

MPs call for “Scandinavian” approach to UK waste policy to fuel post-COVID recovery, heat half a million homes, deliver Net Zero

New report says prioritising energy-from-waste policy to 2025 will cut costs and carbon for UK taxpayers in a “win-win” for economic & environmental recovery

Strict Embargo until 00.01hrs GMT, 16 July 2020, Westminster, LONDON: The UK cannot afford to waste any time in tackling its national waste problem sustainably, say cross-party MPs in support of a new report today, calling for a more “Scandinavian” approach linking energy and waste policy.

The report from UK think-tank Policy Connect argues that diverting the UK’s 27.5m tonnes of residual (‘non-recyclable’) waste for green heat is better for the economy and the environment than current solutions of overseas export or landfill. It finds widespread deployment of energy-from-waste (EfW) plants across UK regions is needed to deliver a coherent circular and sustainable waste policy that heats and powers UK homes and avoids expensive shipping of waste abroad, and carbon intensive landfill. The report builds on findings from Policy Connect’s plastic policy roadmap published in 2019 calling for the UK to halt plastic exports and boost UK recycling infrastructure. This new report supports the waste hierarchy and concludes that – if plastics are removed and carbon capture technology applied – EfW technology is the safest, cheapest and most environmentally responsible solution to the UK’s residual waste problem. EfW can be taken to refer to the suite of technologies, from the proven and available combustion generating power and low carbon heat, as well as emerging technologies including gasification and pyrolysis, producing innovative outputs including aviation fuel, manufacturing chemicals, transport fuels and more.

The new report – *No Time to Waste: Resources, recovery & the road to net-zero* – is backed by 13 cross-party politicians. It calls for a new “Scandinavian” policy approach to ensure the UK’s annual 27.5m tonnes of ‘residual waste’ becomes a strategic domestic low carbon heat and energy resource, rather than a problem to bury or ship abroad. Even as the UK progresses to its ambitious 2035 recycling targets, a valuable untapped potential for energy-from-waste technologies exists if government pivots residual waste policy away from landfill and export and towards domestic EfW heat networks and carbon capture. MPs say stronger policy signals from government could unlock billions of pounds of private investment and see UK energy from waste capacity increase to become the nation’s solution for non-recyclable waste, generating low carbon heat for half a million homes. Currently, the valuable potential low carbon heat networks is being squandered by outdated national policy and a lack of coordination between local authorities, planners and industry. As the country recovers from the economic shock of COVID-19, the report finds “Energy-from-Waste plants can help cut emissions from local homes, energy intensive industries, aviation and transport¹. A new policy framework is needed from Government to create stability and certainty to unlock billions of pounds of community and infrastructure investment.

In a foreword to the report, **13 cross-party politicians** say, “The need for safe and effective removal of our waste has never been more important. As the UK embarks on our Build Back Better movement, we must no longer simply bury or export the problem. Instead, we should, as other European economies do, treat residual waste as a valuable resource to produce lower carbon heat and energy, alongside a focus on achieving our important recycling targets and investing in innovative recycling technology. Energy from Waste (EfW) is not the perfect long-term solution for residual waste. But accompanied by a drive to increase heat use and to

¹ In 2020, Volocys won planning approval and UK government support for the UK’s first commercial waste-to-jet fuel facility in Lincolnshire, expected to be operational in 2025.

decarbonise EfW further, it is the best available technology, and is an essential part of the net-zero transition ahead of us.”

Oliver Feaver, Policy Manager, Policy Connect, and author of the report says, “Non-recyclable waste will be with us long into the future. Energy-from-Waste is the cheapest, safest and lowest carbon solution to this problem and could provide green heat, equivalent to the needs of half a million homes, or a city the size of Birmingham. This next generation of EfW plants will likely be among the last, so without clearer policy signals as we reboot our economy, the UK will waste this valuable opportunity to build back better.”

Environment Minister Rebecca Pow said: “Now more than ever, it is crucial we move from a ‘throw away’ society to one that always looks at waste as a valuable resource. We want to be a world leader in tackling this challenge, which is why we’re transforming our waste system to ensure products are built to last and easier to recycle or repair. We will consider the recommendations in this report as we drive forward our ambitious waste reforms and meet our net zero emissions goals.”

Paul Taylor, CEO, FCC Environment which operates six EfW plants, with one in construction, including the UK’s largest EfW heat exporter in 2019 says, “Even though Britain is recycling more than ever, everything else that goes in black bin bags in wheelie bins today is still destined for landfill, export or recovery. For some time now we have been working to minimise waste to landfill for many reasons including space, tax, emissions, and perpetual maintenance. Similarly, sending our waste for recovery overseas post-Brexit is not viable and will simply fuel unnecessary carbon emissions. The lack of clear, joined-up policy signals means the UK is wasting valuable domestic opportunities to scale low carbon heat networks with the potential to support hundreds of thousands of UK homes and businesses.”

Neville Hargreaves, VP Waste to Fuels, Velocys says, “In the next five years, we plan to enable the supply of millions of litres of sustainable aviation fuel from everyday household waste which will help to decarbonise the transport sector, create new jobs and set the country on a path to net zero by 2050.”

No time to waste – Tapping the UK’s valuable Energy-from-Waste potential:

A more “Scandinavian” approach to UK domestic waste management policy could see the UK on track for its ambitious recycling targets by 2030, but could also see:

- **Green heat for half a million UK homes by 2030:** If 80% of our residual waste goes to EfW by 2030, we would be generating enough low carbon heat to support over half a million homes (equivalent to Birmingham; or Edinburgh + Glasgow combined; or Liverpool and Manchester), if we address the heat network challenge and scale up this infrastructure.
- **Emissions reductions to Net Zero 2050:** The UK will avoid four million tonnes of CO₂ emissions in 2030 alone, if we send 80% of our residual waste to EfW and displace landfill, a figure comparable to the emissions from over nine million barrels of oil. Further emissions will also be avoided by utilising EfW heat.
- **Unlocking investment for new waste infrastructure investment and jobs in UK:** The sector stands poised to invest billions in infrastructure and green jobs if the policy landscape allows. Money (£280M annually) currently also spent by the UK on shipping ‘non-recyclable’ waste overseas could instead build domestic infrastructure at home, including 10 state-of-the-art plastic recycling facilities in the UK each year, creating hundreds of regional jobs across the UK.

What a more “Scandinavian” policy approach entails:

1. Continue to drive ambitious recycling and waste prevention
2. Remove plastics from the UK’s residual waste stream
3. Halt shipping residual waste abroad and instead use it for domestic low carbon heat, electricity, or synthetic fuels
4. Minimise all UK waste going to landfill
5. Continually reassess national waste treatment capacity and requirements
6. Circular new policy that drives investment into EfW infrastructure to meet increased UK demand
7. Collaboration across government, with councils, planners, waste and energy industries, to unlock economic, environmental and social benefits of EfW

Case Studies: plants blazing a trail in energy-from-waste:

1. **EfW with heat network:** FCC Environment’s Eastcroft EfW plant
Location: Nottingham, UK
Input: 188,000 tonnes per year
Output: District heating and electricity
Interest: Eastcroft was the largest EfW heat exporter of 2018. The plant supplies the Nottingham District Heating Scheme, providing heat & power to 34,000 local homes and businesses including an ice rink, Nottingham Trent University, a shopping centre, HMRC and more.
2. **EfW with CCS:** Fortum Oslo Varme incineration plant
Location: Oslo, Norway
Input: 400,000 tonnes per year
Output: District heating and cooling to Oslo, and electricity
Interest: Klemetsrud is building and integrating full scale CCS. A pilot demonstrated the possibility to capture 90% of all CO₂ in the flue gas.
3. **EfW for jet fuel:** Velocys (British Airways and Shell are partners)
Location: Immingham, Lincolnshire UK (planning permission only)
Input: 500,000 tonnes of household waste a year
Output: Aims to produce 60 million litres a year of synthetic fuel with 70% emissions reductions for airplanes and 90% emissions reductions for HGVs.
Interest: Altalto plant aims to open by 2025 as the UK’s first commercial waste-to-fuel plant with 100 full-time jobs

ENDS

NOTES TO EDITORS

Download a copy of the report and its full recommendations [here](#). For more information, images and interviews please contact **Tom Howard-Vyse** | 07920 269 477 | tom.howard-vyse@policyconnect.org.uk

About Policy Connect:

Policy Connect is a cross-party think-tank improving people’s lives by influencing policy. It collaborates with Government and Parliament, through our APPGs, and across the public, private and third sectors to develop new policy ideas spanning health; education & skills; industry, technology & innovation, and sustainability policy. Follow its **All-Party Parliamentary Sustainable Resource Group (APSRG)** news [here](#).

About the report ‘No Time to Waste: resources, recovery and the road to Net Zero’:

This report is informed by bringing together authoritative voices in science, innovation, politics and industry. It involved six-months of briefings, meetings and roundtables with UK experts from over 50 organisations in the waste management industry, MPs, local council representatives, environmental NGOs, consumer groups and large retailers. The report and recommendations are the work of Policy Connect.

Building Back Better: key facts about the UK's energy-from-waste opportunity:

- **Sector Decarbonisation:** The government's Clean Growth Strategy praises the resources and waste sector for its decarbonisation efforts, which has seen a 69% reduction in carbon emissions since 1990. The Strategy highlighted, however, the lack of progress achieved by other sectors in achieving this aim. The Strategy stresses the need to replicate similar progress in particular across the transport, industry, and domestic heating sectors
- **UK plastic waste problem:** Humans have created 8.3 billion metric tonnes of plastics since large-scale production of the synthetic materials began in the early 1950s and most of it now resides in landfills or the natural environment.² In 2015, UK households and businesses generated 2.26m metric tonnes of plastic packaging waste³, other estimates put the figure closer to 3.5m metric tonnes⁴.
- **Reduce & Reuse:** UK policy must prioritise the removal of plastics from the waste stream and boost recycling and reprocessing. Only 9% of UK plastic has ever been recycled, indicating huge growth potential for recycled plastics.⁵ However, there will always be a residual waste stream, currently 27.5m tonnes a year.
- **Recycling:** Only 45% of household waste is currently being recycled according to the latest government figures. Household recycling rates in England increased from 11% in 2000 to around 45% in 2013 but have stagnated ever since⁶.
- **Landfill:** over 40% of UK residual waste is still ending up in landfill, although this is declining because of lack of available space and landfill taxes.
- **Export for reprocessing or incineration:** Two thirds (67%) of UK plastic packaging is currently exported overseas as refuse derived fuel (RDF) because of government⁷ subsidies; UK recycling is currently a complex, expensive and low-margin business. Since 2010, the UK has exported 4.15m metric tonnes of disposed post-consumer plastic, enough to fill Wembley Stadium 26 times. However, China's ban on plastic waste exports in 2018
- **UK EfW:** The UK has incinerated waste in the UK since the 1970s, albeit originally without energy/heat recovery. There are currently 48 EfW plants in the UK and 10 more under construction. However less than a quarter of these are connected to an external off-take to use the heat generated, as so it is largely lost into the surroundings. Each EfW plant handles 500-800 tonnes of waste every day, the majority of which is household waste and burn at 850 degrees. Three tonnes of waste generates the same energy value as a tonne of fossil fuel offering reliable baseload power to the grid, and efficiency improves significantly when heat is exported directly rather than used to generate power. The resulting ash (10%) of the original waste by volume is sent for reprocessing where any metals are recovered and substrate can be used for road surfacing and aggregates for construction. Exhaust gases are scrubbed using, lime, activated carbon and ammonia to meet stringent EU air quality standards.
- **The Future:** EfW plants of the future can benefit local communities by harnessing valuable electricity and heat to power local homes via district heat networks. EfW plants are also piloting carbon capture technology to reduce generation emissions even further. The cost of new EfW plants varies significantly on size, but recent UK plants have provided up to £500m investment, and each plant typically creates around 50 skilled jobs.

Key EfW Policy Recommendations (2020):

1. **Residual waste treatment:** The Government should release a policy statement outlining the future role of EfW as the best available residual waste treatment as well as its role in helping to decarbonise other sectors.

² Geyer, R., Jambeck, J. R. & Law, K. L. Production, use, and fate of all plastics ever made. *Sci. Adv.* 3, 19–24 (2017).

³ Government Statistical Service. *UK Statistics on waste.* (2018).

⁴ Eunomia. Plastic packaging – Shedding Light on UK Data (2018) <http://www.eunomia.co.uk/reports-tools/plastic-packaging-shedding-light-on-the-uk-data/>

⁵ Geyer, R., Jambeck, J. R. & Law, K. L. Production, use, and fate of all plastics ever made. *Sci. Adv.* 3, 19–24 (2017).

⁶ Government Statistical Service. *UK Statistics on waste.* (2018).

⁷ Environment Agency. National packaging waste database. Available at: <https://npwd.environment-agency.gov.uk/Public/PublicSummaryData.aspx>

2. **Decarbonising EfW:** The Government should support the development and integration of Carbon Capture and Storage technology into EfW facilities, in anticipation of a future carbon tax.
3. **Managing our own waste:** The UK should stop sending its waste abroad. Rather than paying other countries to recover energy from our waste and buying energy back, the UK should deal with our own waste and recover more of our energy and heat needs.
4. **Waste projections:** Defra should produce a waste and resources roadmap, outlining the targeted and managed transition to a circular economy and net-zero ambitions.
5. **Recycling and waste prevention:** Defra should continue to drive up recycling rates and pursue a zero-plastic residual waste stream, including supporting technology development with waste prevention at the heart of innovation.
6. **Waste & public awareness:** The Government should drive a national public education campaign around personal responsibility and waste management, and its links to climate change. This should engage authorities and encourage communication of the end-process of residents' waste.
7. **A role for waste heat:** BEIS' upcoming Heat and Buildings Strategy should recognise a clear role for EfW heat to provide accessible low carbon heat, as a key early element on the road towards heat sector decarbonisation.
8. **Addressing the heat challenge:** The Government should implement a package of aligned and complementary measures drawn from the menu in this report, to address identified barriers to the EfW heat challenge.
9. **Finding the right location:** The Government should establish or actively participate in a cross-sectoral forum to consider the appropriate location of EfW infrastructure, prioritising finding potential heat customers.
10. **Planning and nearby development:** The government should revise the National Planning Policy Framework's *presumption in favour of sustainable development* to include proposed developments using EfW heat.

UK policy context:

Resource and waste management policy is critical to this agenda, and has been a central theme throughout a wealth of new legislation:

- The **Industrial Strategy** (2017) outlined that the government is “committed to moving towards a more circular economy – to raising productivity by using resources more efficiently”.ⁱ
- The **Clean Growth Strategy** (2017) aims to achieve decarbonisation objectives for each sector (in accordance with the Climate Change Act) at low cost to UK taxpayers, consumers and businesses while maximising social and economic benefits for the UK.ⁱⁱ
- The **Resources and Waste Strategy** (2018) outlined how England will preserve material resources by minimising waste, promote resource efficiency and move towards a circular economy in England.ⁱⁱⁱ
- The **25 Year Environment Plan** (2018) outlined ambitions to improve the environment via the Environment Bill. The Plan strives to use natural resources more sustainably and efficiently, minimise waste and pollution, and mitigate and adapt to climate change (aligned with the Clean Growth Strategy).^{iv}
- The **Environment Bill** (2020) gives provision for targets, plans and policies for improving the natural environment and around waste and resource efficiency.^v

Energy from Waste (EfW) has an important role to play in the UK's transition to Net Zero by 2050, and this report outlines the future of this suite of technologies. EfW is the lowest carbon solution for managing residual waste, by diverting landfill and generating useable electricity and heat, compared to landfill. Every tonne of waste diverted from landfill to EfW saves 200kg of CO₂, while generating low carbon energy and heat.^{vi}

ⁱ BEIS, 2017. *Building a Britain fit for the future*: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf

ⁱⁱ BEIS, 2018. *The Clean Growth Strategy*: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf

ⁱⁱⁱ Defra, 2018. *Our waste, our resources: A strategy for England*: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf

^{iv} HM Government, 2018. *A Green Future: Our 25 Year Plan to Improve the Environment*: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf

^v Defra, 2020. *Environment Bill*: <https://publications.parliament.uk/pa/bills/cbill/58-01/0009/20009.pdf>

^{vi} Green Investment Bank, 2014. *The UK residual waste market*: <https://greeninvestmentgroup.com/media/25376/gib-residual-waste-report-july-2014-final.pdf>