automotive sector.

Here in Ireland, the levels of CHP applications are low with just 7.3% of Ireland's electricity and 6.3% of the country's heat demand coming from CHP installations in 2017 (the European figure in 2017 was 11.3%).

A large proportion of these CHP units are within the services sector, including hotels and leisure centres. The food and beverage sector also represents a major industry powered by CHP. Hospitals and nursing homes are another sector that is particularly well suited to CHP due to its high demand for electricity, heat and hot water.

> *"CHP is an important element of the transition to a diverse and low carbon energy mix."*

Policy environment

European Union energy policy requires that all member states take due consideration of the role CHP can play in meeting energy efficiency targets. It requires analysis of CHP as a potential solution for new and refurbished electricity generating stations, major industrial installations that generate waste heat at a useful temperature, and large-scale new and refurbished district heating systems. Electricity generated from high efficiency CHP is also required to have guaranteed access to the electricity grid and to be provided with priority dispatch.

On 17 June 2019, the Government published the wide-reaching Climate Action Plan setting out a cross-sector suite of objectives and actions aimed at reducing Ireland's carbon emissions. The plan includes a number of new and existing measures that will have broad implications for the energy sector. The Climate Action Plan includes an ambitious target to **deliver 70% of Ireland's electricity from renewable energy** by 2030. CHP will play a key role – it has the potential to support the growth of sectors with high power demand in a sustainable manner, while also capable of delivering low-cost heat to industrial processes and district heating. The Plan sets out measures to support further development of CHP through a range of incentives aimed at encouraging uptake in the market place. This includes the Support Scheme for Renewable Heat (SSRH) (which will support the heat output from biomass and biogas high efficiency CHP projects), the RESS (which has the potential to support the electricity output from high efficiency renewable energy CHP plants), and the Climate Action Fund (where the first call for applications included specific provision to support CHP plants).

Speaker panel

Caroline Bragg leads the development of the Association for Decentralised Energy's policy and regulatory work – working closely with members and policymakers to promote the sustainable development of the decentralised energy sector in the UK. She has experience working across heat, energy efficiency and power policy with Government, Ofgem, National Grid and others.

Martin Crane is an independent consultant specialising in the technical and economic aspects of CHP and district heating. Typical work includes, resolving problems on operating systems, assisting in the specification of District Heating (DH), feasibility studies and work for the UK Government. Martin undertakes research to improve DH, writing the UK HIU test regime, in IEA DH projects, looking at retro-fit DH performance, work to improve CHP economics and CO_2 savings and the update of the CIBSE Heat Networks Code of Practice. Previously Martin worked for SSE for 8 years developing and operating new DH schemes.

Cormac Healy is Energy Management Lead for Dublin City Council. He has a background in Economics and Management and has pioneered and championed Energy Performance Contracting in the Local Authority sector, working closely with CoDEMA and the SEAI to prove the model in the Irish market. Cormac was nominated twice as a finalist in the National Energy Awards and was previously Director of Marketing with a State Agency and Managing Director of a company in the private sector.

Fran McFadden is the National Customer Acquisition Manager at Gas Networks Ireland. Fran is responsible for growing the number of natural gas customers nationally and for the company's overall customer acquisition strategy, across the industrial, commercial, new housing and mature domestic sectors. A Donegal native, Fran has worked in Gas Networks Ireland for over twelve years. Prior to joining Gas Networks Ireland, Fran held sales management positions in the telecommunications sector, with Artesyn Technologies.

Therese Murphy has extensive knowledge of the energy industry within Ireland and is particularly expert in the area of demand side response and energy efficiency. In 2011 she established her own consultancy — her client base includes, The Demand Response Aggregators of Ireland (DRAI), Sustainable Energy Authority of Ireland (SEAI), International Energy Agency (IEA) and The World Bank. Before becoming an independent consultant, Therese spent 10 years with SEAI. She currently provides secretariat services to the DRAI and also provides technical support to SEAI's Low Carbon Technologies team and the Smart Energy Communities programme.

Dr James Watson is the Secretary General of Eurogas, a role he has held since January 2019. Eurogas is the association representing the European gas wholesale, retail and distribution sectors. Prior to taking the helm at Eurogas, Dr Watson was the Chief Executive Officer of SolarPower Europe and worked as the Director of Public Affairs for Weber Shandwick, specialising in energy and trade policy.

Ed O'Donoghue is Technical Sales Manager at Electricity Exchange, Ireland's largest provider of demand side services for CHP's. Electricity Exchange's unparalleled experience and technology allows client CHPs to contribute to Ireland's renewable electricity targets. Ed is a master's degree qualified electrical and electronic engineer who has used his engineering formation to contribute to improvements in Irish housing and renewable energy development.

Registration form

I wish to:

- ☐ Register to attend the CHP conference
- ☐ Receive details on exhibition opportunities at the conference

Registration

The CHP conference is free to attend, however, pre-registration is required in order to secure a place. Numbers may be limited and will be allocated on a first-come, first-served basis.

To register:
Online: www.irishchpconference.com
Tel: 01 661 3755
Email: chpconference@energyireland.ie

Delegate details

Name (Mr/Mrs/Miss/Ms/Dr): _____

Job title: _____

Organisation: _____

Address: _____

_____

Telephone: _____

Email: _____

Cancellations/substitutions

For those unable to attend, a substitute delegate may be sent at any time. Please notify us of any name changes in advance by emailing chpconference@energyireland.ie or by telephone on 01 661 3755.

Acknowledgement of registration

Confirmation of registration will be sent to all delegates, following receipt of registration details. If you have not received your acknowledgement seven days prior to the date of the conference, please contact Energy Ireland to confirm your booking.
Email: chpconference@energyireland.ie

Don't miss your chance to attend - secure your place now!

Who should attend?

The conference will be relevant to anyone with an interest in CHP as an energy solution. This will include:

- ✓ Energy and environmental managers (public & private sector)
- ✓ Financial controllers
- ✓ Purchasing/procurement managers
- ✓ Policy makers
- ✓ CHP developers
- ✓ Consultants and advisors
- ✓ Energy suppliers
- ✓ Equipment suppliers
- ✓ Financial and legal advisors
- ✓ Engineering consultants

The conference will be of particular interest to energy/environment/facilities/technical managers with responsibility for buying and managing energy within industrial and commercial organisations and those keen to learn more about how CHP can deliver significant **cost and environmental savings**.

Delegates attending the conference will:

- ✓ Understand the potential cost and environmental savings CHP can deliver
- ✓ Learn how CHP can benefit your business/industry
- ✓ Hear practical case studies from real life projects in both the public & private sectors
- ✓ Discover how renewable gas can act as a bridge to a renewable future
- ✓ Meet with suppliers and consultants who can advise on suitable solutions for your organisation

Special requirements

The conference venue is accessible for those in wheelchairs or with limited mobility. If you have any additional requirements and wish to attend the conference, please contact us and we will be happy to discuss how these can be accommodated.

Exhibition opportunities

There will be a limited number of high quality exhibition opportunities available at the CHP conference. These will be located outside the main conference room in the area where registration and networking breaks will take place. This provides an excellent opportunity for companies to showcase their expertise and raise their profile to those attending the conference.

For further information, contact **Jillian Wallace** on **01 661 3755** or email **jillian.wallace@energyireland.ie**

Venue information

The conference will take place at the Gibson Hotel, located in Point Square beside the 3 Arena in the heart of Dublin City Centre.

The Gibson Hotel
Point Square
North Dock
Dublin
D01 X2P2

Directions

The hotel has an on-site secure car park which is accessible from the rear of the hotel on Sheriff Street Upper. There is a conference rate of €10 from 8am until 6pm.

The hotel is only a 2 minute walk from 'the point' luas stop. This is on the red line service and travels into the city centre every 10 minutes.

For full directions visit **www.thegibsonhotel.ie**

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