

PRESS RELEASE

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TURNING UP THE HEAT ON ENERGY FROM WASTE

The Environmental Services Association (ESA) has today (Thursday 10th March 2022) published a new “EfW Heat Network Directory” as part of an ongoing initiative to unlock the potential of energy-from-waste power plants to deliver low carbon heating for UK homes and businesses.

The ESA, which represents the majority of the UK’s energy-from waste (EfW) operators, has today published a comprehensive directory of its members’ EfW facilities alongside detailed heat offtake specifications for each plant – with the hope of fostering greater collaboration between EfW operators, planners, policy-makers, heat-network developers and prospective heat off-takers. The need for such a tool was identified in 2021 during a joint workshop between EfW and heat network operators.

The new directory takes the form of an interactive map that can be accessed for free at <https://www.esauk.org/heat-network-directory> and the initiative is supported by The Association for Decentralised Energy (ADE) and the Department for Business, Energy and Industrial Strategy (BEIS).

Recovering energy from waste that would otherwise be destined for landfill is an essential part of the United Kingdom’s waste management system and this is achieved primarily through thermal treatment at specialist EfW facilities where “residual” waste – the material left over after recycling – is combusted to generate heat, which in turn raises steam in a boiler that drives a turbine to produce electrical energy.

In 2021 there were 55 operational energy-from-waste plants in the UK, with the combined capacity to process 14 million tonnes of residual waste each year, while contributing nearly three per cent of the UK’s total net electricity generation in 2020, or 7,762 GWh. However, less than a quarter of them currently also export the heat they generate, which is in stark contrast to plants in continental Europe where the vast majority export both heat and electricity – dramatically improving their efficiency.

Making the most of this heat could be critical to delivering cost-effective heat decarbonisation in urban areas across the UK, which is a complex task that will likely necessitate widespread electrification of heating systems, the use of zero-carbon gases and a greater role for large-scale heating networks – such as those offered by energy-from-waste plants.

It is anticipated that low carbon heat networks will have to meet the heating and hot water demands of 1.5m homes by 2030 and 27.5TWh in non-residential buildings - up from about 420,000 domestic consumers and a total of just under 18TWh for total UK domestic and non-domestic generation today. The Committee on Climate Change also suggests that the UK’s heat supply from heat networks will have to grow from 3% to 18% by 2050 in order to hit national net-zero targets.

Business and Energy Minister Lord Callanan said: *“Heat networks powered by energy-from-waste sites are an important and low-cost part of the UK’s low carbon heating mix helping protect consumers from the volatility of fossil fuel prices.*

“The ESA’s heat network directory shows we have readily available heat sources that can move us away from a reliance on gas and we must ensure we are identifying and taking advantage of these opportunities.”

Executive Director of the ESA, Jacob Hayler, said: *“Heating the nation’s buildings is the single largest source of greenhouse gas emissions in our energy system. If we are to reach net-zero, it is imperative that the UK makes significant progress to decarbonise heating systems and the energy-from-waste fleet is a hugely valuable and underused source of low-carbon heat that exists now.*

“The current energy crisis also throws into sharp relief the benefit of EfW heat and power in protecting against price volatility, since the energy generated is produced as a by-product of long-term waste management contracts and is not therefore subject to the global market forces affecting other fuel sources.

“To date, delivering on the potential of EfW facilities to fuel heat networks has been challenging, but we hope initiatives such as the directory will foster greater collaboration between the many parties instrumental to the successful delivery of future EfW heat networks.”

Kieran Sinclair, Heat Policy Manager at the Association for Decentralised Energy (ADE) said: *“We have to stop wasting the opportunity of heat from waste!*

“The UK is lagging behind the rest of Europe in making the most of its Energy from Waste (EfW) plants – on the continent, the heat produced from the rubbish-burning process is nearly always captured and used to provide affordable, low carbon heating for homes and businesses, whereas in the UK, more than three-quarters of EfW projects simply waste the heat they generate.

“This happens largely because of a lack of awareness about the availability and accessibility of the heat from EfW plants, as well as limited understanding of the significant benefits a heat offtake deal can provide to generate saleable heat without emitting any additional carbon. The ESA’s new directory of existing EfW plants will help to change this by highlighting where heat networks can be connected, and in doing so, modernise households and commercial properties across the country.

“The potential of heat networks as cheapest and most reliable way to decarbonise the UK’s towns and cities has yet to be realised, but this new directory is a crucial step in the right direction. For the Government to hit its target of 18% of heat from heat networks by 2050 it will need to capture useful heat that is currently being wasted around the country – the ESA’s new directory makes this possible.”

ENDS

Notes to editors:

A. The **Environmental Services Association (ESA)** is the trade association representing the UK's resource and waste management industry. Our members are directly transforming the way the UK's waste is managed in pursuit of a more circular economy and are leading sectoral efforts to decarbonise recycling and waste management activities in line with our **Net-Zero Strategy**. The ESA works closely with government, environmental regulators and numerous other stakeholders to deliver a sustainable and high-performing waste and resource management sector in the UK. You can find out more about the ESA and our members in our **Annual report** for 2020/21

For further details please visit www.esauk.org

B. Two case study examples of existing Energy-from-Waste facilities delivering heat to district heating networks are provided below for context.

Eastcroft, Nottinghamshire

- 25-year partnership with Nottingham City Council began in 1988
- 180,000 tonnes of residual household and commercial waste treated each year
- 360,000 MWh of energy produced per year
- 5,000 domestic premises in the city heated each year

Nottingham City Council is responsible for the largest district heat network in the UK, which has been providing heat and hot water for three decades. Powered by Eastcroft EfW, it serves 5,000 homes and over 100 businesses with low carbon heat and power. FCC Environment, which operates the EfW plant, is working closely with the Council and its partners to maintain and grow this market position, with potential for a third line at Eastcroft EfW to support these ambitions.

Millerhill, Midlothian

- 25-year partnership with City of Edinburgh and Midlothian Councils began in 2016
- Processing up to 160,000 tonnes of waste each year
- Approximately 155,000 tonnes of waste processed comes from local households and the remaining 5,000 from businesses
- Supplying heat for 4,600 domestic premises
- Generating energy for up to 22,000 households

In 2020, Midlothian Council and the Swedish state-owned energy firm, Vattenfall, formally launched their new Energy Services Company (ESCo), a 50:50 joint venture to deliver low carbon energy projects across the Midlothian region. The ESCo's first project will be a low carbon district heating network for the new Shawfair town on the outskirts of Edinburgh. The network will be fuelled by residual waste collected by Midlothian, Edinburgh and East Lothian councils and processed by FCC Environment at Millerhill EfW. FCC will supply the low carbon heat and Shawfair LLP will facilitate connections to the new town's domestic and commercial developments. The network is expected to save over 2,000 tonnes of CO₂ per year, the equivalent of taking 1,200 cars off the road.

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