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Consultation on the revision of the Climate Action Plan:

CEWEP Ireland ('CEWEP') welcomes the opportunity to respond to the consultation on the revision of the Climate Action Plan.

CEWEP is the umbrella association of the owners / operators of waste-to-energy (WtE) facilities, representing approximately 500 plants across Europe. Our members represent nearly 90% of European WtE capacity. CEWEP Ireland is the Irish branch of CEWEP Europe and has two members: Indaver, which operates the Meath Facility and is proposing to develop a similar facility in Cork; and Covanta, which operates the Dublin Waste to Energy facility. Currently, CEWEP members are converting 900,000 tonnes of waste to energy and are exporting 80MW of renewable energy to the grid network (the equivalent of 140,000 homes per annum).

CEWEP Ireland welcomes recent developments such as the announcement of the sectoral emissions ceilings. However, there are several important factors that must be considered in the context of:

- sustainable waste management;
- the recovery of energy from non-recyclable waste;
- and the role of energy recovery in decarbonising electricity, heat and transport.

These factors are outlined overleaf.

About Waste to Energy

The energy recovery process already also plays a key role in climate mitigation in several ways, most notably:

- The energy recovery process forms a key component of an integrated waste management system and falls within the recovery tier of the waste hierarchy in the Waste Framework Directive. Landfill is regarded as the lowest, least desirable and most environmentally detrimental tier of this hierarchy. If applied correctly, the hierarchy discourages the use of landfill except where no alternative recovery option is available;
- The energy recovery process fulfils a crucial sanitary function for society and the environment by treating contaminated and unavoidable residual waste that cannot be recycled in an environmentally sound manner, thus avoiding the need for landfill and detrimental impacts on land, air and groundwater quality;
- The essential and crucial nature of the environmental task provided by energy recovery facilities (R1 facilities as per the amended Waste Framework Directive) was highlighted in clear terms throughout the Covid-19 pandemic when CEWEP facilities continued to provide this essential treatment function without interruption whilst operating in line with a stringent regulatory framework pursuant to the Industrial Emissions Directive (IED) and associated national Regulations;
- The energy recovery process assists with the saving of tonnes of CO_{2eq} each year through the diversion of non-recyclable residual waste from landfill and the avoidance of methane emissions, a greenhouse gas up to 84 times more potent than CO_2 over a 20-year period[1];
- The process contributes to reducing the fossil fuel demand for electricity production;
- The process ensures that residual waste is sanitised and pollutants removed from the eco-cycle by flue gas cleaning systems operated in line with stringent EU and national Regulations pursuant to the Industrial Emissions Directive (IED);
- The process also eliminates the need to export waste to other countries, enabling Ireland to become self-sufficient in managing waste and to achieve compliance with EU mandated waste targets thus, avoiding transport related emissions;
- With regard to residual waste safely treated by the energy recovery process, this covers the fraction of waste which is of poor quality (degraded materials after being recycled several times), waste that is rejected from recycling facilities, and polluted waste that would contaminate the recycling cycle;
- The process also acts as a carbon sink as it provides a substitute for fossil fuel, as waste is used to generate energy which is then converted into electricity for local communities which leads to further GHG savings;

[1] CEWEP EU, Energy and Climate Fact Sheet & Circular Economy Calculation Tool (2019): potential for further CO2 avoidance: CEWEP - Circular Economy Calculation Tool & Energy-factsheet-final.pdf (cewep.eu)

- Similarly, the process prevents the carbon-intensive extraction of virgin raw materials as a result of mineral and metal recovery which can thereafter be re-injected into the economy and reused in line with circular economy principles;
- The European Commission has acknowledged that energy recovery has a role to play in the transition to a circular economy as a complementary tool to recycling[2];
- In terms of material recovery from bottom ash – this may now be included by Member States when calculating their preparing for re-use and recycling targets as per the amended Directive on Waste and is giving effect to a circular approach to the management of residues and furthermore, this metal recycling from bottom ash saves further CO_2 emissions; and
- Finally, with increasing penetration of intermittent renewables in electricity production there is a need for balancing and storage options. Energy recovery facilities can also fulfill this purpose together with creating new synergies with innovative technologies such as district heating networks and hydrogen production for low carbon transport applications (as detailed below).

[2] Communication COM (2017)34 on the role of Waste to Energy in the Circular Economy, Section 5

Carbon Pricing and Cross-Cutting Measures

1. Are there any unintended barriers within the planning system that should be addressed at national policy level in order to deliver our climate ambitions?

Given the timelines to meet national statutory climate and EU mandated targets, the procedure by which An Bord Pleanála (ABP) deals with Strategic Infrastructure Development applications needs to be simplified and its decision timescales need to be more predictable. The resourcing of ABP also needs urgent attention is order to assist in the delivery of vital infrastructure to meet Ireland's climate targets.

2. What further opportunities exist within our taxation system, beyond measures already implemented and planned, to promote emissions reductions, either on an economy-wide basis, or in specific sectors?

The recently enacted *Circular Economy and Miscellaneous Provisions Act 2022* defined the Circular Economy for the first time in Irish domestic law, and provided a legislative basis for a range of activities aimed at preventing waste, increasing reuse and recycling, and minimising single-use disposable products. However, it is disappointing that it failed to address the effect of the landfill levy exemptions.

For example, the *Waste Action Plan for a Circular Economy* committed to undertake an analysis of the impact of the landfill levy exemption for bio-waste and whether it should be removed. However it is unclear whether this has actually happened. The establishment of a working group to examine the appropriateness or otherwise of this exemption is welcomed and should be expanded to undertake an overarching review of all existing levy exemptions.

In preparing for the development of the new Climate Action Plan, the appropriateness of the **existing exemptions** in the Waste Management (Landfill Levy) Regulations 2015 as amended in 2019 should be reconsidered in full to ensure that landfill capacity is efficiently utilised. A considerable number of waste streams are currently exempted from the landfill levy. However, given the landfill situation, exemptions for waste streams with an energy value or organic content should no longer be exempt from the landfill tax i.e. *street sweepings which are biodegradable for the most part* and which do not appear to be compatible with the stated objective of transitioning to a circular economy. It appears that the same would be better suited to treatment higher up the waste hierarchy. Therefore, access to existing or future landfill should be reserved for waste that cannot be recovered in any other manner.

The State has a duty to ensure that incentives are aligned to maximise resource efficiency and that the waste hierarchy is preserved by encouraging waste recovery through recycling or energy recovery wherever possible and discouraging the use of landfill except where no alternative recovery option is available. It is inconsistent with the Landfill Directive that there are exemptions in place in Ireland which result in waste that has energy value or that is otherwise biodegradable being sent to landfill. Furthermore, it must be remembered that

methane is a powerful greenhouses gas with a 100-year global warming potential 28-34 times that of CO_2. Measured over a 20-year period, that ratio grows to 84-86 times.[3]

4. Are there any significant cross-cutting gaps not previously discussed in Climate Action Plan 21 that need to be addressed?

The Waste Framework Directive (WFD) and national regulations provide for development of End of Waste (EoW) criteria whereby certain specified waste shall cease to be waste when it has undergone a recovery, including recycling, operation and complies with specific criteria. The recent enactment of the *Circular Economy and Miscellaneous Provisions Act 2022* further progressed matters by streamlining the national processes for End-of-Waste and By-Products decisions, citing the objective of "tackling the delays which can be encountered by industry, and supporting the availability of recycled secondary raw materials in the Irish market".[4]

With respect to WtE, the reuse of incinerator bottom ash (IBA) would assist in Ireland's transition to a circular economy as laid down in stated European and national policy positions, since all wastes including those that are unavoidable (such as residues) are regarded as being capable of being transformed into useful and valuable resources.

Such reuse is also compatible with the principle of self-sufficiency as laid down in the Waste Framework Directive. This material is routinely used in EU countries, including the UK, Netherlands and Belgium, and is processed for use as an aggregate in construction of roads or other large-scale projects.

5. Are there any other cross-cutting issues that should be considered in the development of the 2023 Climate Action Pan?

Whilst still subject to inter-institutional negotiations at the EU level at the time of writing, the European Parliament and European Council have proposed including the incineration of municipal solid waste in the scope of the Emissions Trading System. Therefore, emissions derived from the treatment of non-recyclable fossil based waste would come under the scope of the ETS.

Unlike other processes and technologies, WtE cannot replace or substitute their feedstock as they are designed to recover energy through the treatment of waste. Waste policy and consumer behaviour influences the carbon content of the waste. From a cost perspective, the cost impact will be on the waste producer. Additional costs will apply to the treatment of residual waste as well as recycling, given that recycling residues are treated in WtE facilities. Therefore, it is very important that any unintended consequences, for example more waste going to landfill due to high WtE taxation / levies, are avoided.

The European Council's position seeks to provide coherence with existing EU law. It proposes asking the European Commission to prepare a report assessing the impact and feasibility of including MSW in the ETS from 2031, taking into account relevant criteria such as the effects on the internal market, potential distortions of competition, environmental integrity, alignment

[3] The Challenge | UNECE`

[4] gov.ie - Landmark Circular Economy Act signed into law (www.gov.ie)

with the objectives of the Waste Framework Directive and robustness and accuracy with respect to the monitoring and calculation of emissions. The report shall, if appropriate, be accompanied by a legislative proposal on its inclusion in the ETS. CEWEP Ireland supports the approach of assessing its impact.

Electricity

4. What role could carbon, capture and storage have in decarbonising our power sector?

With respect to carbon capture and storage (CCS) and WtE, the role of the WtE sector in climate change mitigation was acknowledged in a 2022 IPCC Report: *"the integration of WtE and carbon capture and storage (CCS) could enable waste to be a net zero or even net negative emissions energy source. For example, in Europe only, the integration of CCS with WtE facilities has the potential to capture about 60 to 70 million tons of carbon dioxide annually."*[5]

The European WtE sector is currently looking into **Carbon Capture Use and Storage (CCUS)**, with a view to reducing its carbon footprint with the possibility to even reach **net negative CO2 emissions**. A number of CCUS projects in the WtE industry have commenced across Europe in recent years and a number are under development.

WtE facilities in the Netherlands already have CCU in operation. CO_2 is captured at the Duiven WtE plant and delivered by truck to the horticulture industry. This CO_2 replaces the use of natural gas in greenhouses for the cultivation of flowers, vegetables and other plants. At the Hengelo WtE plant, CO_2 is captured and transformed into baking powder which is then reinjected in the flue gas cleaning line of the WtE plant. This is the first installation in the world that 'mineralizes' CO2 for the circular re-use in residual waste treatment. CCS projects can also be found in Norway, for example at the Klemetsrud WtE plant, which will help the city of Oslo dacarbonise. Another example of CCS integration is under development in Denmark at the Copenhagen WtE plant.

With respect to the opportunity in Ireland, there is merit in examining the feasibility of industrial clusters for CCS/CCUS, with a view to optimising infrastructure development and utilisation. Fortum is currently piloting a carbon recycling concept, known as Carbon2x, in Finland. The technology involves capturing carbon dioxide from a WtE plant and combining with hydrogen to produce methane, which is eventually transformed into new plastic polymers. The first polymers are expected early next year and the technology could be scalable for Fortum's UK projects between "2027 and 2030".[6]

The development of such CCUS opportunities is dependent on policy supports but also on the location of the WtE plant relevant to storage infrastructure and usage/demand. The merits if CCUS for WtE facilities will have to be considered on a site-specific basis.

5. What other opportunities exist to support the decarbonisation of the electricity sector?

The revised Climate Action Plan should consider what additional mechanisms are required to support the high levels of intermittent electricity generation on the system, for example the

[5] *UN Intergovernmental Panel on Climate Change (IPCC), AR6 WGIII, Mitigation of Climate Change, April 2022*

[6] Fortum looking at 'up to three' further UK-based EfW projects | ENDS Waste & Bioenergy (endswasteandbioenergy.com)

transition to hydrogen-fuelled power generation. Against the backdrop of emissions limits in the Industrial Emissions Directive or the introduction of CO2 limits for remuneration for capacity in EU Electricity Regulation 2019/943, new mechanisms may be required in order to incentivise the delivery of hydrogen fuelled dispatchable generation for both existing and new entrants.

11. What are the regulatory challenges for reaching the renewable energy share targets?

WtE involves the thermal treatment of non-recyclable waste to produce electricity. The electricity is partly renewable, as circa 50% of the feedstock is categorised as biomass according to the Renewable Energy Directive (RED). The exported renewable electricity therefore contributes to Ireland's renewable electricity targets. While this specifically relates to the WtE sector, it is nevertheless noteworthy.

Dispatch down of WtE

The dispatch or redispatch of electricity generation is legislated under EU law, and implemented through national regulation. The implementation of this regulation has an effect on the dispatch of WtE, and indirectly impacts other obligations such as the R1 status of WtE facilities. WtE is designed to operate as baseload as its primary objective is to treat waste. Any increase in instructions to dispatch down and reducing the export of electricity to the grid has the effect of not only reducing the export of electricity to homes and industry, but also on CEWEP facilities capability to treat waste.

According to EU waste policy, WtE facilities can be classified as either a recovery operation or a disposal operation. As waste policy has evolved and become increasingly focused on moving waste 'up the hierarchy', national targets for recycling and recovery reflect this shift in emphasis. The distinction between 'recovery' and 'disposal' has become progressively more relevant, both commercially and economically. As the facilities are R1 recovery facilities, i.e. the waste is used principally as a fuel to generate energy. This is important for Ireland to meet its recovery rates for waste management. Therefore rules relating to the dispatch and redispatch of WtE should adhere to the EU's Clean Energy Package and the Circular Economy Action Plan.

WtE is classified as recovery if it meets the R1 energy efficiency threshold i.e. level of energy recovery from waste. The Waste Framework Directive specifies that WtE can be classified as R1 only where their energy efficiency is equal to or above 0.65. WtE facilities are designed with this threshold in mind and reports this information on an annual basis to ensure it still meets the recovery threshold. Instructions to dispatch down to minimum generation (or indeed dispatch down to off) can impact the amount of waste treated, the amount of electricity produced and ultimately Ireland's ability to meet these targets. We note that failure to meet these targets can lead to material fines from Europe for non-compliance.

Built Environment

7. How could the roll-out of district heating be accelerated and what needs to be done to expand its coverage in Ireland?

From a policy perspective, the recent consultation by the Department of Housing, Local Government and Heritage on the implementation of the *European Union (District Heating) Regulations 2022* is a welcome development. This will provide a national statutory footing to district and waste heat related articles in the Renewable Energy Directive 2018/2001, and updates the Part L process reflect the potential of district heating in reducing emissions, and forms the basis to incorporate the benefits of using waste heat for district heating and cooling (DHC) purposes. It is important that waste heat is considered on a par with renewable in line with Article 15 of RED II.

Given the relative immaturity of the DH market in comparison to other forms of heat, government funding will be essential until such time that DH can compete on an equal footing with other forms of heat. Furthermore, the cost of carbon (and a rising carbon tax) will also have an important influence in incentivising consumers to explore low-carbon heating solutions.

8. Are there specific obstacles in the planning system that is impeding the rollout of district heating? How can we overcome those barriers?

Planning authorities should apply planning conditions similar to those used in London in areas where heat density is suitable for DH. This includes applying conditions that buildings must be 'DH enabled' in these zones, that they must connect to the DH network if it is a lower carbon solution to an individual solution, and importantly ensuring any new industrial development with a useful waste heat source is future-proofed to connect to a DH network.

Heat network energy infrastructure should be incorporated in the Strategic Infrastructure Act. The fact that heat network infrastructure is not afforded the same rights in the Strategic Infrastructure Act as other utility developers is potentially impeding its development. In the case whereby local authorities are named as the legal heat network utility owner/joint-owner, they should be afforded the same rights as other utilities to lay pipes.

Transport

Freight/Commercial Sector

1. What specific measures can be applied in the commercial transport sector to encourage or accelerate a change to EVs or to other zero carbon alternatives?

A dedicated hydrogen support scheme that incentivises adoption. Contracts for difference that make the supplied price of hydrogen comparable with fossil fuels would act as an incentive to commercial fleet operators to switch. The EU's Climate, Energy and Environment Aid Guidelines (CEEAG) provide for increased flexibility for Member States to determine the eligible costs and the amount of support that is necessary for transport aid. This should be considered in the design of supports to incentivise the uptake of hydrogen HGVs and other vehicles.

While still subject to inter-institutional negotiations, it is likely that the EU Alternative Fuel Regulation will introduce binding targets alternative refuelling, such as hydrogen refuelling. Therefore, given that secure access to a network of refuelling stations will be an important investment signal for fleet operators, the revised Climate Action Plan should include an action to examine the roll-out of alternative fuel refuelling stations.

Waste & the Circular Economy

1. What are the main barriers to consumers embracing the Circular Economy, e.g. lack of awareness, increased costs compared to disposable products, lack of access to circular goods and services?

The 'circular economy' is not a well-known or understood phrase among a large portion of the general public. Actions must be taken to ensure there is a better awareness of the positive impact pro-sumers (proactive consumers) have on Ireland's transition to a circular economy and what actions they can take to effect change. Awareness must be created at a community as well as a national level. One of the key drivers to effecting such changes is to make alternative more circular options convenient and cost effective.

For example, better awareness of the benefits of using repair cafes and renting goods and promotion of a repair and rental culture is required. There must be easy access to repair cafes and the rental market. Policy mechanisms may be required to ensure these options are not cost prohibitive compared to purchasing new goods (e.g. re-evaluation of the total cost of new products to include the cost of recycling, recovery or disposal).

Similarly, a key driver to achieving high recycling rates is to make recycling convenient and cost effective. A lack of clear recycling messaging on packaging material impacts on negatively on recycling rates (i.e. contamination levels and optimisation of rates) at consumer level. One-off communication campaigns only improve recycling rates in the short-term – evidence has shown on-going campaigns are required to achieve a sustained improvement in recycling rates.

Similarly, better awareness together with policy incentives are required to develop more circular packaging and remove the unnecessary use of plastic in packaging.

2. What other opportunities exist to support decarbonisation through the acceleration of a transition to the circular economy?

As noted in the response to the *Carbon Pricing & Cross-Cutting measures section,* there is a missed opportunity to regulate the reuse of incinerator bottom ash (IBA). This would assist in Ireland's transition to a circular economy since all wastes including those that are unavoidable (such as residues) are regarded as being capable of being transformed into useful and valuable resources. End of Waste status for aggregate from IBA and other policy and fiscal mechanisms to support a route to market will be required to optimise and accelerate the WtE sectors contribution to the circular economy.

Furthermore, in line with our recommendations (also in the *Carbon Pricing & Cross-Cutting measures section*), the current landfill levy exemptions should be reviewed in order ensure policy promotes resource efficiency and adheres to the waste hierarchy by encouraging waste recovery through recycling or energy recovery wherever possible and discouraging the use of landfill except where no alternative recovery option is available.