2 Policy and Planning Framework and Need for the Scheme

2.1 Introduction

This section of the Environmental Impact Assessment Report (EIAR) sets out the European Union (EU), national, regional and local waste policy and planning policy framework which underpins the proposed Site Sustainability Project, hereinafter referred to as the "proposed development", to be carried out at the existing Waste to Energy facility at Carranstown, County Meath which constitutes a strategic infrastructure development within the meaning of section 37A of the Planning and Development Act 2000, as amended (a previous application at the site was also considered strategic infrastructure development ref: PL17.PA0026 as twice amended by ref: PL17.PM0004 and ref: PL17.PM0007).

This chapter will demonstrate the specific need for the proposed development in the context of the waste policy and planning law and policy framework and furthermore, that the proposed developments accord fully with all plans, policies and objectives at a national, regional and local level, and may thus be regarded as being in accordance with the proper planning and sustainable development of the area.

The proposed development comprises the following elements:

- Increase in the amount of hazardous waste accepted at the facility for treatment in the waste to energy plant from the current permitted 10,000 tonnes per annum (tpa) up to a maximum of 25,000 tpa;
- It is also proposed to increase the annual total waste accepted at the site for treatment in the waste to energy facility from the currently permitted 235,000 tpa to 250,000 tpa;
- Development of an aqueous waste tank farm and unloading area for the storage and processing of aqueous liquid wastes currently accepted at the facility;
- Development of a 10MW_e hydrogen generation unit for connection to the natural gas distribution network and for mobile hydrogen transport applications and other potential uses;
- Development of a bottom ash storage building for the storage of up to 5,000 tonnes of bottom ash which is produced on site;
- Additional waste acceptance capacity and infrastructure to accept up to 30,000 tpa (bringing the site total to 280,000 tpa) of third party boiler ash and flue gas cleaning residues and other similar residues for treatment in the existing ash pre-treatment facility on site;
- Development of a warehouse, workshop and emergency response team (ERT)/office building to support existing maintenance activities on the site;

- Development of a new concrete yard and parking area for up to 10 trucks, tankers or containers on the site;
- Demolition and re-building of an existing single storey modular office building on site with a slightly increased footprint; and
- Other miscellaneous site upgrades.

In summary, a review of waste, energy and climate policy at a European and national level shows that the proposed development could make a significant contribution toward:

- providing additional thermal recovery capacity for hazardous waste (up to 15,000 tpa additional), as identified in the Eastern Midlands Regional Waste Plan and the National Hazardous Waste Management Plan;
- self-sufficiency in hazardous waste treatment within the State and reducing exports of hazardous waste through the increase in hazardous waste acceptance up to a maximum of 25,000 tpa and the treatment of hazardous residues;
- compliance with the newly adopted Circular Economy Package and amended Directives on Waste and Landfill, and the Irish Government's Climate Action Plan 2019;
- more ambitious recycling targets as set out in the Circular Economy Package, by extracting ferrous and non-ferrous metals from bottom ash;
- sustainable, secure and competitive energy generation in line with energy policy objectives;
- delivering the expansion of infrastructure of strategic importance with private sector investment;
- supportive of national and regional policy which underlines the pressing need to facilitate the development of enhanced electricity and gas supplies in order to support the State's transition to a low carbon economy;
- supportive of emerging policy on the generation of hydrogen and the role that this innovative and versatile technology can play in the decarbonisation of the transport and other sectors; and
- contribution towards the enhancement of regional economic development through employment creation and provision of ancillary benefits to the wider region.

Presently, there is a lack of dedicated thermal treatment recovery capacity for hazardous waste within the State with a large quantity of such waste being exported to continental Europe. In order to tackle this deficit, additional thermal recovery capacity is needed reduce the reliance on export which is at odds with the principles of self-sufficiency, proximity and proper application of the waste hierarchy as predicated on European requirements as transposed into national regulations in Ireland.

Moreover, the management of hazardous waste in a more self-sufficient and proximate manner is in alignment with the National Hazardous Waste

Management Plan as reaffirmed in the recent Progress Report on its implementation. The treatment of additional hazardous waste at an existing installation also provides an associated environmental benefit of avoiding the transport of the hazardous waste over longer distances or via export which in turn is compatible with wider climate mitigation policy positions and the envisaged transition to a low carbon economy as set out in the national Climate Action Plan.

With regard to the management of residues produced at the existing Carranstown facility the proposed development includes the development of a bottom ash storage facility for ash currently produced on-site. In this regard, the proposed development also provides for the additional acceptance of flue gas cleaning residues and other similar residues for treatment in the existing ash pre-treatment at the facility.

This will ensure a co-ordinated and integrated approach to residue management and will in turn ensure that all residues are managed in an environmentally sound manner in line with stringent permitting requirements. This is further supported by the policy objectives underlined in the National Hazardous Waste Management Plan and the stated need to strive for improved self-sufficiency in the management of hazardous wastes in the State.

The development of a hydrogen generation unit for connection to the gas distribution network and for use in mobile transport applications as a constituent part of the proposed development to be undertaken at the existing facility will improve the energy efficiency and sustainability of the facility which is therefore compatible with wider national climate mitigation policy measures.

In addition, the production of hydrogen to be utilised in mobile hydrogen transport applications also accords with the developing policy landscape on decarbonising the transport sector in the State and more broadly with emerging policy whereby this versatile technology can play a beneficial role in assisting with the State's broader decarbonisation and mitigation objectives.

Additionally, from a planning policy perspective and having regard to appropriate national, regional and county development plans and related policies and objectives, namely the National Planning Framework and associated National Development Plan, the Eastern & Midland Regional Spatial & Economic Strategy and the Meath County Development Plan, all provide policy support for the proposed development at a national and regional level.

The National Planning Framework underlines the need for waste to energy thermal recovery facilities which treat residual municipal waste that cannot be recycled in a sustainable manner. It further provides that the development of necessary and appropriate hazardous waste management facilities to avoid the need for treatment elsewhere is required and is necessary for the effective management of waste to 2040. The above increase in hazardous waste acceptance for treatment at the facility would mean that additional hazardous waste could be effectively treated without the need for export thus, conforming with the requirements of the statutory National Planning Framework in relation to the proper management of hazardous waste management.

Similarly, the National Development Plan underlines that investment in waste management infrastructure is critical to Ireland's environmental and economic well-being for a growing population and to achieving circular economy and climate objectives. In this regard, the proposed development and continued investment at the Carranstown facility is not only beneficial from an environmental viewpoint but will also deliver associated economic benefits in a regional context.

The proposed development may thus be regarded as being in compliance with both national and EU policies relating to the sustainable management of waste and the planning law and policy framework as a plan-led development based on the overarching principles of proper planning and sustainable development as set out below.

2.2 Waste Policy

2.2.1 European Union (EU) Law and Policy

The context for the development of Irish waste and energy policy is set by overarching EU policy as well as EU legal instruments that implement this policy. These key EU policy and legislative documents are detailed in full below.

2.2.1.1 7th Environmental Action Programme 2013

The 7th *Environmental Action Programme* ("7th EAP") (European Commission 2014) was formally adopted by the European Parliament and the Council of the European Union in November 2013 and covers the period up to 2020.

This document oversees the implementation of environmental policy for Member States until 2020. It builds on a vision for 2050 that is set out as follows:

> *"In 2050, we live well, within the planet's ecological limits. Our prosperity and healthy environment stem from an innovative, circular economy where nothing is wasted and where natural resources are managed sustainably, and biodiversity is protected, valued and restored in ways that enhance our society's resilience. Our low-carbon growth has long been decoupled from resource use, setting the pace for a safe and sustainable global society."*

In line with these objectives, the programme for action to 2020 aims to (amongst other things):

- Turn waste into a resource based on strict application of the waste hierarchy.
- Limit energy recovery to non-recyclable materials.
- Phase out landfilling of recyclable or recoverable waste.
- Ensure high quality recycling where the use of recycled material does not lead to overall adverse environmental or human health impacts.
- Manage hazardous waste so as to minimise significant adverse effects on human health and the environment.

- Remove barriers facing recycling activities in the European Union internal market and review existing prevention, re-use, recycling, recovery and landfill diversion targets so as to move towards a lifecycle-driven 'circular' economy, with a cascading use of resources and residual waste that is close to zero.

The European Commission adopted a more ambitious framework in 2015 which aimed to create conditions for the development of a circular economy as described in the Circular Economy Roadmap (European Commission 2015a) and Communication "Closing the loop – An EU action plan for the Circular Economy" (European Commission 2015b)[1].

The European Commission's Circular Economy Package ('CEP') forms a constituent part of this framework and is centred on key waste legislative proposals which set ambitious targets to increase municipal waste recycling and to reduce landfill across Europe. As part of the CEP, the EU has amended and updated four waste Directives, including the Landfill and Waste Framework Directives.

In June 2018, the four amending Directives which constitute the European CEP were adopted by the European institutions and published in the Official Journal of the European Union (OJEU). In particular, the amendments to the Waste Framework Directive and the Landfill Directive[2] are particularly important in the context of the Carranstown facility and are outlined in full below.

In a circular economy the value of the materials and energy used in products in the value chain is retained for as long as possible while waste and resource use are minimised. This provides consumers with more durable and innovative products that save money and increase quality of life.

The circular economy requires action at all stages of the life cycle of products: from the extraction of raw materials, through material and product design, production, distribution and consumption of goods, repair, remanufacturing and re-use schemes, to waste management and recycling. All these stages are linked and improvements in terms of resource and energy efficiency can be made at all stages.

The European CEP's intent is to ensure the European Union's transition to a circular economy[3]. Ireland's Regional Waste Plans (as detailed below) already apply the principles of the Circular Economy, focusing in particular on transitioning from a waste management economy to a green circular economy and increasing the value recovery and recirculation of resources. This is described in greater detail below.

The proposed development will support the 7th EAP and Circular Economy objectives including the recently adopted CEP which includes revised and enhanced targets on the landfilling and recycling of municipal waste which

[1] European Commission 2015a and Communication 'Closing the Loop – An EU action plan for the Circular Economy, European Commission 2015b
[2] Directive 2018/850 of May 30, 2018, amending Directive 1999/31/EC on the landfill of waste and Directive 2018/851 of May 30, 2018, amending Directive 2008/98/EC on waste
[3] http://ec.europa.eu/environment/circular-economy/index_en.htm

Ireland is obliged to adhere to by diverting non-recyclable resources from landfill and recovering valuable energy from the same.

Thermal recovery also supports high quality recycling by treating polluted and complex hazardous waste, thereby keeping harmful substances out of the Circular Economy. In this regard, the proposed development includes the treatment of additional hazardous waste including hazardous aqueous waste, thereby avoiding the export of such waste to Europe which is at odds with the self-sufficiency and proximity principles enshrined in EU and national legislation.

In addition, thermal recovery at the facility can also contribute to recycling through the extraction of ferrous and non-ferrous metals as laid out in the revised Directive on Waste under Article 49 whereby metals that are separated after the incineration of municipal waste may be included by Member States including Ireland when calculating their preparing for re-use and recycling targets.

Circular Economy Package (CEP)

According to the European Commission, the CEP should:

> *"help European businesses and consumers to make the transition to a stronger and more circular economy where resources are used in a more sustainable way."*

Thus, the CEP's primary intent is to ensure the European Union's transition to a circular economy as opposed to the typical linear economy in which resources are created, used, and disposed. A circular economy is one in which resources are used for as long and as productively as possible, and at the end of their useful life, their products and materials are recovered and regenerated. The CEP is thus centered on ‘designing waste out of the system’.

The four amending Directives that constitute the Circular Economy Package include:

- Directive 2018/850 of May 30, 2018, amending Directive 1999/31/EC on the landfill of waste;
- Directive 2018/851 of May 30, 2018, amending Directive 2008/98/EC on waste;
- Directive 2018/852 of May 30, 2018, amending Directive 94/62/EC on packaging and packaging waste; and
- Directive 2018/849 of May 30, 2018, amending Directives 2000/53/EC on end-of-life vehicles; 2006/66/EC on batteries and accumulators and waste batteries; accumulators; and 2012/19/EU on waste electrical and electronic equipment.

Whilst the main objective of the circular economy is to cover all phases of the product's life cycle, from production and consumption to waste management, the European CEP is primarily focused on waste.

Accordingly, the four Directives have been built on the following principle:

> *"Waste management in the Union should be improved, with a view to protecting, preserving and improving the quality of the environment, protecting human health, ensuring prudent, efficient and rational utilization of natural resources and promoting the principles of the circular economy."*

New Circular Economy Package Targets

In order to facilitate the move to a European circular economy and reach a high level of resource efficiency, the Package through amendments to the above Directives[4], imposes several ambitious targets which Member States, including Ireland, must comply with.

These targets include:

- 55% of municipal waste must be prepared for re-use and recycling by 2025, 60% by 2030, and 65% by 2035;
- The amount of municipal waste landfilled must be reduced to 10% or less of the total amount of municipal waste generated by 2035;
- As of 2030, all waste suitable for recycling or other recovery, in particular in municipal waste, must not be accepted in a landfill, excepted for waste for which landfilling delivers the best environmental outcome;
- The total amount of recycled packaging waste must be at 65% by 2025 and 70% by 2030. Member States can ask for derogations to the EU Commission under certain circumstances;
- Specific minimum targets for recycling some materials contained in packaging waste (plastic, wood, ferrous metals, aluminium, glass, paper, and cardboard) are imposed;
- By December 31, 2023, Member States must ensure that bio-waste[5] is either separated and recycled at source or is collected separately and not mixed with other types of waste; and
- Separate collection obligations extended to include hazardous household waste by 2025.

These ambitious and stringent targets are likely to pose challenges for many Member States including Ireland once they are given effect in national law from 2020. Thereafter, Ireland will be obliged to meet the new targets on reuse and recycling and the strict limitation on the amount of municipal waste which can be landfilled. Whilst the Environmental Protection Agency in its recent National Waste Statistics report[6] to be submitted to Eurostat, has confirmed that the State is on track to meet 2020 Waste Framework Directive municipal waste recycling

[4] Member States including Ireland are required to bring into force laws, regulations and administrative provisions necessary to comply with the revised CEP Directives by 5 July 2020 and which entered into force on 4 July 2018 following publication in the Official Journal of the European Union.

[5] 'bio-waste' means biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises and comparable waste from food processing plants.

[6] http://www.epa.ie/nationalwastestatistics/targets/

targets, the new and enhanced targets to apply from 2025 and beyond will be hugely challenging to achieve.

The Irish Government's Climate Action Plan 2019 also acknowledges the need to regulate the materials that go to landfill in order to meet the target of just 10% going to landfill by 2035.

The proposed development to be carried out at the Carranstown facility will through the continued diversion of municipal waste from landfill to a higher tier of the waste hierarchy and the recovery of valuable resources from the waste to energy process and the treatment of hazardous wastes will contribute to the achievement of the new and enhanced targets as set out in the CEP.

The revised Directive on Waste now requires that hazardous waste that is produced by households, such as hazardous waste from paints, varnishes, solvents or cleaning products, should also be collected separately in order to avoid contamination of municipal waste with hazardous waste fractions that could lower recycling quality and to ensure the environmentally sound management of that hazardous waste.

In the context of the proposed development and the specific aspect relating to the treatment of additional hazardous waste, the obligation to separately collect hazardous household waste by 2025 will necessarily require a safe and environmentally sound treatment option for such collected waste from as can be provided by this element of the proposed development in due course.

2.2.1.2 Directive (EU) 2018/851 amending Directive 2008/98/EC on waste

The Waste Framework Directive (2008/98/EC) ("the WFD") previously set out the legal framework for waste management in the European Union, including the basic concepts and definitions related to waste management.

The amended Directive (2018/851) on waste amends the 2008 Waste Framework Directive to increase the targets laid down and to avoid methods of waste treatment which lock in resources at the lower levels of the waste hierarchy. The waste hierarchy as established in the previous Waste Framework Directive has also been enshrined in this amended Directive with the result that it must be applied as a priority order in waste prevention and management legislation and policy.

The waste hierarchy establishes the following order of priority:

- Prevention;
- Preparing for re-use;
- Recycling;
- Other recovery e.g. energy recovery, and
- Disposal.

Waste hierarchy by increasing waste prevention, increase preparing for re-use and recycling rates, enable high-quality recycling and boost the uptake of quality secondary raw materials. In addition, as set out in the previous WFD, the newly amended Directive on waste continues to impose on Member States a number of obligations regarding waste management, including:

- The application of the waste hierarchy as a priority in waste prevention and waste management legislation and policy.
- To ensure that waste is recovered (including separate collection to facilitate recovery where technically, environmentally and economically practicable) or, where it is not recovered, to ensure that waste is disposed of without causing risks to human health and the environment.
- To establish an integrated and adequate network of waste disposal installations and of installations for the recovery of mixed municipal waste - aiming for EU self-sufficiency and for member states individually to move towards self-sufficiency.

The amended Directive on waste continues to apply the hierarchy of waste management as detailed above, with the preferred waste management option at the top of the hierarchy and the least preferred option at the bottom.

This waste hierarchy has been transposed into Irish law (section 21A of the Waste Management Act 1996 (as inserted by article 7 of the European Communities (Waste Directive) Regulations 2011 [S.I. No. 126 of 2011][7]) and, for ease of reference, is demonstrated in Figure 6.4.(*Source: EPA 2016, Irelands Environment 2016, An Assessment)*[8].

The waste hierarchy shows that waste prevention is the most preferred option, with disposal being the least desirable option. Re-use, recycle and recovery fall in the middle of the waste hierarchy.

Annex II of the WFD sets out a non-exhaustive list of recovery operations, which includes material recovery (i.e. recycling), energy recovery (i.e. use principally as a fuel or other means to generate energy) and biological recovery (e.g. composting). This Annex also sets out energy efficiency criteria for energy recovery activities such as waste-to-energy known as the "*R1 formula*". Any new facilities meeting or exceeding an efficiency of 0.65 according to the R1 formula can be classified as recovery activities (R1) according to the waste hierarchy[9].

At the bottom of the hierarchy is disposal, which in Ireland generally involves waste being sent to landfill. Landfilling results in resources being disposed of without a possibility of recovery, with risks such as emissions from methane generated from decomposing biodegradable waste, leachate and groundwater contamination.

[7] As referred to above, national laws and regulations necessary to give effect to the revised Directives which form part of the CEP, must be enacted by 2020 and thereafter this statutory instrument will necessarily require amendment.
[8] http://www.epa.ie/pubs/reports/indicators/SoE_Report_2016.pdf
[9] This R1 classification covers all types of waste acceptable at the MSWI plant as defined in IPPC and WID

The waste hierarchy thus gives priority to the options that deliver the best overall environmental outcome. The existing Carranstown waste to energy facility is classified as an R1 recovery facility (thermal treatment coupled with energy recovery). The proposed development will also be carried out in line with the recovery component of this hierarchy. The existing R1 classification will not be affected by the treatment of additional hazardous waste as the facility will remain primarily dedicated to treatment of municipal solid waste (MSW).

Thus, the treatment of unavoidable and hazardous waste by the waste to energy process may be regarded as paying due regard to this principle and is in full alignment with the proper and correct application of the waste hierarchy as stipulated by EU legislation and transposed into national law.

2.2.1.3 Directive (EU) 2018/850 amending Directive 1999/31/EC on landfill of waste

Under this amended Directive, the European Union has set out new rules for the landfill of waste and it establishes stringent and legally binding targets. This Directive amends Directive 1999/31/EC on the landfill of waste to ensure that Member States move towards a more circular economy and is intended to prevent or reduce the adverse effects of the landfill of waste on the environment, soil, air, surface and groundwater.

The objective of this Directive is to improve waste management in the EU and its primary aim is to ensure a progressive reduction of landfilling of waste in the EU.

The Directive also sets new binding landfill reduction targets, including:

- By 2030 all waste suitable for recycling or recovery will not be accepted in a landfill, except when landfilling provides the best environmental outcome. This target will be reviewed in late 2024 with a view to maintaining or possibly reducing, and
- By 2035 municipal waste that is landfilled must only account for 10% that is generated (by weight)[10].

The proposed development which includes the treatment of additional hazardous waste will be carried out in line with the thermal treatment process of the facility which is designed to meet the R1 efficiency criteria. The proposed development at the existing facility will therefore assist in the diversion of hazardous waste from export to a more sustainable recovery solution in an indigenous existing facility.

This aligns with the objectives of the CEP and the amended EU Directives on waste and the landfilling of waste and national policy positions regarding the environmentally sound management of hazardous waste which underline the need to continue to strive for self-sufficiency in the management of this challenging waste stream.

[10] A derogation by a Member State to postpone the above targets by up to 5 years may only be granted if landfilled more than 60% of its municipal waste generated in 2013 as reported to the OECD and Eurostat

Furthermore, the existing treatment of residual waste at the facility will continue to contribute to the achievement of the enhanced and more ambitious targets as contained within the CEP including the new stringent target on the limitation of the landfilling of municipal waste.

2.2.1.4 Circular Economy Action Plan for a Cleaner and more Competitive Europe 2020

The European Commission in March 2020 has adopted a new **Circular Economy Action Plan** - one of the main building blocks of the **European Green Deal**, Europe's new agenda for sustainable growth (European Commission 2020).[11]

The new Action Plan aims to make the European economy fit for a green future, strengthen competitiveness while protecting the environment and providing for new consumer rights. Building on the work carried out since the previous 2015 Roadmap and the Circular Economy Package as outlined above, the new Plan focuses on the design and production for a circular economy, with the aim to ensure that all resources used are kept in the EU economy for as long as possible.

The Plan is ambitious in scope and contains a suite of proposed legislative and non legislative measures. These proposals include:

- Sustainability principles to improving product durability, reusability, upgradability and reparability, addressing the presence of hazardous chemicals in products, and increasing their energy and resource efficiency;
- Provision of information on lifespan, repair services and spare parts to consumers and substantiation of environmental claims by companies;
- Promotion of key product value chains (i.e. mobile phones, laptops) through a Circular Electronics Initiative and introduction of new EU wide take back scheme.
- Packaging to be reusable or recyclable by 2030 with labelling to ensure correct recycling and mandatory requirements for recycled content;
- Aims to ensure that the EU does not export its waste challenges to third countries;
- Proposes to assess the scope to develop EU-wide end-of-waste (EoW) criteria for certain waste streams to improve circularity of products and raw materials in the EU;
- Reduction of total waste generation and halving of the amount of residual (non-recycled) municipal waste by 2030 and harmonisation of separate waste collection systems;
- Encourage the broader application of well-designed economic instruments, such as environmental taxation, including landfill and incineration taxes;

[11] European Commission Communication 2020, Circular Economy Action Plan for a cleaner and more competitive Europe: https://ec.europa.eu/environment/circulareconomy/pdf/new_circular_economy_action_plan.pdf

- In combination with the forthcoming Comprehensive European Strategy on Sustainable and Smart Mobility, enhance synergies with the circular economy transition and use of sustainable alternative transport fuels; and
- Consideration of a revision of material recovery targets set in EU legislation for construction and demolition waste and its material-specific fractions.

Whilst the intent behind the above proposals is to be commended and in particular those which aim to improve product circularity, it is difficult to envisage how the proposals regarding the reduction of municipal waste can be achieved in practice given the short timeframe outlined.

In light of the Circular Economy Package recycling and landfill reduction targets which are ambitious in nature and which must be adhered to by 2025 as outlined above, many Member States are already likely to face difficulties in meeting these targets given projected levels of population growth and increasing waste arisings throughout the EU.

In addition, large quantities of municipal waste are currently being diverted to landfill in the EU and the amended Landfill Directive provides that derogations may be availed of by certain Member States.

Accordingly, it remains to be seen how such a waste reduction target could be achieved in practice given the challenging timeframe and moreover, how a uniform approach to the same could be applied throughout the EU as currently significant differences exist as to the extent to which integrated waste management systems have been established in certain Member States.

2.2.1.5 Other EU Initiatives

The Europe 2020 strategy (European Commission 2010), an EU document which aims to ensure smart, sustainable and inclusive growth, puts forward seven flagship initiatives to set the EU on the path to this transformation, including the "resource efficient Europe" roadmap.

The Roadmap for a Resource Efficient Europe roadmap (European Commission 2011) sets out key milestones which include:

> *"By 2020, waste is managed as a resource. Waste generated per capita is in absolute decline. Recycling and re-use of waste are economically attractive options for public and private actors due to widespread separate collection and the development of functional markets for secondary raw materials. More materials, including materials having a significant impact on the environment and critical raw materials, are recycled. Waste legislation is fully implemented. Illegal shipments of waste have been eradicated. Energy recovery is limited to non-recyclable materials, landfilling is virtually eliminated and high quality recycling is ensured."*

In 2014-15, the Commission performed a mid-term review[12] of the Europe 2020 strategy. This included a public consultation that showed that the strategy is still seen as an appropriate framework to promote jobs and growth.

Following the review, the Commission decided to continue the strategy, monitoring and implementing it through a process known as the European Semester.

As the proposed development will be carried out at an existing recovery facility, the same will continue to contribute towards the reduction of landfill within Ireland, treating non-recyclable and hazardous waste while supporting high quality recycling. It is therefore in alignment with the Strategy's key milestones centred on resource efficiency and the virtual elimination of landfill.

2.2.1.6 The European Green Deal 2019

In 2019, the European Commission adopted the European Green Deal (COM(2019) 640) which is a new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use.

The Deal includes a roadmap with actions to:

- boost the efficient use of resources by moving to a clean, circular economy; and
- restore biodiversity and cut pollution.

In the context of waste management, the Deal states that sustainable product policy has the potential to reduce waste significantly and where waste cannot be avoided, its economic value must be recovered and its impact on the environment and on climate change avoided or minimised.

The Deal also aims to accelerate the shift to sustainable and smart mobility and states that achieving sustainable transport means putting users first and providing them with more affordable, accessible, healthier and cleaner alternatives to their current mobility habits. In this regard, the Commission will adopt a strategy for sustainable and smart mobility in 2020 that will address this challenge and tackle all emission sources as referred to above in relation to the new Circular Economy Action Plan.

As such, the aspect of the proposed development concerning the generation of hydrogen for use in transport applications is compatible with the European Green Deal policy objectives which aim to bring about a shift to sustainable and smart mobility. More generally, the continued generation of renewable energy at the existing Carranstown facility and the treatment of additional hazardous waste and residues as part of the proposed development aligns with the Deal's objective to transform the EU into a resource-efficient economy.

[12] https://ec.europa.eu/info/sites/info/files/europe2020_consultation_results_en.pdf

2.2.1.7 Relevant International Initiatives

The European policy framework detailed above and relating to the development of and transition to a circular economy is also reflected in international policy frameworks.

In this regard, the United Nations has developed 17 Sustainable Development Goals (UN SDG's). In the context of the proposed development, Goal 12, *Sustainable Production and Consumption*, sets out a series of targets that include resource efficiency, wasted food, waste management, reuse and recycling, public procurement, education, and removal of fossil fuel subsidies[13] all of which may be said to relate to the transition to a more circular economy and linked to the ambitious new legislative framework for waste management, as set out in the EU Circular Economy Action Plan as detailed above in **Section 2.2.1.4**.

An important target contained within this Sustainable Development Goal requires that:

> *by 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.*

The proposed development is consistent with the proper application of the waste hierarchy whereby all wastes including those that are hazardous must be managed in an environmentally safe and sound manner. Furthermore, stringent permitting requirements in the form of Industrial Emissions Directive (IED) which consolidates the requirements of the Large Combustion Plant Directive (LCPD), the Waste Incineration Directive (WID) and the Integrated Pollution Prevention and Control (IPPC) Directive which strengthens the application of Best Available Techniques (BAT) must be adhered to on an ongoing basis in the context of all elements of the proposed development.

Accordingly, the proposed development may also be said to compatible with this significant and related international target and the envisaged transition to a more circular economy on a global scale.

2.2.2 National Waste Policy

2.2.2.1 A Resource Opportunity – Waste Management Policy in Ireland

The Department of Environment, Community and Local Government published *A Resource Opportunity. Waste Management Policy in Ireland*' in July, 2012.

[13] United Nations, Sustainable Development Goal 12: https://www.un.org/sustainabledevelopment/sustainable-consumption-production/

In the context of the previous EU WFD, this national policy document sets out the measures through which Ireland will make the further progress necessary to become a recycling society, with a clear focus on resource efficiency and the virtual elimination of landfilling of municipal waste.

This Policy Statement covers the period to 2020 and a review of the same commenced in 2019[14] with a view to having a new policy in place in 2020 as detailed in the Climate Action Plan 2019[15] (as detailed below).

This review will be informed by a wide range of issues and initiatives including the progress achieved to date on implementing the measures set out in *A Resource Opportunity* and the implementation of the Circular Economy Package including the challenging new municipal waste recycling rate which has stagnated since 2016. It will also review and analyse whether there is sufficient domestic capacity to properly manage municipal waste and recycling and other appropriate infrastructure needed in the State.

In addition, waste enforcement legislation will be reviewed as will the definition of waste, and relating to the development of a circular bioeconomy, the review will identify and address key regulatory barriers and whether a designation is necessary for residual waste flows to be manged for use in the bioeconomy.

Finally, this policy review will also include the development of a new Circular Economy Action Plan to be in place by 2020. In this regard, the Climate Action Plan 2019 states that a Circular Economy Policy and Action Plan for Ireland will be developed to replace the current suite of policy, plans and programmes in 2020-21.

The same shall be inspired by the EU's Circular Economy Action Plan, and Ireland's response will provide policy direction on waste prevention, eco-design, reuse, repair, recycling, recovery and diverting waste from landfill, and will include a cross-Government reflection on how these principles can be embedded throughout the public policy frameworks.[16]

For present purposes, there are a number of guiding principles[17] in the existing policy document *A Resource Opportunity* as set out below:

- "*Firstly, we must place prevention and minimisation at the forefront of waste policy by ensuring that we minimise the generation of waste through better design, through smart green purchasing and through a keener awareness of locally produced goods which boost jobs and the economy and can reduce impacts associated with transportation.*
- *Secondly, when waste is generated we must extract the maximum value from it by ensuring that it is reused, recycled or recovered, including by the*

[14] Department of Communications, Climate Action and Environment, Public Consultation Document on a Waste Action Plan for a Circular Economy as of February 2020: https://www.dccae.gov.ie/en-ie/environment/consultations/Pages/Public-Consultation-Waste-Action-Plan-for-a-Circular-Economy.aspx
[15] Climate Action Plan 2019, Chapter 12, Waste and the Circular Economy, pages 112-120: https://www.dccae.gov.ie/documents/Climate%20Action%20Plan%202019.pdf
[16] Climate Action Plan, Section 7, Waste and the Circular Economy at page 120: https://www.dccae.gov.ie/documents/Climate%20Action%20Plan%202019.pdf
[17] Refer to **Section 1** – Introduction of A Resource Opportunity. Waste Management Policy in Ireland' (2012).

appropriate treatment of mixed municipal waste or residual waste collected in our black bins[18].

- *Thirdly, disposal of municipal waste to landfill must be a last resort – in fact, we must now work to effectively eliminate our use of landfill for this purpose within the next decade, in line with the 2011 EU roadmap to a resource efficient Europe*" (see **Section 2.2.1.3**).

The policy notes[19] that the waste projections set out in the Environmental Protection Agency's National Waste Report 2010, which are based on the ESRI's sustainable development model for Ireland, anticipate that municipal waste arisings will increase by 825,000 tonnes (to 3.7m tonnes) within the next 15 years[20]. The report also states:

> *"While there may be sufficient management capacity in the immediate future, the predicted growth of municipal waste within the coming decade will necessitate investment in waste management infrastructure".*

The policy[21] required the preparation of a regional waste management plan for each of the three waste regions, in recognition of the nature of the Irish waste market and the movement of waste across existing boundaries to avail of waste management infrastructure. In keeping with the proximity and self-sufficiency principles, a key objective of waste management plans is to ensure a sufficiency of waste management infrastructure within the State to manage municipal waste. The three waste regions are shown in **Figure 2.1** below.

[18] See below text on recovery for what the strategy considers to be "appropriate treatment of mixed municipal waste"
[19] Refer to **Section 3** – Planning for the Future of *A Resource Opportunity. Waste Management Policy in Ireland'* (2012).
[20] Note that this ESRI model was reviewed and updated annually in EPA national waste reports until 2012, but is no longer funded (so it is unclear whether it will continue to be used as a forecasting tool). The Regional Waste Plans adopted a waste forecasting approach that takes into account the ESRI modelling as well as other indicators, as outlined in **Chapter 15** of each of the plans.
[21] Refer to **Section 3** – Planning for the Future of *A Resource Opportunity. Waste Management Policy in Ireland'* (2012).

Figure 2.1 Waste Management Regions

It is stated in the 2012 policy that it is important to harness the potential of waste to contribute in a significant manner to displacing the use of finite fossil fuel resources[22].

In considering measures for the encouragement of recovery, the policy advocates that a balance must be struck between the development of essential infrastructure and the importance of ensuring that material, which could be reused or recycled, is not drawn down the hierarchy and that waste generation is not encouraged in order to provide feedstock for recovery processes.

In this context, it is stated that the technical guidance document published by the EPA on *Municipal Solid Waste: pre-treatment and residuals' management* (EPA 2009) is of particular importance, given its provision that residual municipal waste delivered to a waste to energy facility must first have been collected through a source separated system and mechanical treatment for the extraction of metals and other marketable recyclables must be applied to the bottom ashes that are generated following combustion.

Section 9.2 sets out key policy measures and actions in relation to recovery, as follows:

> *"Recovery*

[22] Refer to **Section 9** – Recovery of A Resource Opportunity. Waste Management Policy in Ireland' (2012).

- *the reform of the waste collection permitting system will provide the opportunity for the application of such conditions as are necessary to give effect to the waste hierarchy, reflecting the legal status of the hierarchy and the range of recovery options emerging, to promote self-sufficiency and to drive a move away from disposal and towards recovery;*
- *conditions imposed on each waste collection permit to prohibit waste which has been source segregated by the waste producer for the purposes of recycling, from being sent for recovery or for disposal, will be rigorously enforced;*
- *the careful design and use of incentives and economic instruments will be a key focus for ensuring that waste is not drawn down the waste hierarchy;*
- *government will ensure that the relevant Departments and agencies pursue a coordinated approach in support of the development of recovery infrastructure;*
- *Ireland requires an adequate network of quality waste treatment facilities. A review of recovery infrastructure will be completed by 31 December 2012 and the EPA will advise on requirements in this regard. In particular, this will examine capacity for managing municipal waste in conformity with the principles of proximity and self-sufficiency."*

Furthermore, since the publication of the above guidance document, the European Union (Food Waste and Bio-waste) Regulations 2015[23] have been enacted. These Regulations stipulate that waste collectors shall ensure, as a minimum, that they provide or arrange for the provision of a separate collection service for food waste from households for population agglomerations in accordance with the time schedule set out in Regulation 4 of the 2015 Regulations.

As such, food waste must be source segregated and collected by authorised waste collectors and should not be mixed with other waste, other than specified bio waste and food waste, or other material with different residual municipal waste prior to delivery to authorised facilities including waste to energy facilities.

The EPA review of recovery infrastructure, in the *National Municipal Waste Recovery Capacity* report (EPA 2014), recommended that more data be acquired on facilities handling municipal waste due to confusion over waste acceptance categories, availability or capacity of permitted sites and harmonisation of processing capacities in regulatory classes. The report was followed up with a detailed assessment of facilities handling municipal waste by the Regional Waste Authorities in preparation of the Regional Waste Plans, in collaboration with the EPA. This led to the recommendations referred to below (**Section 2.2.3**) in the Regional Waste Plans.

[23] Statutory Instrument No. 430 of 2015: http://www.irishstatutebook.ie/eli/2015/si/430/made/en/print

The proposed development will provide additional hazardous waste treatment capacity and this will in turn contribute toward self-sufficiency of hazardous waste treatment in the State without impacting on material which could be reused or recycled.

This treatment further avoids the export of such hazardous waste to Europe thus significantly reducing the adverse environmental impacts of unnecessary transport which is not compatible with the self-sufficiency and proximity principles as required by the national Hazardous Waste Management Plan as detailed in the next section.

2.2.2.2 Ireland's National Hazardous Waste Management Plan 2014-2020

The National Hazardous Waste Management Plan 2014-2020 ("NHWMP 2014-2020") (EPA 2014) is the third national hazardous waste plan. It updates and revises the previous plan covering the period 2008 – 2012 (Proposed Revised National Hazardous Waste Management Plan 2013).

Whilst the current Plan covers the period to 2020, the Waste Management Act 1996 as amended, provides that at least once in each period of 5 years after the date of making of the hazardous waste management plan, the Environmental Protection Agency shall review the plan and make such revisions thereto as it thinks fit[24].

In this regard, a Progress Report on the implementation of the National Hazardous Waste Management Plan has been recently published by the Environmental Protection Agency[25] and is detailed below.

Along with this report, any additional information gathered will be used to inform the development of the next Plan, which is due to commence in 2020. It is presently envisaged that a draft replacement Plan will be developed early in 2021 for public consultation in line with the applicable legislation. In addition, the Environmental Protection Agency has published updated hazardous waste figures for 2018 (and detailed in **Section 2.2.2.3** below).

The current NHWMP 2014-2020 sets out the priorities for 2014-2020, taking into account the progress made and the waste policy and legislative changes that have occurred since the previous plan. One area where insufficient progress was made on the previous plan was in achieving self-sufficiency (as described in previous plan), with levels of exported waste staying steady while the proportion of hazardous waste being treated in Ireland is slowly declining.

The NHWMP 2014 – 2020 plan sets out a number of objectives including:

(i) To prevent and reduce the generation of hazardous waste by industry and society generally.

[24] http://www.irishstatutebook.ie/eli/1996/act/10/section/26/enacted/en/html#sec26
[25] http://www.epa.ie/pubs/reports/waste/haz/EPA_NationalHazardousWasteManagementPlan_web.pdf

(ii) To maximise the collection of hazardous waste with a view to reducing the environmental and health impacts of any unregulated waste.

(iii) To strive for increased self-sufficiency in the management of hazardous waste and to minimise hazardous waste export.

(iv) To minimise the environmental, health, social and economic impacts of hazardous waste generation and management.

The objective of moving towards increased self-sufficiency in the management of hazardous waste continues to be recommended, where it is strategically / environmentally advisable, and technically and economically feasible.

This recommendation is in line with several objectives (Refer to section 6.2 of the NHWMP). It recognises the proximity principle established in the WFD and maintained in the amended Directive on waste and it seeks to maximise the re-use and recovery potential of, for example, materials, precious metal and secondary fuels, through provision of a range of local treatment options where practical.

The EU principles of self-sufficiency and proximity require that:

1. *Member States shall take appropriate measures, in cooperation with other Member States where this is necessary or advisable, to establish an integrated and adequate network of waste disposal installations and of installations for the recovery of mixed municipal waste collected from private households including where such collection also covers such waste from other producers, taking into account best available techniques.*
2. *The network shall be designed to enable the Community as a whole to become self-sufficient in waste disposal as well as in the recovery of waste referred to in paragraph 1, and to enable Member States to move towards that aim individually, taking into account geographical circumstances or the need for specialised installations for certain types of waste.*
3. *The network shall enable waste to be disposed of or waste referred to in paragraph 1 to be recovered in one of the nearest appropriate installations, by means of the most appropriate methods and technologies, in order to ensure a high level of protection for the environment and public health.*

The NHWMP 2014-2020 finds that, if Ireland is to become self-sufficient, suitable hazardous waste treatment options would be required. This is further explained in section 6.2 of the NHWMP:

- *There are ancillary environmental benefits deriving from self-sufficiency. Firstly international transport of hazardous waste is minimised eliminating associated risks, and avoiding transport related greenhouse gas emissions. Secondly, it increases availability of recovery and disposal outlets for hazardous waste if problems arise in the export agreements for hazardous treatment in other Member States. However, it is noted that hazardous waste destined for recovery is subject to an open and competitive waste market in the EU.*

Greater self-sufficiency would therefore maximise the treatment and disposal of hazardous waste in Ireland, where strategically advisable, and economically and technically feasible, with policy, environmental and availability-of-outlet benefits.

Section 6.4 of the NHWMP 2014-2020 notes there is a quantity of hazardous waste that is currently exported for incineration for which incineration will remain the most likely management route. It must therefore be concluded that, in combination with the blending of waste solvent for use in cement kilns, and in the absence of alternative techniques that are capable of treating a wide range of diverse waste streams, incineration in Ireland will be needed for some waste streams in order for Ireland to move towards self-sufficiency in the treatment of hazardous waste.

Taking this into consideration, three overarching strategic needs have been identified for action if additional hazardous waste is to be treated in Ireland and exports of hazardous waste are to be reduced (Refer to section 6.2 of the NHWMP), including:

- Expansion of recovery and treatment capacity in Ireland for waste that does not need thermal treatment or landfill – generally referred to as physico-chemical treatment;
- Addressing the deficit in thermal treatment capacity in Ireland (i.e., use as fuel, co-incineration or incineration) for Irish wastes currently being exported (e.g., solvents), and
- Securing of long-term disposal arrangements for hazardous waste streams not suitable for thermal treatment or recovery.

Section 6.2 of the NHWMP 2014-2020 states that consideration should be given to co-location of hazardous waste treatment at existing waste facilities or brownfield sites for the purposes of sustainability and land-use planning.

Two significant public policy constraints were taken into account in preparing the revised Plan (Refer to section 1.1 of the NHWMP).

First, current government policy indicates that large-scale public investment in hazardous waste infrastructure will not be made. The hazardous waste industry in Ireland is entirely owned and operated by the private sector.

No public authorities are involved in the commercial collection of hazardous waste, the provision of storage facilities or the treatment of hazardous waste.

The only exception is the provision of civic amenity sites by local authorities for the deposit of small quantities of household hazardous waste.

Second, in this context, options for private sector investment are presented solely as options and the NHWMP 2014-2020 does not seek to carry out a detailed evaluation of the actual economic feasibility of any such potential investments. Any proposals for hazardous waste management infrastructure would, however, be expected to have regard to the NHWMP 2014-2020 and describe how its overarching objectives would be met.

As regards self-sufficing versus export of hazardous waste and the requirement to strive for increased self-sufficiency in hazardous waste management, the Plan notes that there are ancillary environmental benefits deriving from self-sufficiency.

Firstly, international transport of hazardous waste is minimised (eliminating associated risks, and avoiding transport related greenhouse gas emissions, see **Section 9.4.2.1** of **Chapter 9** ***Climate***). Secondly, it increases availability of recovery and disposal outlets for hazardous waste if problems arise in the export agreements for hazardous treatment in other Member States.

In this regard the Environmental Protection Agency in *Ireland's Environment 2016 – An Assessment*, has also identified that Ireland is dependent on export for the treatment of many hazardous waste streams. It goes on to state that the three strategic needs identified in the National Hazardous Waste Management Plan as detailed above, must be implemented if Ireland is to strive for the achievement of self-sufficiency in hazardous waste management and as such minimise the environmental, health and social and economic impacts of hazardous waste generation and management.[26]

Thus, the treatment of additional hazardous waste, including hazardous aqueous waste as a component of the proposed development, will contribute to the State becoming more self-sufficient in the management of hazardous waste generated and furthermore, is in alignment with such waste being treated in a more proximate manner and wider climate mitigation measures through the associated reduction in transport emissions through domestic treatment at an existing recovery facility in the State.

Moreover, it should also be noted that as a Party to the United Nations Basel Convention,[27] Ireland has committed to minimising the movement of waste for disposal, consistent with the principles of proximity, self-sufficiency and priority for recovery, and to reducing the quantities of hazardous wastes generated[28].

One of the guiding principles of the Basel Convention is that, in order to minimise the threat to human health and the environment, hazardous wastes should be dealt with as close to where they are produced as possible. Thus, in line with the proposed development and its compatibility with Ireland's National Hazardous Waste Management and the 2018 Progress Report on its implementation, it is also consistent with the principles of proximity, self-sufficiency and priority for recovery laid down in the Basel Convention on the Control of Transboundary Movements of Hazardous Waste.

[26]Ireland's Environment 2016 – An Assessment, Chapter 6, Hazardous Waste Management at page 10: http://www.epa.ie/pubs/reports/indicators/SoE_Report_2016.pdf
[27] http://www.basel.int/TheConvention/Overview/TextoftheConvention/tabid/1275/Default.aspx
[28]The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal: http://www.basel.int/TheConvention/Overview/TextoftheConvention/tabid/1275/Default.aspx

2.2.2.3 Progress Report on the implementation of Ireland's National Hazardous Waste Management Plan 2014-2020

Additionally, and as referred to above, the Environmental Protection Agency in 2018 published a Progress Report on the implementation of the National Hazardous Waste Management Plan. This Progress Report once again underlines the key objective of increasing Ireland's level of self-sufficiency regarding hazardous waste management.

The report also presents the progress of the recommended actions outlined in the NHWMP 2014-2020 and underlines that while many recommended actions have been advanced, a stronger focus is needed in the areas of hazardous waste prevention and the development of waste management infrastructure if Ireland is to become more self-sufficient in the treatment and management of hazardous waste.

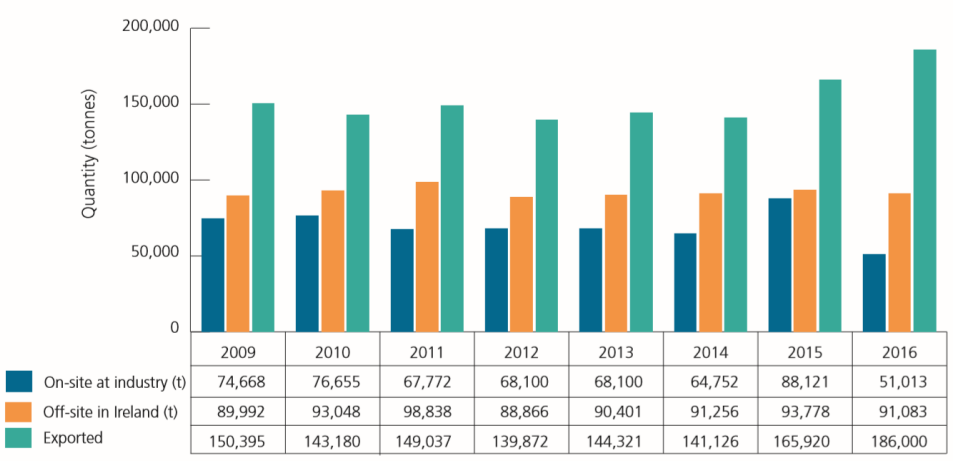
In this regard, the Report finds that whilst Ireland has moved towards greater self-sufficiency regarding hazardous waste management since the publication of the last NHWMP 2014-2020, the often more favourable cost option of treatment and disposal abroad has meant that export continues to be a significant treatment route for Ireland's hazardous wastes and further warns that the overreliance on any one export market for the treatment of hazardous waste is not advisable. The Report further notes that the impending departure of the UK from the European Union will have implications for hazardous waste export routes such as Northern Ireland and Great Britain.In terms of the provision of hazardous waste treatment infrastructure, the Report finds that Ireland's self-sufficiency for the environmentally sound management of hazardous waste is contingent upon commercial decisions taken by private sector service providers regarding the provision of infrastructure for hazardous waste and specifically states:

> *'While the introduction of economic and other instruments to provide incentives to potential investors remains under consideration, Ireland's self-sufficiency for the environmentally sound management of hazardous waste is contingent upon commercial decisions taken by private sector service providers regarding the provision of infrastructure for hazardous waste'.* [29]

This Report states that in 2016, 371,000[30] tonnes of hazardous waste was generated with 409,000[31] tonnes of hazardous waste managed in Ireland.

[29] Progress Report National Hazardous Waste Management Plan, Infrastructure and Self-Sufficiency Section at page 20
[30] Hazardous waste generated figure discounts (a) hazardous waste partially treated waste for export, (b) onsite treatment with recovery (R2) code and (c) waste imported for treatment. Generated (rather than managed) figure is reported for Ireland under Basel Convention requirements.
[31] Figure excludes contaminated soil (at time of writing, the EPA Report referred to this figure as being included, figure, however, the EPA has since confirmed that this figure should be excluded).

Almost 186,000 tonnes[32] was exported which is an increase of 11 % on 2015 and 6% on 2014[33], thus demonstrating an increase on the previous figures from 2012 as contained within the EPA National Waste Report 2012 (EPA 2014). This data can be seen in **Figures 2.2a** and **2.2b** below which are directly extracted from the report[34].



	2009	2010	2011	2012	2013	2014	2015	2016
On-site at industry (t)	74,668	76,655	67,772	68,100	68,100	64,752	88,121	51,013
Off-site in Ireland (t)	89,992	93,048	98,838	88,866	90,401	91,256	93,778	91,083
Exported	150,395	143,180	149,037	139,872	144,321	141,126	165,920	186,000

Figure 2.2a Trend data for hazardous waste treated on-site, off-site within Ireland and exported outside of Ireland. Source EPA National Hazardous Waste Management Plan 2014-2020.

[32] Figure excludes contaminated soil. Exclusion of contaminated soil brings exports to 50% of total hazardous waste managed in Ireland.
[33] As per Figure 2 Trend Data for hazardous waste treated on-site, off-site within Ireland and exported outside of Ireland and Figure 3 Comparison of hazardous waste managed (off site & onsite), exported and contaminated soil, 2012 and 2016 of the Progress Report at pages 7 and 8.

[34] Note: hazardous waste partially treated waste for export: Regulation (EC) No. 2150/2002 on Waste Statistics require a distinction to be made between waste generation and waste treatment figures. The waste generated figure should not include the waste treated at economic operators, which is known as secondary waste, this requirement is detailed in full in the Eurostat Manual on Waste Statistics: https://ec.europa.eu/eurostat/documents/3859598/5926045/KS-RA-13-015-EN.PDF/055ad62c-347b-4315-9faa-0a1ebcb1313e

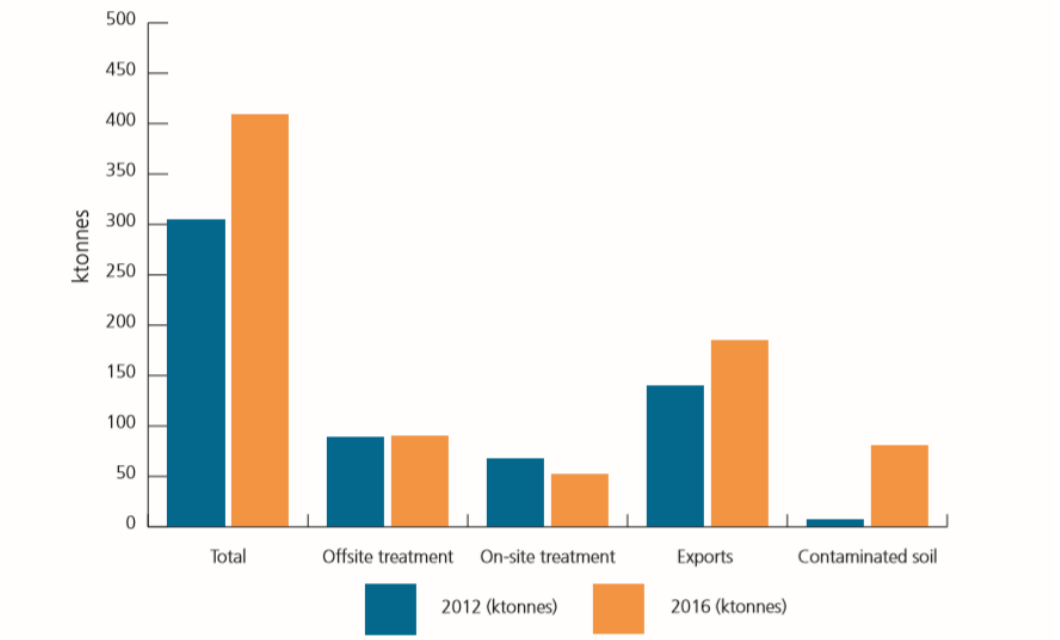


Figure 2.2b Comparison of hazardous waste managed (off site & onsite), exported contaminated soil, 2012 and 2016. Source EPA National Hazardous Waste Management Plan 2014-2020.

Thus, given such increases in the generation of hazardous waste and in the export of the same, the need for additional treatment capacity is once again highlighted by virtue of such increased figures. In this regard, the Progress Report underlines a priority action for the remaining lifetime of the NHWMP 2014-2020 (up to 2020) which includes the promotion of Ireland's self-sufficiency goals regarding the treatment and management of hazardous waste which the proposed development will contribute to through the treatment of additional hazardous waste.

In this context, the aspect of the proposed development which involves the thermal recovery of additional hazardous waste including hazardous aqueous waste currently accepted at the facility in a tank farm, will help to address the deficit in thermal treatment capacity in Ireland for suitable hazardous waste and will make a significant contribution toward hazardous waste self-sufficiency thereby reducing exports (by an additional 15,000 tonnes per annum) and minimising hazardous waste export.

The proposed development is also consistent with the provisions of the EMRWMP (as detailed below) which identifies an additional 50,000 tonnes of thermal recovery capacity for the treatment of hazardous wastes on a national basis. The additional acceptance of hazardous residues for treatment at the facility is also compatible with the overarching objectives of the National Hazardous Waste Management Plan and the recent progress report on its implementation and which once again underlines the key objective of increasing Ireland's level of self-sufficiency regarding hazardous waste management.

Moreover, one of the key strategic objectives of the National Hazardous Management Plan in section 6.2 provides for the expansion of recovery and treatment capacity for waste that does not need thermal treatment or landfill and is generally referred to as physico-chemical treatment. In this regard, the solidification of boiler ash and flue gas cleaning residues as a constituent part of the proposed development, gives effect to and is compatible with this key policy objective of the National Plan.

In line with plan led and evidence-based development which underpin the National Planning Framework objectives (detailed below) and sustainable land-use planning goals, the proposed facility will co-locate hazardous waste treatment with the existing treatment of residual municipal waste treatment. Furthermore, it will represent a further significant private sector investment in hazardous waste infrastructure, which is clearly identified as necessary in order to deliver hazardous waste infrastructure and enhanced self-sufficiency within the State

Accordingly, the proposed development may be regarded as being in alignment with both the National Hazardous Waste Management Plan 2014-2020 and the 2018 Progress Report on its implementation, as it will contribute to the achievement of self-sufficiency in the treatment in hazardous waste within the State as prioritised and underlined in clear terms in both policy documents.

Furthermore, the proposed development will also contribute to wider climate mitigation policy measures and the State's transition to a low carbon economy as there is an associated environmental benefit of avoiding the transport (see **Section 9.4.2.1** of **Chapter 9** ***Climate)*** of hazardous waste over longer distances through export to Europe and the avoidance of transport related greenhouse gas emissions.

This ancillary environmental benefit deriving from self-sufficiency is expressly recognised in the National Hazardous Waste Management Plan and the guiding principles of the Basel Convention centered on minimising the movement of hazardous waste for disposal, consistent with the principles of proximity, self-sufficiency and priority for recovery.

2.2.2.4 Climate Action Plan 2019

The Irish Government published its Climate Action Plan 2019 which aims to lay down measures to enable Ireland to meet its EU targets to reduce its carbon emissions by 30 per cent between 2021 and 2030 and furthermore, lays the foundations for achieving net zero carbon emissions by 2050.

In total, the Plan sets out 180 actions that need to be taken and which extend to all sectors of the economy including a specific chapter dedicated to Waste and the Circular Economy[35]. The Plan notes that waste emissions per capita are lower in Ireland than the EU average, contributing 1.5% of greenhouse gas emissions in 2017. However, Ireland's material consumption is well above the EU average and continues to increase with economic growth.

[35] Climate Action Plan 2019, Chapter 12, Waste & Circular Economy, pages 112-119: https://assets.gov.ie/10206/d042e174c1654c6ca14f39242fb07d22.pdf

The Plan also lays out timeframes to be adhered to in the context of sector specific policy updates as referred to above in the context of the upcoming review of the national waste policy document 'A *Resource Opportunity'* and the Regional Waste Management Plans.

For present purposes, the chapter on Waste and the Circular Economy is detailed in this waste policy section with a general overview of the Plan including the introduction of a carbon tax and carbon budgets, and specific chapters relating to renewable energy and transport detailed in the national energy policy section below. Broadly speaking, all such chapters are relevant to the proposed development to be carried out at the facility, most notably those on waste and the circular economy, renewable energy and transport.

In terms of managing waste, The Climate Action Plan states that the Government will lead the transformation from waste management to circular economy practice through delivery of a new national policy (as detailed above). The Plan also reiterates in clear terms that Irish and regional waste policy is based on the waste hierarchy: waste prevention; preparing for reuse; recycling; and energy recovery; with disposal, namely landfill, being the least desirable option. As the proposed development will be carried out at a dedicated recovery facility, it is therefore considered that the same is compatible with the national Climate Action Plan 2019 objectives relating to the proper management of waste.

The Plan also provides that waste legislation will be revised to incorporate new circular economy requirements, including the legally binding waste and recycling targets. In this regard, all Member States, including Ireland are obliged to introduce national laws and regulations necessary to give effect to the revised Directives which form part of the CEP by 2020.

The aim under the Plan is to reduce landfill to 10% of all waste and to recycle 70% of all waste by 2030. The Plan also proposes banning single-use plastic and ensuring that all packaging is recyclable by 2030.

In terms of targets, the Plan lays down the following specific targets relating to landfill reliance, recycling, food waste and single-uses plastics.

With regard to landfill reliance, the Plan lays down the following targets:

- Reduce diversion of municipal waste to 10% by 2035; and
- Limit diversion of biodegradable municipal waste to landfill to maximum limit of 427k tonnes by 2020 and for every year after.

With regard to recycling, the Plan sets out the following targets which are broadly in line with the Circular Economy Plan targets as adopted in the revised Directive on Waste:

- Recycle 65% of municipal waste by 2035;
- Recycle 70% of packaging waste by 2030;
- Recycle 55% of plastic packaging waste by 2030; (not present in the CEP);
- Separate collection obligations extended to include hazardous household waste (by end 2022), bio-waste (by end 2023), and textiles (by end 2025).

The Plan also includes a food waste reduction target to:

- Reduce food waste by 50% by 2030.

In terms of single-use plastics, the Plan sets out a number of policy objectives including:

- Ban specific single-use plastic convenience items including polystyrene food containers, cups and drinks containers in line with the EU Single Use Plastics Directive;
- Provide for 90% collection of plastic drinks containers by 2029;
- Determine and introduce reduction targets and measures no later than 2022 to be achieved no later than 2026; and
- Ensure all plastic packaging is reusable or recyclable by 2030.

In terms of policy updates and actions, the Plan provides that a new National Waste Prevention Programme will be developed with revisions to the existing national waste policy document 'A Resource Opportunity' and Regional Waste Management Plans also to be introduced with the intention of guiding a transition to a circular economy by the EPA and Local Authorities. A new Circular Economy Policy and Action Plan for Ireland will also be developed.

In this regard, the Plan lays down key milestones in terms of carrying out public consultation and implementing the updated and newly developed plans. As detailed above, a revised national waste policy is expected to be in place (following review of submissions) by Q2 2020. This will in turn lead to revised regional waste management plans by early 2022.

The Plan also states that opportunities will be identified to strengthen the regulatory and enforcement frameworks and structures for the waste collection and management system, to maximise the collection of clean, segregated materials for reuse and/or recycling from all households and businesses, and to incentivise consumers to reduce, reuse and recycle.

In addition, a number of possible environmental levies will be scoped, including a possible levy on single use plastics, as part of the review of the Environment Fund.

Finally, the Climate Action Plan provides that measures to address the key regulatory barriers to the development of the bioeconomy, including exploring opportunities to establish "End of Waste" criteria for certain bio-wastes, will also be identified and delivered.

With regard to the ambitious policy objectives contained in the Plan relating to the use of single-use plastics, it is important to highlight an associated issue concerning the management of soft plastics. Currently in Ireland such material is not accepted at kerbside for recycling and must be placed in the general waste (black/residual) bin.

This measure was taken in 2017 by the Department of Communications, Climate Action and the Environment (DCCAE) as a result of the ban on the import of a number of types of plastic to China.[36] With regard to the existing treatment of waste and the proposed development to be carried out at the Carranstown facility, the treatment of soft plastics rapidly increase the calorific value of waste which in turn causes municipal waste-to-energy facilities to reach their thermal output at an accelerated rate.

This ultimately reduces the amount of waste that the facility can treat and therefore, diversion would prevent such material from being landfilled or exported abroad for thermal treatment. In this regard, if this material was separately collected by householders, it could be used to fuel cement kilns that benefit from its high calorific content, thereby facilitating a more sustainable solution that is much needed for this plastic waste stream.

In general terms, the proposed development may be regarded as being consistent with the policy objectives laid down in the Climate Action Plan as these are focused on the transition to a circular economy.

Specifically, the Plan underlines the significance of the circular economy in delivering sustainable growth and promoting climate change mitigation as reflected in the UN Sustainable Development Goals (as detailed above) and specifically Goal 12. This Goal sets out a series of targets that include resource efficiency, wasted food, waste management, reuse and recycling, public procurement, education, and removal of fossil fuel subsidies.

In terms of the waste management target, the management of all wastes including those that are hazardous must be handled in an environmentally sound manner for the duration of their life cycle.

The proposed development through the sustainable and environmentally sound management of all waste including those that are hazardous in line with stringent operating conditions as predicated on European and national legislative requirements, accords with this goal and the broad circular economy policy underpinnings of the national Climate Action Plan.

2.2.3 Regional Waste Policy

2.2.3.1 Eastern Midlands Region Waste Management Plan 2015-2021

The Eastern Midlands Region Waste Management Plan [EMRWMP] 2015 – 2021 is one of three regional waste plans made in line with statutory obligations and incorporating certain requirements of the WFD. The Eastern Midlands Region covers the administrative areas of the following local authorities – Dublin City Council, Dun Laoghaire-Rathdown County Council, South Dublin County Council, Fingal County Council, Wicklow County Council, Kildare County Council, Laois County Council, Offaly County Council, Westmeath County

[36] See https://www.mywaste.ie/about-mywaste/

Council, Longford County Council, Meath County Council and Louth County Council. The region has a population of 2,249,603.

The approach of the regional waste plans is to put into place coherent policy objectives and actions which align with European and national policy and support Ireland's move to an economy defined by higher resource efficiency and productivity. The regional waste plans cover the period from 2015 to 2021 and in line with statutory requirements are required to be revised or replaced every six years.

The evaluation of these plans is scheduled to commence with a pre-draft consultation in 2020, the draft Regional Waste Plans to be consulted upon in 2021 and the implementation of the replacement plans to take place in 2022 as detailed in the Climate Action Plan 2019.

The strategic vision of the EMRWMP is to view waste streams as valuable material resources, leading to a healthier environment and sustainable commercial opportunities. The EMRWMP seeks to encourage a transition from a waste management economy to a green circular economy by increasing the value recovery and recirculation of resources.

In line with this vision, the EMRWMP sets out targets to 2030. These include:

- Absolute decoupling of household waste from economic growth and disposable income. Preparing for reuse and recycling rate of 60-70% of municipal waste by the end of 2030 (since the adoption of the Circular Economy Package, fifty-five percent of municipal waste must be prepared for re-use and recycling by 2025, 60 percent by 2030, and 65 percent by 2035).
- Reduce and where possible eliminate the use of landfilling of all major waste streams including municipal, industrial and construction and demolition wastes in favour of the recovery of residual wastes.

Section 16 of the EMRWMP assesses the current availability of waste treatment capacity and future capacity requirements. The EMRWMP states that the need for future treatment capacity requires careful consideration and must take into account predicted waste growth, growing recycling rates, future targets, the continued move away from landfill and the conversion of pending capacity into active treatment.

The development of future thermal recovery facilities will be viewed as national facilities addressing the needs of the State and will not be defined by regional markets alone.

With regards to future treatment capacity requirements, the EMRWMP recommends the following regarding hazardous waste treatment capacity:

- **Objective E15b** of the plan supports the need for thermal recovery capacity to be developed specifically for the on-site treatment of industrial process wastes and where justifiable, the treatment of such wastes at merchant thermal recovery facilities; and
- **Objective E16** supports the development of up to 50,000 tonnes of additional thermal recovery capacity for the treatment of hazardous wastes nationally to

ensure that there is adequate active and competitive treatment in the market to facilitate self-sufficiency needs where it is technically, economically and environmentally feasible.

The EMRWMP also confirms that the development of waste infrastructure will be driven by the private sector. The local authorities in the Eastern Midlands Region do not foresee any capital investments and furthermore, the Plans states:

> *"Private sector investment is anticipated in the development of other recovery facilities to treat residual municipal wastes and residual hazardous wastes"*

In summary, the EMRWMP is underpinned by the principles of self-sufficiency and proximity. The region will promote sustainable waste management in keeping with the waste hierarchy and the move towards a circular economy and greater self-sufficiency.

The proposed development constitutes a private sector development, which will provide additional thermal recovery capacity for the treatment of additional hazardous wastes in accordance with policy Objective E16 of the EMRWMP.

2.3 Energy and Climate Change Policies

The proposed development will take place at the Carranstown facility which currently generates 21.5MW of electricity of which 19MW is exported to the national grid. A portion of this electricity[37] will be generated from the biodegradable fraction of industrial and municipal waste and is therefore considered to be energy from renewable sources. Waste is also an indigenous energy resource.

As such, the treatment of additional hazardous waste at the facility is compatible with the existent treatment of hazardous waste and will not affect the generation of renewable energy already produced at the facility in any regard.

In addition, the development of a hydrogen generation unit as part of the proposed development for connection to the gas distribution network and for use in mobile transport applications is compatible with broad policy objectives and the obligation to use energy at all stages of the energy chain in the most efficient manner possible as detailed below.

For these reasons, as the proposed development will be carried out at the existing thermal recovery facility at Carranstown, it may be said to align in broad terms with and contribute towards the attainment of European and national energy policy objectives as set out below.

[37] Based on experience at the Meath waste to energy facility, the fraction of electricity generated from renewable sources is estimated to be approximately 50%.

2.3.1 European Climate & Energy Policy

In terms of targets for 2020, the 2020 Climate and Energy Package included a suite of Directives including the Renewable Energy Directive ((2009/28/EC) and the Energy Efficiency Directive (Directive 2012/27/EU). The Renewable Energy Directive (2009/28/EC) required the EU to fulfil at least 20% of its total energy needs with renewables by 2020 through mandatory Member State renewable targets.

Since then, the EU has adopted a range of legislative acts to achieve its ambition to develop an Energy Union. Its aim of is to make energy more secure, affordable and sustainable. It is made up of five closely related and mutually reinforcing dimensions:

- security, solidarity and trust: diversifying Europe's sources of energy and ensuring energy security through solidarity and cooperation between EU countries;
- a fully integrated internal energy market: enabling the free flow of energy through the EU through adequate infrastructure and without technical or regulatory barriers;
- energy efficiency: improved energy efficiency will reduce dependence on energy imports, lower emissions, and drive jobs and growth;
- decarbonising the economy: the EU is committed to a quick ratification of the Paris Agreement and to retaining its leadership in the area of renewable energy;
- research, innovation and competitiveness: supporting breakthroughs in low-carbon and clean energy technologies by prioritising research and innovation to drive the energy transition and improve competitiveness.[38]:

In 2016, the European Commission introduced a package of measures to provide the stable legislative framework needed to facilitate the clean energy transition – and thereby taking a significant step towards the creation of the Energy Union. The Clean Energy Package consists of 8 different legislative acts, which have now been agreed by institutions of the EU.

This put in place a legislative footing to meet the objectives of the 2030 framework for climate and energy policies (European Commission 2014, *A policy framework for climate and energy in the period from 2020 to 2030*) which aims to make the European Union's economy and energy system more competitive, secure and sustainable and sets targets for at least 32% share for renewable energy, at least 32.5% improvement in energy savings by 2030 and at least 40% reduction in greenhouse gas emissions compared to 1990.

The recast Renewable Energy Directive sets out a new regulatory framework which includes a binding renewable energy target for the EU for 2030 of 32% with an upwards revision clause by 2023.[39]

[38] Refer to overview of the EU's Energy Union at https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/building-energy-union
[39] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L2001&from=EN

The Energy Efficiency Directive is described in further detail below.

2.3.1.1 Clean Energy Package

The package specifically notes in relation to thermal recovery that:

> *"The Commission will further establish synergies between energy efficiency policies, resource efficiency policies and the circular economy. This will include exploiting the potential of "waste to energy".*

In February 2015, the European Commission published an Energy Union framework package (European Commission COM/2015/080) which aimed to build on the 2030 and 2050 frameworks and integrate a series of policy areas into one cohesive strategy with a cohesive set of measures.

In this regard, in 2017 the Commission published a waste to energy Communication to enhance synergies between the circular economy, resource efficiency and waste-to-energy. The European Commission's Waste-to-Energy communication, *The role of waste-to-energy in the circular economy*,[40] seeks to provide guidance to Member States on how to achieve properly balanced waste-to-energy capacity. It also affirms that the waste hierarchy remains as the cornerstone of EU policy and legislation and is a key to a transition to a circular economy.

In this regard, the Communication states:

> *'Waste-to-energy processes can play a role in the transition to a circular economy provided that the EU waste hierarchy is used as a guiding principle which ranks waste management options according to their sustainability and gives top priority to preventing and recycling of waste[41]'.*

In the context of energy recovery, the Communication goes on to state that when waste cannot be prevented, prepared for reuse or recycled, recovering the energy embedded in it and injecting it back in the economy is the next best environmental and economic option. The treatment of unavoidable wastes and residues and hazardous wastes by the energy to waste process may be regarded as paying due regard to the waste hierarchy as it falls within the recovery tier of the waste hierarchy and is to be favoured over landfill whereby such wastes would contribute to greenhouse gas emissions, leachate and would necessarily involve significant after care and which may by implication may be regarded as the least favoured environmental option and the least preferred tier of the waste hierarchy.

Energy from waste is also presented as a means of producing low-cost heat and often initiates development of a city's district heating network, utilising the energy content embedded in the waste according to the Communication.

[40] http://ec.europa.eu/environment/waste/waste-to-energy.pdf
[41] As above.

Whilst the Communication does state that investments in treatment facilities for industrial waste for residual waste, such as extra incineration capacity should only be granted in limited and well justified cases, where there is no risk of overcapacity and the objectives of the waste hierarchy are fully respected, in Ireland and many other Member States a risk of such overcapacity does not exist and can be justified from a long term perspective given the lack of treatment capacity as set out in national policy documents.

Furthermore, given that the proposed development will take place at an existing facility classed as a recovery operation pursuant to the waste hierarchy and will contribute to the continued diversion of waste from landfill and associated negative and harmful environmental impacts, it may therefore be regarded as according with the proper application of the waste hierarchy and furthermore, may be said to be in broad alignment with this Communication.

In addition, the Energy Efficiency Directive (Directive 2012/27/EU), promotes the use of cogeneration, district heating and cooling, and waste industrial heat recovery. The directive also provides that all EU countries are required to use energy more efficiently at all stages of the energy chain, including energy generation, transmission, distribution and end-use consumption.

The development of a hydrogen generation unit as part of the proposed development for connection to the gas distribution network and for use in mobile transport applications is thus supportive of this obligation to use energy at all stages of the energy chain in the most efficient manner possible. By implication, such improvements in energy use and efficiency will therefore improve the sustainability of the Carranstown facility in broad terms.

The production of hydrogen and the relevant technical aspects of the same are referred to in **Section 4.5.4** of **Chapter 4** ***Description of the Proposed Development*** and **Section 9.5.3** of **Chapter 9** ***Climate***, of this EIAR.

The proposed development through the generation of hydrogen will contribute towards objectives of energy and resource efficiency and the circular economy as highlighted in the Energy Union package.

The revised Renewable Energy Directive (2018/2001), due to be transposed by Member States by 30 June 2021, gives member states the freedom to support hydrogen produced from renewable sources (biomass and renewable electricity). Such mechanisms could potentially include the inclusion of the hydrogen in the Biofuel Obligation Scheme and counting towards meeting renewable energy targets.

Also, whilst transport applications utilising hydrogen may not be regarded as 'zero emissions', it is important to note that they have zero tailpipe emissions, similar to electric vehicles. Hydrogen fuel cells emit only water vapour and heat – no CO_2 or NO_x pollutants. Therefore, the emissions per km from hydrogen transport applications is far less than driving petrol or diesel and moreover, remove emissions from the air, preventing pedestrians and cyclists from breathing in dangerous gases. As a result, the use of hydrogen can provide both direct and indirect environmental benefits.

2.3.1.2 Revised Renewable Energy Directive

The revised Renewable Energy Directive on the promotion of the use of energy from renewable sources (recast) seeks to promote renewable forms of energy as one of the goals of the Union energy policy. The increased use of energy from renewable sources constitutes an important part of the package of measures needed to reduce greenhouse gas emissions in the European Union.

The revised Directive provides the following definitions in Article 2:

> *'energy from renewable sources' means energy from renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and, geothermal energy, ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases;*
>
> *biomass' means the biodegradable fraction of products, waste and residues from biological origin from agriculture, including vegetal and animal substances, forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of waste, including industrial and municipal waste of biological origin.*

Therefore, the energy generated from the biodegradable fraction of industrial and municipal waste is considered to be energy from renewable sources and the proposed development will be carried out at the existing Carranstown recovery facility.

To encourage the development of renewable energy, the revised Directive requires the EU to fulfil at least 32% of its total energy needs with renewables by 2030. Member States should also take additional measures in the event that the share of renewables at the Union level does not meet the Union trajectory towards the at least 32% renewable energy target. These ambitious targets continue to support the generation of electricity from waste through waste-to-energy technology.

Finally, to ensure progress, the revised Directive also requires that Member States prepare and submit Renewable Energy Action Plans and Progress Reports that set out Member States' national targets for the share of energy from renewable sources consumed in transport, electricity and heating and cooling in 2030.

The proposed development to be carried out at the Carranstown facility will continue to generate renewable electricity from the biomass contained in residual waste, thereby contributing toward achieving the EU's renewable energy targets.

2.3.2 National Climate & Energy Policy

2.3.2.1 White Paper Ireland's Transition to a Low Carbon Energy Future 2015-2030

As discussed in **Section 2.3.1.1**, Member States must set out how they plan to meet their climate and energy objectives in the National Energy and Climate Plan (NECP).

Following extensive consultation on the Green Paper on Energy Policy in Ireland (Department of Communications, Energy and Natural Resources (2014), the White Paper, Ireland's Transition to a Low Carbon Energy Future 2015-2030[42] has been published, with the primary objective being that of guiding a transition to a low carbon energy system which provides secure supplies of competitive and affordable energy.

The White Paper constitutes a complete energy policy update and sets out a framework to guide policy and the actions that Government intends to take in the energy sector from now up to 2030. The paper takes into account European and International climate change objectives and agreements, as well as Irish social, economic and employment priorities.

As Ireland progresses towards a low carbon energy system, this policy update will help to ensure secure supplies of competitive and affordable energy for Ireland's citizens and businesses, including that generated from renewable energy which will continue to be provided at the Carranstown facility where the proposed development will be carried out.

The long-term development of Ireland's abundant, diverse and indigenous renewable energy resources is a defining element of this energy policy. Not alone is renewable energy of key environmental importance, it also provides a sustainable, economic opportunity for Ireland, both in terms of providing a secure, indigenous, source of energy.

It recognises the versatility of waste and other biomass fuels that can be used for heating, transport and power generation, and states how:

- bioenergy can contribute to broader policy objectives such as waste recovery and rural development.
- it aligns with waste management policy in Ireland i.e. the need to develop efficient ways to extract as much value as possible from waste in accordance with the requirements of the waste hierarchy and the opportunity for waste to be used as an indigenous energy resource.
- the three regional waste management plans for the period 2015-2021 support the development of additional thermal recovery and biological treatment capacity within the State.
- measures in the White Paper also gives effect to national waste policy in terms of utilising waste as a resource.
- the Renewable Energy Feed in Tariff (REFIT) schemes, which support the generation of electricity and CHP technologies including waste-to-energy, anaerobic digestion and landfill gas, continue to support the use of waste as a renewable energy feedstock. REFIT provides financial support for the renewable portion of energy from waste-to-energy plants, to assist the development of waste-to-energy projects.

[42] https://www.dccae.gov.ie/en-ie/energy/publications/Documents/2/Energy%20White%20Paper%20-%20Dec%202015.pdf

The draft replacement Bioenergy Action Plan (2014)[43] further emphasises that bioenergy – including from waste - will be an essential element in contributing to Ireland's future energy needs and has the potential to provide significant economic and environmental benefits. It recognises that developing the bioenergy sector can also help in achieving wider policy objectives in areas such as waste recovery.

The proposed development will therefore continue to contribute toward the energy policy pillars of sustainability, security, competitiveness and contribution to the circular economy by generating renewable energy from indigenous biomass resources.

2.3.2.2 Climate Action and Low Carbon Development Act 2015

The Climate Action and Low Carbon Development Act 2015[44] entered into law in 2015 and provides a statutory basis to transition to a low carbon, climate resilient and environmentally sustainable economy. The Climate Act is Ireland's first overarching piece of climate change legislation and provides that annual emissions limits should be agreed at the EU level.

In summary, the Act provides the tools and structures to transition towards a low-carbon economy and it anticipates that it will be achieved through a combination of:

- a national mitigation plan (to lower Ireland's level of greenhouse emissions);
- a national adaptation framework (to provide for responses to changes caused by climate change); and
- tailored sectoral plans (to specify the adaptation measures to be taken by each Government department).

The Irish Government's Climate Action Plan 2019 has confirmed the introduction of a new Climate Action (Amendment) Bill which will introduce a new governance structure including a Long-Term Climate Strategy.

This new legislation will:

- Make the adoption of carbon budgets a legal requirement;
- Require the Government to set a decarbonisation target range for each sector, with the Minister with primary responsibility for the sector being accountable for delivering the relevant actions to meet the sectoral target;
- Establish the Climate Action Council as a successor organisation to the Climate Change Advisory Council;
- Establish that the Climate Action Plan shall be updated annually;
- Establish that a Long-Term Climate Strategy, to match the period covered by the three five-year carbon budgets, shall be published:

[43] https://www.dccae.gov.ie/documents/Draft%20Bioenergy%20Plan.compressed.pdf
[44] http://www.irishstatutebook.ie/eli/2015/act/46/enacted/en/index.html

- the first Strategy would be published for the period 2021 to 2035, and will also include a longer-term perspective to 2050;
- the Strategy will be updated at least every five years; and
- Ensure that the proposed governance arrangements retain sufficient flexibility.

The Climate Action Plan 2019 also confirms that it is intended that the Long-term Climate Strategy will be a statutory successor to the National Mitigation Plan (which is described in **Section 2.3.2.3** below).

2.3.2.3 National Mitigation Plan 2017

The National Mitigation Plan 2017[45] contains measures to address the challenge to 2020 and begins the process of developing of medium to long term options. According to the Climate Act 2015, it must specify the policy measures that Government consider are required to manage greenhouse gas emissions and the removal of emissions to meet Ireland's international obligations.

It identifies opportunities for decarbonising the heating sector by using waste as a fuel.

Related publications include:

- The UN Intergovernmental Panel on Climate Change report in 2014 (*Climate Change 2014: Impacts, Adaptation, and Vulnerability)* which clarified that electricity generated from gas and coal must be replaced with renewable electricity generation within 35 years.
- The 2030 framework for climate and energy policies (referred to above in **Section 2.3.1**), agreed in principle at the European Council meeting in October 2014, which sought a reduction in greenhouse gas emissions of 40%; an increase in EU energy from renewable sources to 27%; and an indicative target of 27% for energy efficiency.

These policies and reports all recognise the very significant contribution that renewables will make in the period to 2030, which is the next critical milestone on the EU's transition to a low-carbon European economy by 2050. The proposed development will help to reduce greenhouse gas emissions from waste management by diverting hazardous waste from export to continental Europe and recovering renewable energy from it. In addition, the provision of additional hazardous treatment capacity in the region will reduce the export of this waste for recovery to Europe thus reducing carbon emissions from the transport of waste.

As referred to above, the proposed Long-Term Climate Strategy referenced in the Irish Government's Climate Action Plan will be a statutory successor to the National Mitigation Plan.

[45] DCCAE, National Mitigation Plan, July 2017

2.3.2.4 Climate Action Plan

The Government's 2019 Climate Action Plan sets out cross-sector objectives aimed at reducing Ireland's carbon emissions and aims to lay down measures to enable Ireland to meet its EU targets to reduce its carbon emissions by 30 per cent between 2021 and 2030.

The Plan furthermore, lays the foundations for achieving net zero carbon emissions by 2050. In total, the Plan sets out 180 actions that need to be taken and which extend to all sectors of the economy. The Plan also lays out timeframes to be adhered to in the context of sector specific policy updates such as in the Plan's Waste and Circular Economy chapter as detailed above in the national waste policy section of this EIAR Chapter.

For present purposes and given the ambitious scope and policy objectives contained in the Plan, it is important to outline such objectives including the commitment given to implementing a carbon tax rate of at least €80 per tonne by 2030, accompanied by a trajectory of increases over successive annual Budgets and a carbon budgeting regime in addition to sector specific policies relating to energy, including those relevant to the generation of renewable energy and to the transport sector as the same are most relevant in the context of the proposed development.

The Plan also sets out measures relating to the introduction of a carbon tax and carbon budgets. A new Climate Act will be introduced in this regard which will make carbon budgets a legal requirement as referred to above. The Government will be required to introduce carbon budgets for three five-year periods commencing in 2021. Thereafter, a decarbonisation target will be proposed as will an annual trajectory for each sector and failure to adhere to the targets will result in the imposition of penalties.

The 2019 Plan also underlines the Government's commitment to introduce a carbon tax of at least €80 per tonne by 2030 in order to reach its carbon reduction targets by 2030. This tax will be increased gradually over successive annual Budgets and is aimed at changing behaviour and encouraging investment in low-carbon alternatives.

In this regard, the Climate Action Fund is committed to funding initiatives that make a positive contribution to the achievement of Ireland's climate targets. It is envisaged that significant investment from the private sector will be required to assist with Ireland's transition to a low-carbon society.

The Plan's policy objectives are set against a backdrop where Ireland is expected to miss its 2020 target for renewables by 12% and its targets for cumulative emissions by a little under 5%. The State is also expected to miss its target for 2030.

With regard to sector specific requirements, the Plan lays down specific policy measures and targets as seen above in the context of waste and the circular economy. The specific requirements relating to the renewable energy and transport sectors are also relevant to the proposed development and are detailed below.

Renewable Energy

The Climate Action Plan sets out a co-ordinated plan that aims to optimise the use of renewable resources as currently only 30% of Ireland's electricity comes from renewable resources. The Plan therefore aims to increase this figure to 70% by 2030.

As a result, substantial new infrastructure will be required, and the Plan identifies the potential for 3.5GW of offshore renewable energy; 1.5GW of grid-scale solar; and up to 8.2GW of more on-shore wind with 15% of demand being met by corporate Power Purchase Agreements (PPA's) by 2030.

As the proposed development will be carried out at the Carranstown facility which generates renewable energy, it is in alignment with the broad objectives of the Climate Action Plan with regard to the generation of much needed renewable energy in the State as the continued generation of renewable energy will continue to assist with the State's 2030 target.

Transport

The Plan also identifies that substantial investment in transport will be required in order to meet 2030 targets and commits to support the expansion of electric vehicle (EV) charging infrastructure in the State. It also makes reference to emerging technologies and those that may potentially assist with the decarbonisation policy objectives for the transport sector that will be undoubtedly required if the State is to meet its 2030 target.

In this regard, it specifically states that in the context of emerging technologies, there is a need to further investigate:

> *'decarbonisation options such as hydrogen vehicles, biomethane and AD substitutes for natural gas'.*

Accordingly, the element of the proposed development relating to the generation of hydrogen for connection to the natural gas distribution network and for use in mobile hydrogen transport applications is compatible with this aspect of the Climate Action Plan and the clear policy objective focused on further examining the use of this hydrogen in the decarbonisation of the transport sector going forward.

The generation of hydrogen at the Carranstown facility to be used in mobile hydrogen transport applications will therefore assist with the above 2030 target and the Plan's objective for the decarbonisation of the transport sector.

2.3.2.5 DTTAS National Policy Framework – Alternatives Fuels Infrastructure for Ireland 2017-2030

The recently published National Policy Framework on Alternative Fuels Infrastructure for Transport in Ireland: 2017 to 2030[46] by the Department of Transport, Tourism, and Sport (DTTAS) represents a first step in communicating

[46] Department of Transport, Tourism and Sport: National Policy Framework on Alternatives Fuels Infrastructure for Ireland 2017–2030 https://assets.gov.ie/26377/3075c29a37b84b10acae95da89d756ea.PDF

a long term vision for the Irish transport sector. It sets an ambitious target that by 2030 all new cars and vans sold in Ireland will be zero emissions (or zero emissions capable) with the use of fossil fuels vehicles rapidly receding.

The Framework outlines the main fuel options that could provide alternatives to oil in transport namely: electricity, hydrogen, biofuels, and natural gas, in the forms of compressed natural gas (CNG), liquefied natural gas (LNG), and liquefied petroleum gas (LPG).

Numerous and specific policy references to the use of hydrogen as a potential fuel option to replace the use of oil are included in the policy document including the following:

> "*Hydrogen is not expected to deliver mass-market uptake over this term as the costs of the refuelling infrastructure and associated vehicles are likely to remain prohibitive until the middle of the next decade. This Framework covers this 'interim' period (to 2030), which will secure the platform for achieving our longer-term objectives for 2050.*

Regarding the period post-2030, it states that:

> *'Post-2030, it is likely that hydrogen will continue its penetration across the entire fleet spectrum with a correlated decline in the predominance of vehicles being run exclusively on fossil fuels."*
>
> *"Electric and hydrogen fuelled technologies would appear to offer the most likely long term solution for a low emissions light duty vehicle (LDV) sector."*

The use of hydrogen in freight applications is also referred to due to its versatility:

> *"Hydrogen is considered versatile for use in freight and there are strong arguments for further investigation of this fuel despite no current market in Ireland. However, transition to a hydrogen based transport system would involve massive technological change and economic investment by consumers."*

In the context of refuelling stations, the policy is equally supportive, stating:

> *"According to the Directive 2014/94/EU, member states have discretion in relation to the consideration of targets for hydrogen refuelling points in the NPFs. Ireland has no immediate plans to establish a hydrogen refuelling network, as the cost of the infrastructure is massively disproportionate to current demand.*
>
> *However, Ireland is willing to support trials relating to hydrogen fuelled vehicles, and the feasibility of establishing a hydrogen refuelling network will be regularly assessed to take account of changes in technological development and market uptake."*

Finally, with regard to measures to be considered by the end of 2020, the policy provides that a broad feasibility study should be carried out and indicates that in order to support this innovative technology, incentives for the uptake of hydrogen should be given consideration in order to support investment.

Accordingly, this national study shall:

> *"Assess the feasibility, at a national strategic level, of establishing a hydrogen refuelling network based on technological development and market uptake. The feasibility study should consider what government supports, if any, and environmental assessments are required to promote hydrogen. The potential for deploying the use of hydrogen fuelled LDVs and trucks by 2025 should also be considered'*
>
> *'Consider incentives for uptake of hydrogen, including accelerated capital allowances, to support investment in refuelling infrastructure."*

Accordingly, the production of hydrogen as a constituent component of the proposed development to be carried out at the Carranstown facility and for use in mobile hydrogen transport applications is in clear alignment with this National Policy Framework on Alternatives Fuels Infrastructure for Ireland. This policy document clearly underlines the significant role that can be played by this innovative technology going forward and its ability to contribute to the decarbonisation of the transport sector as fossil fuel vehicles are significantly reduced in the medium to long term.

2.3.3 Regional Climate & Energy Policy

2.3.3.1 Meath Climate Action Strategy 2019 – 2024

Whilst the Meath County Development Plan and the Eastern Midlands Regional Spatial and Economic Strategy contain numerous policies focused on renewable sources of energy and climate mitigation as detailed in this EIAR Chapter at **Sections 2.4.2.1** and **2.4.3.5** above, at regional level, Meath County Council has adopted a dedicated regional Climate Action Strategy to apply to 2024[47].

In terms of targets, the Plan commits to reducing the County's emissions by 33% by 2020 and reducing CO_2 emissions of the County by at least 40% by 2030.

The Strategy focuses on a number of key areas, including;

- **Mobility:** Exploring polices to help the transition to a climate resilient low carbon society, with emphasis on transportation modes and types;
- **Resource management**: continuing to inspire communities to sustainably manage waste; and
- **Clean energy:** the shift to renewable sources will need to happen faster and will include a transition to clean energies in terms of how power is used in heating, buildings and transport.

In the context of the proposed development, there is clear alignment with the Strategy's policies. The treatment of additional hazardous waste and residues at an existing installation is compatible with the sustainable and proximate management of waste and the generation of hydrogen is similarly compatible with the

[47] Meath Climate Action Strategy 2019 -2024: https://www.meath.ie/system/files/media/file-uploads/2019-09/Meath%20CC%20Report_v4.pdf

Strategy's envisaged transition to a climate resilient economy through sustainable transportation modes as can be provided by hydrogen fueled transport applications.

With the foregoing comprehensive European, national and regional energy and climate change policy framework in mind, the continued generation of renewable energy at the existing site where the proposed development will be carried out is in alignment with the above policy objectives which aim to bring about a transition to a low carbon, climate resilient and environmentally sustainable economy.

With regard to the specific aspect of the proposed development concerning the generation of hydrogen, this aspect equally accords with the existing policy framework at national and regional level which underlines the pressing need to facilitate the development of enhanced electricity and gas supplies in order to support the State's transition to a low carbon economy.

In addition, the Climate Action 2019 and the regional Meath Climate Action Plan provide that there is a need for sustainable mobility at national and regional level. The Climate Action Plan specifically provides that decarbonisation options such as hydrogen vehicles are worthy of further investigation.

Furthermore, the production of hydrogen to be utilised in mobile hydrogen transport applications also accords with the developing policy landscape on decarbonising the transport sector in the State and more broadly with emerging policy whereby this versatile technology can play a beneficial role in assisting with the State's broader decarbonisation and climate mitigation objectives.

Such objectives are also supported from a planning policy context as discussed below. In addition to policy alignment with the existing energy and climate policy framework described above, the development of hydrogen is similarly compatible with numerous policy objectives outlined in the National Planning Framework, the National Development Plan, the Eastern Midlands Regional and Economic Strategy and the Meath County Development Plan as outlined in **Section 2.4** below.

These policy objectives are centred on diversifying energy production systems away from fossil fuels and seeks to facilitate enhanced electricity and gas supplies and the movement toward more sustainable forms of fuels in the transport sector.

2.4 Planning Policy

2.4.1 National Policy

The Department of Housing Planning and Local Government, on behalf of the Government, has prepared and published the National Planning Framework ('NPF') under Project Ireland 2040, the overarching policy and planning framework for the social, economic and cultural development to apply in Ireland to 2040.

The newly launched Project Ireland 2040 contains two parts:

- The National Planning Framework (NPF). The NPF along with the Regional Spatial and Economic Strategies (RSES) will determine how to achieve balanced regional development in Ireland, and
- A National Development Plan (NDP) which complements the Planning Framework detailing how €116 billion worth of investment will be spent over the next 10 years.

Finalisation of the NPF alongside the ten-year National Development Plan puts together one plan to guide strategic development and infrastructure investment and thus represents a coordinated policy between spatial development and capital investment at national level.

2.4.1.1 The National Planning Framework (NPF)

The NPF is a national document that will guide at a high-level strategic planning and development for the country over the next 20 years to ensure that as the population grows, this growth is sustainable in economic, social and environmental terms.

The NPF in conjunction with the NDP will also set the context for each of Ireland's three regional assemblies to develop their Regional Spatial and Economic Strategies (RSES's) taking account of and coordinating local authority County and City Development Plans in a manner that will ensure national, regional and local plans align. The formulation process of the Regional Strategies will enable the implementation of the NPF at regional and local levels.

Each of the Regional Assemblies, including the Eastern Midlands Regional Assembly, has now prepared and adopted a Regional Spatial and Economic Strategy (RSES) which will provide regional level strategic planning and economic policy in support of the implementation of the National Planning Framework.

The NPF was adopted on 29 May 2018 and supersedes the previous National Spatial Strategy[48].

It has also been given statutory effect in the Planning and Development (Amendment) Act 2018[49] which amends the principal Planning and Development Act 2000. This Act was signed into law on the 19 July 2018 and the provision which sets out the statutory underpinning for the recently adopted NPF has since been commenced by statutory instrument (section 18 and Schedule 3 pursuant to S.I. No. 436 of 2018)[50] and thus replaces the previous non-statutory National Spatial Strategy.

[48] As per Section 20 of the Planning and Development (Amendment) Act 2018 'the National Spatial Strategy, as amended having regard to the provisions of this Chapter including any document published by the Government which amends or replaces that Strategy shall be known as the National Planning Framework'. Schedule 3

[49] Whilst the Act was signed into law on the 19 July 2018, certain amendments to the Principal Act including the establishment and operation of the Office of the Planning Regulator shall be subject to a Ministerial Order prior to commencement: http://www.irishstatutebook.ie/eli/2018/act/16/enacted/en/html

[50] Planning and Development (Amendment) Act 2018 (Commencement) Order 2018: http://www.irishstatutebook.ie/eli/2018/si/436/made/en/pdf

Section 20A of the principal Panning Act as inserted by section 18 of the Planning and Development (Amendment) Act 2019 provides that the National Planning Framework is to replace the National Spatial Strategy, and this involves setting out a set of objectives to establish a broad National Plan for Government in relation to strategic planning and sustainable development of urban and rural areas.

The objectives of the NPF are set forth in section 18 of the Amendment Act.

These objectives are:

- To establish a broad national plan for the Government in relation to the strategic planning and sustainable development of urban and rural areas;
- To secure balanced regional development by maximising the potential of the regions, and support proper planning and sustainable development, and
- To secure the co-ordination of regional spatial and economic strategies and city and county development plans[51].

In terms of planning for waste treatment requirements to 2040, the NPF's National Strategic Outcome 9 – Sustainable Management of Water and other Environmental Resources[52], expressly provides that this will require:

- Waste to energy facilities which treat the residual waste that cannot be recycled in a sustainable way delivering benefits such as electricity and heat production.

This National Strategic Outcome goes on to provide that the effective management of waste will include the following elements:

- Regional Spatial and Economic Strategies and the core strategies of Metropolitan Area Strategic Plans (MASPs) and city and county development plans will support national and regional waste policy and efficient use of resources;
- District heating networks will be developed, where technically feasible and cost effective, to assist in meeting renewable heat targets and reduce Ireland's GHG emissions;
- Development of necessary and appropriate hazardous waste management facilities to avoid the need for treatment elsewhere; and
- Adequate capacity and systems to manage waste, including municipal and construction and demolition waste in an environmentally safe and sustainable manner and remediation of waste sites to mitigate appropriately the risk to environmental and human health.

[51] As per section 14 of the Amendment Act amending Section 12 of the Principal Act (Making of development plan) 'statutory obligations' includes, in relation to a local authority, the obligation to ensure that the development plan is consistent with (a) the national and regional development objectives specified in (i) the National Planning Framework; and (ii) the regional spatial and economic strategy and (b) specific planning policy requirements specified in guidelines under subsection (1) of section 28.
[52] National Planning Framework, National Strategic Outcome 9, Effective Waste Management at page 149: http://npf.ie/wp-content/uploads/Project-Ireland-2040-NPF.pdf

Thus, the proposed development may be regarded as being in alignment with the NPF as the same will carried out at the Carranstown facility which is designed to treat residual waste that cannot be recycled in a safe and environmentally sound manner and which also generates renewable electricity. The proposed development will accordingly contribute to the sustainable management of waste as provided for in the NPF's National Strategic Outcome 9 which focuses on the sustainable use of environmental resources.

This Strategic Outcome also provides for the development of necessary and appropriate hazardous waste management facilities to avoid the need for treatment elsewhere. As a constituent element of the proposed development will involve the additional treatment of hazardous waste and the development of infrastructure to treat hazardous aqueous waste in the form of a tank farm prior to treatment in in the furnace, thereby avoiding the need for export to Europe, this serves to further underscore the compatibility of the proposed development with the policy objectives of the NPF relating to the effective management of hazardous waste.

In terms of planning for the transition to a low carbon and climate resilient economy the NPF's National Strategic Outcome 8,[53] provides that this will require the diversification of existing energy production systems away from fossil fuels and towards green forms of energy together with the electrification of transport fleets and will require the progressive and strategic development of a different form of energy grid.

In this regard, the NPF's Strategic Outcome 4 'Sustainable Mobility[54]' specifically states that:

> *'In line with Ireland's Climate Change mitigation plan, we need to progressively electrify our mobility systems moving away from polluting and carbon intensive propulsion systems to new technologies such as electric vehicles and introduction of electric and hybrid traction systems for public transport fleets, such that by 2040 our cities and towns will enjoy a cleaner, quieter environment free of combustion engine driven transport systems'.*

In this regard, the National Development Plan makes provision for investment in public transport and sustainable mobility solutions to progressively put in place a more sustainable alternative.

Accordingly, the development of hydrogen as an element of the proposed development to be carried out at the Carranstown facility, accords with the NPF policy objectives and those of the NDP, as the same will contribute to the diversification of existing energy production systems and the envisaged transition to a low carbon and climate resilient economy and the transition away from the use of fossil fuels.

[53] National Planning Framework, National Strategic Outcome 8, Transition to a Low Carbon and Climate Resilient Economy page 149: http://npf.ie/wp-content/uploads/Project-Ireland-2040-NPF.pdf
[54] National Planning Framework, National Strategic Outcome 4, Sustainable Mobility at page 144: http://npf.ie/wp-content/uploads/Project-Ireland-2040-NPF.pdf

2.4.1.2 The National Development Plan 2018-2017

The National Development Plan (NDP) as a constituent part of Project Ireland 2040 was adopted by the Government on 29 May 2018[55]. The Plan sets out the investment priorities that will underpin the successful implementation of the new National Planning Framework that will guide national, regional and local planning and investment decisions in Ireland over the next two decades, to cater for an expected population increase of over 1 million people.

It may therefore be regarded as a companion document to the National Planning Framework and comprises a ten-year strategy for public capital investment of almost €116 Billion.

In the context of waste management and resource efficiency, National Strategic Outcome 9 as laid out in both the NPF and NDP underlines that Investment in waste management infrastructure is critical to Ireland's environmental and economic well-being for a growing population and to achieving circular economy and climate objectives.

The NDP goes on to provide that:

> *'capacity will continue to be built in waste facilities, including anaerobic digestion, hazardous waste treatment, plastics processing, recycling, waste to energy, and landfill and landfill remediation, to meet future waste objectives'.*

The Plan also notes that the infrastructure to deliver waste management policy has been, to date, largely delivered through private investment with some public-sector investment. Accordingly, the proposed development is in alignment with the newly adopted NDP, as the Plan underlines the need for waste treatment facilities to meet future waste objectives.

Given that the proposed development involves the treatment of additional hazardous and hazardous residues and the development of hazardous waste treatment infrastructure in the form of a tank farm, it may be regarded as being in alignment with the NDP which underlines that continued investment in waste management infrastructure including private sector investment is critical to Ireland's environmental and economic wellbeing as laid down in the NDP.

2.4.1.3 Planning Policy Statement

The Government published its first Planning Policy Statement in January 2015, which is intended to act as a general guiding document to the operation of the planning system and to outline the key values, principles and priorities that should underpin it. Through the non-statutory Planning Policy Statement 2015, the Government wishes:

> *"to reaffirm its strong belief in the value of a forward-looking, visionary and dynamic planning process, because it will ensure that the right development takes place in the right locations and at the right time and in*

[55] https://www.per.gov.ie/en/national-development-plan-2018-2027/

providing the social, economic and physical infrastructure necessary to meet the needs of our people in a way that protects the many qualities of our natural and built environment".

The policy statement sets out ten key principles, the following of which are relevant to the proposed development:

1. *Planning must be plan-led and evidence based so that at the appropriate level, from the National Spatial Strategy, Regional Spatial and Economic Strategies, City and County Development Plans and Local Area Plans, the Government, local authorities and local communities, work together to set out a cohesive vision for the future of our country.*
2. *Planning must proactively drive and support sustainable development, integrating consideration of its economic, social and environmental aspects at the earliest stage to deliver the homes, business and employment space, infrastructure and thriving urban and rural locations in an economically viable manner that will sustain recovery and our future prosperity.*
4. *Planning must support the transition to a low carbon future and adapt to a changing climate taking full account of flood risk and facilitating, as appropriate, the use of renewable resources, particularly the development of alternative indigenous energy resources.*
6. *Planning will encourage the most efficient and effective use of previously developed (brownfield) land over the use of greenfield land to ensure the most efficient use of existing infrastructure, enhancing and strengthening the continued vitality of existing communities through regeneration.*
9. *Planning will support the protection and enhancement of environmental quality in a manner consistent with the requirements of relevant national and European standards by guiding development towards optimal locations from the perspective of ensuring high standards of water and air quality, biodiversity and the minimisation of pollution risk.*

As detailed above, the overarching planning framework is now underpinned by the statutory National Planning Framework which incorporates the above key principles and as such, the proposed development may be regarded as a plan-led development as the planned expansion of the Carranstown facility aligns with the objectives of both the National Planning Framework, the National Development Plan and the Regional Spatial and Economic Strategy for the Eastern Midlands Region (as fully outlined below).

Moreover, the existing site is located in a heavily industrialised area which may be characterised as constituting a 'cluster' of heavy industry now established as a de facto land use and where the expansion of existing activities may be considered as appropriate when regard is had to the proper planning and sustainable development objectives of the County Development Plan.

In addition, it will support proper and sustainable development and support the transition to a low carbon economy through the provision of enhanced gas supplies in the form of hydrogen generation and accompanying contribution to stated climate mitigation policy objectives.

2.4.2 Regional Planning Policy

2.4.2.1 Regional Spatial & Economic Strategy (RSES) for the Eastern & Midlands Region 2019-2031

As detailed above, each of the Regional Assemblies are now required to adopt a Regional Spatial & Economic Strategy (RSES) to provide regional level strategic planning and economic policy in support of the implementation of the National Planning Framework.

The Eastern and Midlands Regional Assembly (EMRA) commenced the statutory process for the formulation of the Eastern & Midlands RSES in 2017 and the strategy was adopted on June 28th 2019[56]. The RSES replaces the Regional Planning Guidelines (RPGs) 2010 – 2022 which previously provided strategic policy and recommendations at a regional level.

The Planning and Development (Amendment) Act 2018 has now amended section 11 of the Principal Planning Act (draft development plans) to provide for the incorporation of the National Planning Framework and a regional and economic strategy into a development plan.

The new section 20B states that the objectives of the National Planning Framework are:

a) To establish a broad national plan for the Government in relation to the strategic planning and sustainable development of urban and rural areas;

b) To secure balanced regional development by maximising the potential of the regions, and support proper planning and sustainable development; and

c) To secure the co-ordination of regional spatial and economic strategies and city and county development plans.

In line with this statutory framework, the RSES sets out the manner in which this regional planning policy framework is aligned with the provisions of the NPF. The principal statutory purpose of the RSES is to support the implementation of Project Ireland 2040 - National Planning Framework and National Development Plan 2019-2027 by providing a long-term strategic planning and economic framework for the development of the Region.

In preparing the RSES, the Eastern & Midlands Regional Assembly carried out the required statutory policy making process which included formal public consultation periods, an Issues Paper, Draft RSES and Material Amendments stage and a parallel iterative process of carrying out a Strategic Environmental

[56] Eastern & Midland Regional Spatial and Economic Strategy 2019 – 2031: https://emra.ie/dubh/wp-content/uploads/2019/07/Regional-Spatial-and-Economic-Strategy-EMRA-optimised-for-web-viewing-DP.pdf

Assessment (SEA).[57]In accordance with section 31A of the principal Planning Act, on the 14th January 2020 the Minister for Housing Planning and Local Government, issued a Direction which may be cited as the Planning and Development (Eastern and Midlands Regional Assembly Regional Spatial and Economic Strategy 2019-2031) Direction 2019[58].

In this regard and pursuant to statutory requirements, the Eastern and Midlands Regional Assembly has been directed to and has amended section 5.6 and Table 8.2 of the RSES and accordingly, the RSES in its entirety may now be regarded as having come into effect.

The Eastern & Midlands (RSES) seeks to determine at a regional scale how best to achieve the shared goals set out in the National Strategic Outcomes (NSOs) of the NPF as detailed above.

To this end, the Strategy sets out 16 Regional Strategic Outcomes (RSOs), which are aligned with international, EU and national policy and which in turn set the framework for city and county development plans. Of the 16 RSO's laid out, RSO's 6, 7 and 9 are directly relevant to the proposed development to be carried out and is compatible with the same including:

Integrated Transport and Land Use (**RSO 6**):

> *Promote best use of Transport Infrastructure, existing and planned, and promote sustainable and active modes of travel to ensure the proper integration of transportation and land use planning. (NSO 2, 6, 8,9).*

Sustainable Management of Water, Waste and other Environmental Resources (**RSO 7**):

> *Conserve and enhance our water resources to ensure clean water supply, adequate waste water treatment and greater resource efficiency to realise the benefits of the circular economy. (NSO 8, 9).*

Support the Transition to Low Carbon and Clean Energy (**RSO 9**):

> *Pursue climate mitigation in line with global and national targets and harness the potential for a more distributed renewables-focused energy system to support the transition to a low carbon economy by 2050. (NSO 8, 9).*

In terms of sustainable waste management, the RSES in section 10.4 Waste Management and section 7 Environment & Climate supports a move towards achieving a circular economy which is essential if the Region is to make better use of resources and become more resource efficient.

[57] Eastern & Midlands RSES, outline of constituent stages: https://emra.ie/regional-strategies/rses/
[58] The Ministerial Direction concerned (1) adopted Ministerial Amendments incorporate into the RSES represented a significant departure from the advices contained in submissions made by the Minister at Draft and Material Amendment stages; and (2) The adopted material amendments are not consistent with the *Transport Strategy for the Greater Dublin Area 2016-2035,* as required under Section 23 (7) (c) of the Planning & Development Act 2000 (as amended) as additional rail, metro and luas infrastructure and wording have been included which fall outside the scope of the current Transport Strategy.

The RSES supports the transition to a circular economy as this will save resources, increase resource efficiency, and help to reduce carbon emissions. It also provides that the local authorities should achieve waste reduction, increases in material re-use and recycling, and reductions in waste going for disposal which can be achieved by:

> *'complying with the strategic objectives, targets and goals set out in the Eastern – Midlands Region Waste Management Plan 2015 – 2021 and any subsequent waste management plans and promoting a more circular economy that improves resource efficiency and innovation to keep products and materials at their highest use for as long as possible.*
>
> *Waste minimisation and waste avoidance can be encouraged through the reuse of materials and using fewer resources in the production and distribution of products.'*

The RSES seeks to provide infrastructure and services in a sustainable plan and infrastructure-led manner to ensure the sustainable management of water, waste and other environmental resources. It commits the Eastern Midlands Region to implementing the provisions of the Eastern Midlands Regional Waste Management Plan 2015-2021 and in this regard sets out specific Regional Policy Objectives (RPO's).

RPO 10.25[59] provides that account shall be taken of the requirements of the Eastern and Midlands Regional Waste Plan:

> *'Development Plans shall identity how waste will be reduced in line with the principles of the circular economy, facilitating the use of materials at their highest for as long as possible and how remaining quantams of waste will be managed and shall promote the inclusion in developments of adequate and easily accessible storage space that supports the separate collection of dry recyclables and food and shall take account of the requirements of the Eastern and Midlands Regional Waste Plan.*

The RSES also lays down numerous measures to support the transition to a low carbon, circular & climate resilient region. In this regard, the role that can be played by the bioeconomy is underlined and is stated to be consistent with Ireland's low carbon transition objective.

Favouring renewable biological resources over fossil fuel-based ones through the expansion of the bioeconomy, whilst keeping sustainability concerns to the fore, has the potential to contribute towards meeting Ireland's climate change targets. A sustainable bioeconomy which is the renewable segment of the circular economy can turn bio-waste, residues and discards into valuable resources and significantly cut food waste. It also has a wide reach and extends from farming and the agri-food businesses, marine based industries, forestry, waste management, energy suppliers, and pharma and bio-technology products.

[59] At page 114: https://emra.ie/dubh/wp-content/uploads/2019/07/Regional-Spatial-and-Economic-Strategy-EMRA-optimised-for-web-viewing-DP.pdf

The potential contribution that can be made by the bioeconomy from both an economic and environmental perspective is given effect and underlined in **RPO 7.34** which states:

> *'EMRA supports the National Policy Statement on the Bioeconomy (2018) and supports the exploration of opportunities in the circular resource-efficient economy including undertaking a bioeconomy feasibility study for the Region to identify the area of potential growth in the Region to inform investment in line with the national transition objectives to a low carbon climate resilient economy'.*

In addition to the role that the development of the bioeconomy can play in the Region, another key element of the Strategy is the need to monitor progress towards achieving a low carbon, circular and climate resilient society in all sectors including transport.

The RSES notes that overall growth in transport emissions projections contained in the Strategy is largely underpinned by growth in diesel fuel consumption which is expected to decline post 2025 with the acceleration of the deployment of electric vehicles during this period. It goes on to provide that policies are therefore needed to facilitate and encourage use of electric vehicles and to increase the potential for trips to be taken by sustainable modes of transport.

In this regard, Regional Policy Objective 7.30 provides:

> *'Within 1 year of the adoption of the RSES, the EMRA shall seek with other stakeholders to carry out an assessment of transport emissions in the Region to identify GHG forecasting and to analyse the emissions impacts of development in the Region.'*

The proposed development may therefore be regarded as complying with both National and Regional Policy Objectives, and provisions of the RSES for the Midlands and Eastern Region as regards the sustainable management of waste in line with the Regional Waste Plan and the transition to a circular economy.

In the context of a move towards a more energy-efficient society and an increase in renewable sources of energy, the RSES provides that there is a need to set a policy approach which will address an increased demand for indigenous resources and increased security of supply. A key element of the Strategy is the need to monitor progress towards achieving a low carbon, circular and climate resilient society.

It also underlines a need to diversify the Regions energy production systems away from fossil fuels and towards green energy such as wind, wave, solar and biomass, together with smart energy systems and the conversion of the built environment into both generator/consumer of energy and the electrification of transport fleets will require the progressive and strategic development of a different form of energy grid.

With regard to energy security, the Plan states that a secure and resilient supply of energy is critical to a well-functioning region, being relied upon for heating, cooling, and to fuel transport, power industry, and generate electricity. Given

projected increases in population and economic growth in the Region, the demand for energy is set to increase in the coming years.

In terms of the development of energy infrastructure, RPO 10.20[60] specifically supports the following categories of renewable and other energy infrastructure which will be required in the Region:

> *'Support and facilitate the development of enhanced electricity and gas supplies, and associated networks, to serve the existing and future needs of the Region and facilitate new transmission infrastructure projects that might be brought forward in the lifetime of this Strategy.*
>
> *Including the delivery of the necessary integration of transmission network requirements to facilitate linkages of renewable energy proposals to the electricity and gas transmission grid in a sustainable and timely manner subject to appropriate environmental assessment and the planning process'.*

The foregoing Regional Policy Objectives as underlined in the recently adopted Eastern Midlands RSES provide policy support for the proposed development as the same will be carried out at an existing recovery facility which treats municipal waste and recovers renewable energy from biomass thereby diverting such waste from landfill in line with circular economy principles. The additional treatment of hazardous waste also aligns with the transition to a circular economy as the same avoids such waste being exported and has an associated environmental benefit of reduced transport emissions.

Moreover, the element of the proposed development relating to the production of hydrogen is compatible with the Regions need to develop enhanced electricity and gas supplies to serve the future needs of the Region and the need to develop a different form of energy grid. Its use in mobile transport applications is also supportive of the Strategy's objective of moving toward more sustainable forms of fuels in the transport sector and the stated policy objective centred on diversifying the Regions energy production systems away from fossil fuels. It is also compatible with the National and Regional Policy Objectives with regard to improving sustainable mobility in the region.

Thus, the proposed development may be regarded as complying with National and Regional Policy Objectives and policy provisions of the RSES for the Midlands and Eastern Region.

Following the adoption of RSES for the Eastern & Midlands Region in May 2019 and those sections subject to the Ministerial Direction described above in January 2020, the County and City Development Plan review cycles now fall in to line with the Eastern & Midlands RSES in order to ensure that the vision of the National Planning Framework is carried through to the local planning level to ensure that a policy-oriented approach to planning policy is accomplished and properly managed spatial planning achieved.

[60] At page 226: https://emra.ie/dubh/wp-content/uploads/2019/07/Regional-Spatial-and-Economic-Strategy-EMRA-1.pdf

With this framework in mind, Meath County Council has now recommenced the review of the Draft Meath County Development Plan 2020 – 2026 which will replace the existing Meath County Development Plan (as set out below).

The draft Plan was on public display from 18 December until 6 March 2020 with public observations or submissions invited up to this date[61].

All observations or submissions received during the above time period will be taken into consideration before the making of the final updated Development Plan for County Meath.

All Local Planning Authorities are now required when adopting the relevant Development Plan to ensure that the Development Plan or Local Area Plan is consistent with the RSES in force for the respective administrative area.

2.4.2.2 Transport Strategy for the Greater Dublin Area 2016-2035

This transport strategy provides a framework for the planning and delivery of transport infrastructure and services in the Greater Dublin Area (GDA) to 2035.[62]

The purpose of the Strategy is:

> *"To contribute to the economic, social and cultural progress of the Greater Dublin Area by providing for the efficient, effective and sustainable movement of people and goods."*

This Strategy sets out the necessary transport provision, for the period up to 2035, to achieve the above objective for the region, and to deliver the objectives of existing national transport policy.

The overarching principle guiding the development of the Strategy was to meet existing and future demand with a sustainable, effective and efficient transport system.

The Strategy facilitates significant improvements in sustainable mobility and associated positive effects relating to energy usage, emissions to air (including greenhouse gas emissions and noise) and human health.

It should be noted that various policies related to climate charge, carbon emissions and associated action plans were under development at the time of preparation of this Strategy. This includes new legislation in the form of the Climate Action and Low Carbon Development Act 2015 as described in **Section 2.3.2.2** above.

This legislation provides for the preparation of a national mitigation plan and adaptation plan which establish energy related targets and actions to be adopted across the transport sector.

[61] Meath County Council, Draft Development Plan website, updates on the progress of the Plan to date: http://countydevelopmentplanreview.meath.ie/
[62] https://www.nationaltransport.ie/wp-content/uploads/2016/08/Transport_Strategy_for_the_Greater_Dublin_Area_2016-2035.pdf

The implementation of this Transport Strategy incorporates the relevant targets and actions arising from these and related policies in the area of transport energy. In this regard, the Climate Action Plan 2019 as described in **Section 2.3.2.4** above is also applicable as this lays down measures to enable Ireland to meet its EU targets to reduce its carbon emissions by 30 per cent by 2030. The Climate Action Plan 2019 also makes reference to emerging technologies including hydrogen vehicles and those that may potentially assist with the decarbonisation policy objectives for the transport sector that will be required if the State is to meet its 2030 target.

As such, the element of the proposed development relating to the generation of hydrogen for use in mobile hydrogen transport applications is compatible with the policy objectives of the Transport Strategy for the Greater Dublin Area which aims to facilitate improvements in sustainable mobility across the region.

This aspect of the proposed development is also in alignment with the Climate Action Plan and the clear policy objective focused on further examining the use of hydrogen in the decarbonisation of the transport sector going forward and which will be incorporated in the above Transport Strategy as appropriate, in line with this developing policy framework.

2.4.3 Local Planning Policy

With regard to the planning context as regards the existing facility and the proposed development to be carried out, it is necessary to set out the planning history of the site to date, the existing land use within the surrounding area and the principle policies of the Meath County Development Plan 2013-2019 against which the proposed development will be assessed.

2.4.3.1 Planning History Zoning and Existing Land Use

The existing Waste to Energy facility at Carranstown constitutes a strategic infrastructure development within the meaning of section 37A of the Planning and Development Act 2000, as amended (ref: PL17.PA0026) as granted by An Bord Pleanála in 2013.

In 2014, an alteration application was submitted under section 146B for an additional 15,000 tonnes (235,000 tonnes total capacity) of waste to energy capacity until 2019. By order dated 1st August 2014 (reference PL17.PM0004), An Bord Pleanála granted the proposed alteration of condition 3(1) of said Permission.

In 2015, a further application was submitted to An Bord Pleanála under section 146B to request an alteration to facilitate the pre-treatment process of air pollution control residues on site. The proposed alteration consisted of the extension of the existing ash residue loading bay and the construction of a pre-treatment process plant enclosure at the facility. By order dated 15th April 2016 (ref: PL17.PM0007) An Bord Pleanála granted the proposed alteration.

In 2017, an application was submitted to Meath County Council under section 42 of the Planning and Development Act 2000 as amended to extend the appropriate period as regards the planning permission (ref: PL 17.PA0026) approved by An Bord Pleanála on 4th February 2013 and subsequently amended (ref: PL 17.PM0004) on 1st August 2014 (ref: PL 17.PM0007) and on 15th April 2015. This application for extension was granted by Meath County Council on 2nd November 2017 (Ref: LB 17/1077).

Taking into account the above planning history of the site and the nature of the proposed development to be carried out, it is submitted that the nature of the above mentioned development proposal and extension of ancillary activities to be carried out at the site are consistent with the planning history of the site to date and may accordingly be granted pursuant to section 37A of the Planning and Development Act 2000, as amended.

2.4.3.2 Zoning and Existing Land Use

Whilst the Carranstown site is located outside of any designated zoned lands in the Meath County Development Plan, it is however located in an area that has been subject to a number of decisions to permit the clustering of large-scale industrial activities including the existing cement works in the area (Ref. PL17.PC0221) which includes an electricity substation and an existing limestone quarry (Ref.17.243795). In this regard, two related approvals relating to the Platin Cement works are in place including the installation of a flue dust portland cement silo at Kiln 3 (Ref. LB150375) and approval relating to the increase in the quantity of alternative fuels and further quantities of raw materials to be used in the manufacture of cement at the Platin facility (Ref. PL17.PA050).

In addition to the above, other recent planning applications within the surrounding area of the Carranstown site include an application for a proposed Air Insulated Switchgear (AIS) Transmission Substation at Platin, Duleek, County Meath on behalf of SSE Generation Ireland Limited (Ref. PL17.303678) which was granted planning in January 2020. A second related application was made, comprising of an 208MW (electricity output) Open Cycle Gas Turbine (OCGT) Power Plant (Peaker) as a separate planning application to Meath County Council (LB190031) was subsequently refused planning by An Bord Pleanála on appeal (Ref. PL17.305028) in December 2019.

In addition, a planning application (Ref. LB160898) was appealed to An Bord Pleanála (Ref. PL17.248146) for a solar farm on land within close proximity to Duleek. The solar farm was granted planning by An Bord Pleanála in March 2019 and the Bord ruled that the substation be part of separate planning application. The 110kV substation was subsequently granted planning permission in July 2019 pursuant to the strategic infrastructure provisions of the Planning and Development Act as amended (Ref. PL17.303568).

Accordingly, the Carranstown site at which the proposed development will be carried out is located in a heavily industrialised area which may be characterised as constituting a ‘cluster’ of heavy industry. In this regard, this designation, namely that the site is located in an unzoned area which has been developed as a de facto land use characterised by existing heavy industrial activities.

This designation may be justified when reference is had to the planning history of the site as detailed above and to An Bord Pleanála's findings regarding this now accepted designation as laid out in previous planning documentation pertaining to the site.

With regard to the original granting of permission for the waste to energy facility at Carranstown (Ref: PL17.126307) in 2003, the Inspector's Report stated that the development comprised approximately 20 hectares of *'heavy industrial facilities'* classed as constituting a *'significant heavy industrial land use'*. Moreover, An Bord Pleanála in granting permission had regard to the established nature and character of the surrounding area.

The Board cited under reason (e) that due to "*the location of the proposed development in an area where there is an established and permitted industrial land-use pattern*", the development was deemed to be acceptable.

In a subsequent application case (Ref. PL17.219721) for an expansion of the Carranstown facility in 2007, the established nature and character of the surrounding area to permit the development was again cited by the Board: Specifically, under reason (g) the Board stated: "*The location of the proposed development in an area characterised by established and permitted industrial land use pattern*…"

The Inspector's report also noted that:

> *"the vertical scale and overall massing of the cement plant together with its extensive footprint has resulted in it becoming a landmark structure in the wider Meath/Louth area with views of the plant visible even in long distance panoramic views from locations as far away as Skrene and the Hill of Tara some 18 to 20 kilometres distant to the south-west."*

Subsequent permissions/ changes to the existing facility also recognise that the permitted and established use of the land in question should be considered when assessing the proposed development as requested.

In this regard, the Inspectors Report (PA.0026) relating to amendments sought to the terms conditions of the permission specifically states that:

> *'The application site is not zoned land per se, therefore the permitted established use of the lands should be duly weighted as a consideration in assessing the principle of the now proposed development'.*
>
> *'Having regard to the now established use of the overall application site as a waste to energy facility utilising residual municipal and commercial waste, I consider there should be some presumption in favour of permitting those elements of the proposed development which are consistent with the reasonable expansion and modification of the existing operation'.*

In light of the foregoing, and notwithstanding the fact that the site is not zoned land per se, the existing site at which the proposed development will be carried out may be regarded as being consistent with the now long-established use of the lands namely an established and permitted industrial land use pattern.

Therefore, having regard to the now established use of the overall application site as a waste to energy facility there exists a presumption in favour of permitting the proposed development which is consistent with the reasonable expansion and modification of the existing operation of the Carranstown site.

This is further underlined by the other planning permissions in the area as referred to above which serve to underline the area as a 'cluster' of industrial related activities as supported by now long established planning precedent.

2.4.3.3 Meath Development Plan 2013-2019

The proposed development will be carried out at the existing Carranstown waste to energy facility which is located within the administrative area of Meath County Council and are therefore subject to the provisions of the Meath County Development Plan 2013-2019.

As referred to in **Section 2.4.2.2** above, Meath County Council has now published a draft Development Plan 2020 – 2026 which will replace the existing Meath County Development Plan.

The relevant period for public observations and submissions on the draft Plan has now closed with the same now being considered by Meath County Council.[63]For present purposes, the Meath Development Plan 2013-2019 is applicable, and it is the provisions of this Plan that must be assessed in the context of the proposed development.

In this regard, the proposed development may be said to be wholly consistent with the specific sectoral polices of the Plan, namely those relating to economic development, waste management, energy and employment.

Chapter 4 of the Plan outlines the Economic Development Strategy for the county and includes the following statements included within section 4.4.2 (Bio-Fuels and Renewable Energy) and also refers specifically to this 'cluster' of activity in the context of the Carranstown facility:

> "*The geographical location of Meath adjacent to the national Gateway and the proximity of the routes, through which significant energy transmission networks (electricity and gas) traverse, present key potential and synergies for future"*; and
>
> "*there is particular merit in examining significant landholdings associated with quarrying and extractive industries to develop energy related infrastructure projects. The existing example to support such a clustering argument is Carranstown and Caulstown, Duleek adjacent to Irish Cement operation at Platin – Indaver 70MW waste to energy facility and the permitted Scottish and Southern Energy Plc 60MW open cycle gas turbine power generation plant*."
>
> "*The accommodation of such energy related infrastructure projects which tend to absorb large areas of land and cannot be facilitated within*

[63] Meath County Council, Draft Development Plan website, updates on the progress of the Plan to date: http://countydevelopmentplanreview.meath.ie/

traditional industrial zonings in towns around the county is worthy of further detailed consideration."

In addition to the above statements, this Chapter of the Plan also includes a number of associated policies, a number of which are applicable to the proposed development and are identified as follows:

ED POL 6 recognises the contribution of rural employment to the continued and sustainable growth of the economy and to promote this continued growth by encouraging rural enterprise generally, especially those activities that are resource dependent, including energy production, extractive industry, small scale industry and tourism in a sustainable manner and at appropriate locations.

Similarly, Policy **ED POL 9** promotes innovative economic sectors and encourages clustering which positively exploits synergies between interconnected companies (as seen above in the context of the Carranstown facility where the facility is specifically stated to be an existing example supportive of a clustering arrangement.

ED POL 17 in the context of rural economic development aims to:

> *'To promote rural economic development by recognising the need to advance the long term sustainable social and environmental development of rural areas and encouraging economic diversification and facilitating growth of rural enterprises'.*

ED POL 18 recognises that energy production enterprises are more readily accommodated in rural areas:

> *'To recognise and develop the full potential of biomass for energy production and manufacturing including the export of green electricity to the national grid. The Development Plan acknowledges that such enterprises are more readily accommodated in rural areas due to the extent of lands required to ensure security of supply of raw materials and that proximity to the medium to high voltage national electricity transmission network for green electricity exportation is a key locational consideration for development proposers. All proposals for biomass energy production and manufacturing will require screening to determine if a full Appropriate Assessment of the likely significant effects on Natura 2000 sites, is required'.*

In this regard, ED POL 20 provides that any such proposal must not lead to unacceptable traffic impacts:

> *'To normally permit development proposals for the expansion of existing authorised industrial or business enterprises in the countryside where the resultant development does not negatively impact on the character and amenity of the surrounding area. In all instances, it should be demonstrated that the proposal would not generate traffic of a type and amount inappropriate for the standard of the access roads. This policy shall not apply to the National Road Network.'*

ED POL 21:

Such development proposals for industrial or business enterprises in the countryside will be considered where the following criteria are met:

i. *the proposed use has locational requirements that can more readily be accommodated in a rural location than an urban setting and this has been demonstrated to the satisfaction of Meath County Council;*

ii. *the development will enhance the strength of the local rural economy;*

iii. *the resultant development is of a size and scale which remains appropriate and which does not negatively impact on the character and amenity of the surrounding area;*

iv. *the proposal demonstrates that it has taken into account traffic, public health, environmental and amenity considerations:*

v. *the proposal is in accordance with the policies, requirements and guidance contained in this plan; and*

vi. *it is demonstrated to the satisfaction of Meath County Council that the proposal would not generate traffic of a type and amount inappropriate for the character of the access roads or would require improvements which would affect the character of these roads. This policy shall not apply to the National Road Network.*

With regard to potential traffic impacts, it is necessary to ascertain that the proposed development would not generate traffic of a type and amount inappropriate for the character of the access roads pursuant to ED POL 20 and 21 of the Development Plan. The effects of the construction and operational traffic associated with the proposed development are outlined in **Chapter 7** ***Traffic & Transportation*** of this EIAR.

Therefore, and taking into account the Development Plans economic development policies, the proposed development may be regarded as being in line with the established land use pattern within the area and which may now be regarded as a de facto and established use. In addition, the ongoing clustering of industrial activities in the area is fully compatible with the Development Plan's economic development policies which provide that expansion of existing industrial uses are permitted provided that the requirements of ED POL 20 and 21 are complied with. The Plan also recognises that such proposals and those for extensions of existing activities can be more readily accommodated in rural areas such as at the existing Carranstown site.

Consequently, the Plans policy in relation to economic development and the growth of employment in the County through support for objectives which promote economic, social and cultural development and in assisting the provision of employment opportunities for all will be advanced by the proposed development through the expansion of activities and the creation of employment opportunities at the construction and post-construction phases.

2.4.3.4 Meath Development Plan Sectoral Policies – Waste Management

Chapter 7 of the Plan provides that waste management policy is predicated on the EU Waste Hierarchy of prevention, preparing for reuse, recycling, energy recovery and sustainable disposal. Under the Waste Management legislation, the Development Plan of a Local Authority is statutorily deemed to include the objectives contained in the Waste Management Plan in force in relation to its functional area and this is given effect in the Meath County Development Plan as set out below.

The Plan sets out policy objectives **WM OBJ 1 - 20** with regard to the sustainable management of waste including:

- *To facilitate the provision of appropriate waste recovery and disposal facilities in accordance with the principles set out in the appropriate Waste Management Plan applicable from time to time made in accordance with the Waste Management Act 1996;*
- *To update the Sludge Management Plan for County Meath and seek to implement the recommendations of that plan;*
- *To promote the implementation of Waste Management Activities in accordance with 'Best Practice' and national policy;*
- *To facilitate the implementation of national legislation and national and regional waste management policy;*
- *To support the development of facilities to cater for commercial waste not provided for in the kerbside collection system such as WEEE, C&D type waste and hazardous materials in accordance with the requirements of the North East Waste Management Plan;*
- *To support developments necessary to manage food waste in accordance with the requirements of the Waste Management (Food Waste) Regulations and the Regional Waste Management Plan; and*
- *To seek to ensure in cooperation with relevant authorities that waste management facilities are appropriately managed and monitored according to best practice to maximise efficiencies and to protect human health and the natural environment.*

In terms of the Plans specific policies relating to the waste management, the Plan provides that all waste management facilities must adhere to the requirements of the Regional Waste Management Plan as set out in policies **WM POL 1 – 12** and including:

- *To adopt the provisions of the waste management hierarchy and implement policy in relation to the county's requirements under the current or any subsequent waste management plan. All prospective developments in the county will be expected to take account of the provisions of the regional waste management plan and adhere to the requirements of the Plan. Account shall also be taken of the proximity principle and the inter regional movement of*

waste as provided for under appropriate Minister Directives from time to time;

- *To encourage the development of waste infrastructure and associated developments in appropriate locations, as deemed necessary in accordance with the requirements of the Regional Waste Management Plan;*
- *To encourage the recycling of construction and demolition waste and the reuse of aggregate and other materials in future construction projects; and*
- *To ensure that hazardous waste is addressed through an integrated approach of prevention, collection, and recycling and encourage the development of industry led producer responsibility schemes for key waste streams.*

As the proposed development will be carried out at the existing Carranstown thermal recovery facility which generates renewable energy from residual waste treated, it may be regarded as being in alignment with the above waste and energy policy objectives. The Plan also incorporates the relevant Regional Waste Management plan and thus provides that all developments must accord with the proper application of the waste hierarchy and the proximity principle.

The treatment of additional hazardous waste at the facility accords with such policy objectives in real terms.

In addition, the proposed development also represents a significant contributor to the achievement of stated policy objectives regarding the sustainable management of waste and the provision of renewable energy and will therefore support the maintenance and growth of economic development in the local and wider region.

2.4.3.5 Meath Development Plan Sectoral Policies – Energy Infrastructure Policy

Chapter 8 of the Plan details a number of policies and objectives which seek to promote the development of sustainable energy infrastructure in the County and which are relevant to the proposals at hand. The Plan provides that:

> *'Meath is committed to pursuing sustainable energy policies in accordance with the White Paper, 'Towards a Sustainable Energy Future for Ireland 2007-2020'. The White Paper sets out the Government's ambitious target of 33% of electricity being produced from renewable sources by 2020. This goal was subsequently increased to 40%.*
>
> *As a Planning Authority, it is important to recognise the range of new and developing technologies that can contribute to minimising greenhouse gas emissions and to securing a greater proportion of our energy needs from renewable sources. This document sets out a number of strategic goals which together act as a road map for the delivery of a highly efficient, competitive energy sector characterised by innovation and driven by research and technology-led development."*

In terms of specific policies which seek to promote the development of sustainable energy infrastructure in the County, the Plan provides that:

EC POL 1: *'To facilitate energy infrastructure provision, including the development of renewable energy sources at suitable locations, so as to provide for the further physical and economic development of Meath';*

EC POL 2: *'To support international, national and county initiatives for limiting emissions of greenhouse gases through energy efficiency and the development of renewable energy sources which makes use of the natural resources of the county in an environmentally acceptable manner, where it is consistent with proper planning and sustainable development of the area';*

EC POL 3*: 'To encourage the production of energy from renewable sources, such as from biomass, waste material, solar, wave, hydro, geothermal and wind energy, subject to normal proper planning considerations, including in particular, the potential impact on areas of environmental or landscape sensitivity and Natura 2000 sites';*

EC POL 4*: 'To support the National Climate Change Strategy and, in general, to facilitate measures which seek to reduce emissions of greenhouse gases';*

EC POL 9*: 'To support the development of innovative energy efficient technologies such as district-heating and combined heat and power';*

EC POL 10*: 'To facilitate the provision of charging infrastructure for electric vehicles*';

EC POL 11*: 'To support and facilitate the development of enhanced electricity and gas supplies, and associated networks, to serve the existing and future needs of the County';*

EC POL 12*: To co-operate and liaise with statutory and other energy providers in relation to power generation in order to ensure adequate power capacity for the existing and future needs of the County'; and*

EC POL 24*: To ensure that development proposals, including quarrying and operations involving explosives, do not negatively impact on the gas network. Meath County Council may refer applications for developments in proximity to the natural gas network to Bord Gais Eireann and will have regard to their comments in the assessment of the application.'*

In terms of objectives relating to energy infrastructure, the Plan provides in **EC OBJ 1**:

'To ensure that all plans and projects associated with the generation or supply of energy or telecommunication networks will be subject to an Appropriate Assessment Screening and those plans or projects which could, either individually or in-combination with other plans and projects, have a significant effect on a Natura 2000 site (or sites) undergo a full Appropriate Assessment'.

As the proposed development will be carried out at the Carranstown facility which produces energy from renewable sources and is supportive of national climate change policy as provided for in the Plans policies as set out above, they may also be regarded as being consistent with the proper planning and sustainable development of the area.

The element of the proposed development relating to hydrogen production accords with the Plan's broad policy objectives centered on sustainable energy infrastructure in the County and also with EC POL11 regarding the need to facilitate the development of enhanced electricity and gas supplies, and associated networks, in order to ensure that the existing and future needs of the County are served.

In terms of protected sites and EC OBJ 1 as outlined above, an Appropriate Assessment Screening Report (AA) and Natura Impact Statement (NIS) have been prepared by Dixon-Brosnan on behalf of Indaver and submitted as part of this planning application to An Bord Pleanála. The conclusion of the NIS, in summary, is that the proposed development (with the implementation of mitigation measures) does not pose a risk of adversely affecting (either directly or indirectly) the integrity any European site, either alone or in combination with other plans or projects. Refer to the AA Screening Report and NIS for further details.

Furthermore, the production of hydrogen as a constituent aspect of the proposed development to be carried out is definitively provided for in policy EC POL 11, as the same will be capable of supporting the development of enhanced gas supplies and associated networks which are needed to serve the existing and future energy needs of the County.

In addition to the above mentioned waste, energy and economic development policies, it should be noted that other Plan policies may also be deemed to be relevant to the proposed development, including:

- To have regard to the "*Planning System and Flood Risk Management – Guidelines for Planning Authorities"* (DoEHLG/OPW, 2009)[64] through the use of the sequential approach and application of the Justification Tests for Development Management and Development Plans, during the period of this Plan (WS POL 29);
- Seek to preserve and maintain air and noise quality in the county (PC POL 1);
- To ensure the protection of the existing roads infrastructure while improving the capacity and safety of the road network to meet future demands (TRAN SP 14);
- To promote and facilitate the provision of the necessary transport infrastructure to fully accommodate existing and future population needs

[64] https://www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/Planning/FileDownLoad%2C21709%2Cen.pdf

and the demand for economic development in an environmentally sustainable manner (Plan Goal); and

- To provide for the efficient movement of goods and people in the interest of commerce and enterprise (TRAN SP 3).

With regard to the Planning System and Flood Risk Assessment Guidelines, a flood risk assessment has been carried out for the proposed development and is presented as **Appendix 15.1** ***Site Specific Flood Risk Assessment*** and the results of same are addressed in **Section 15.3.1.2** of **Chapter 15** ***Water*** of this EIAR. There is no flood risk as a result of the proposed development.

Secondly as regards PC POL 1 which seeks to preserve and maintain air and noise quality, Chapters 8 and 10 of this EIAR, assess both air and noise relating to the proposed development and the mitigation measures to be undertaken during both the construction and operational phases.

Thirdly, with regard to potential traffic impacts and the Plans policies regarding the same, it is necessary to ascertain that the proposed development would not generate traffic of a type and amount inappropriate for the character of the access roads pursuant to ED POL 20 and 21 of the Development Plan.

In this regard, the Duleek Written Statement[65] which forms part of the Meath County Development Plan also states that:

> *'The volume of through traffic in Duleek is recognised as a challenge for the Planning Authority to manage and alleviate over the life of the County Development Plan and beyond'.*

Accordingly, **Chapter 7** ***Traffic & Transportation*** of this EIAR has assessed the potential traffic impact of the proposed development during both the construction and operational phases.

In conclusion and from a planning policy perspective, it is considered that the proposed development accords fully with the applicable provisions of the Meath County Development Plan. The clustering of existing and permitted industrial and energy related infrastructure projects at the location site is specifically cited as an example which can be replicated at other locations in Meath and as such, the expansion of existing facilities fully accords with this principle. The history of the site to date also underlines that the expansion of existing activities may be regarded as being in accordance with this principle and contributing to the proper and sustainable development of the region.

The proposed development also adheres to the Plan's policies with regard to the management of waste as the same are predicated on the requirements of the Regional Waste Plan which underline the waste hierarchy and the principles of proximity and self-sufficiency which will be satisfied through the treatment of additional hazardous waste on the island thereby avoiding export.

[65] https://meathcountydevelopmentplan.files.wordpress.com/2011/01/duleek-written-statement.pdf

In addition, the proposed development is supported by the policy objectives of the Meath Development Plan 2014 in relation to waste management, as it is consistent with the provisions of Ireland's national waste policy and contributes towards the delivery of an effective and efficient waste management service in line with the Eastern Midlands Regional Waste Plan.

Furthermore, the proposed development is also compatible with the Plan's energy policies relating to the continued generation of renewable energy at the site and the contribution to diversity in energy generation through the production of hydrogen that can be provided by this element of the proposed development.

Finally, the proposed development is similarly consistent with the Plan's policy relating to economic development and those relating to rural economic development as the Plan specifically recognise the contribution of rural employment to the continued and sustainable growth of the regional economy as will be provided by the expansion of the existing Carranstown site. The proposed development represents a significant contributor to local employment within the region and is therefore supportive of the maintenance and growth of economic development in the local and wider region.

The proposed development may therefore be regarded as plan led and in alignment with the provisions of the National Planning Framework, the National Development Plan, the Eastern & Midlands Region Spatial and Economic Strategy and the Meath County Development Plan.

This planning policy framework is designed to ensure that future development will be evidence based and plan-led such that balanced and sustainable regional development can take place as can be provided by proposed development at hand.

2.5 Need for the Proposed Development

2.5.1 Introduction

This section outlines the need for the proposed development in order to deliver thermal recovery capacity to manage residual hazardous waste generated in the Eastern Midlands Region and at a national level. The quantities of this waste stream and residues which will require thermal treatment, are addressed. The proposed development will be designed to meet this need.

In addition, the other constituent elements of the proposed development and relating to the development of additional infrastructure at the existing facility including a tank farm for the storage and processing of aqueous liquid hazardous wastes, the development of a hydrogen generation unit and other ancillary infrastructure related to the facility's day to day operational activities and the rationale for the same will also be laid out below.

2.5.2 Hazardous Waste Thermal Treatment Capacity Required

2.5.2.1 Reported Hazardous Waste

The EPA National Waste Report 2012 (EPA 2014) provides information on waste generation and management in 2012 including hazardous waste statistics. However, these figures have since been updated in the EPA 2018 Progress Report on the implementation of the National Hazardous Waste Management Plan 2014 - 2020[66] and in 2018, when the EPA published updated hazardous waste data for that year[67].

These statistics demonstrate that Ireland currently does not have the facilities required to treat the full range of hazardous wastes it produces thereby once again underlining the need for greater self-sufficiency nationally in the management of Ireland's hazardous waste as previously underlined in the National Hazardous Waste Management Plan and the 2018 Progress Report on its implementation.

This data release now provides the most recent data available on hazardous waste management in Ireland at the time of writing. The data available on hazardous waste generation and treatment is set out in **Table 2.1** below.

Table 2.1 Hazardous Waste Management in 2018

	Proportion managed in 2018	**Tonnes managed 2018**	**Typical treatment type**
On-site treatment at integrated pollution prevention and control facilities	6%	30,127	Incineration, solvent recycling, landfill and use as fuel
Off-site treatment at authorised facilities in Ireland	18%	93,635	Authorised hazardous waste treatment facilities (e.g. autoclaving, physic-chemical treatment)
Export to disposal and recovery facilities abroad	76%	383,903	Thermal treatment as well as metal recovery, solvent recovery and landfill
Total	100%	507,665	

[66] http://www.epa.ie/pubs/reports/waste/haz/EPA_NationalHazardousWasteManagementPlan_web.pdf
[67] **EPA Waste Data Release, March 11th 2020, latest reference year 2018:** http://www.epa.ie/nationalwastestatistics/hazardous/

In 2018, 526,397 tonnes of hazardous waste was generated (as detailed in Figure 1 of the EPA statistics release). This was an increase of over 90,000 tonnes since 2017.

In 2018, 30,127 tonnes of hazardous waste was generated and treated on-site at 13 industrial facilities. Of this waste, 78% was disposed of and 22% was treated by recovery activities. 93,635 tonnes of hazardous waste was treated at Irish hazardous waste treatment facilities in 2018 (excluding soils).

In terms of contaminated soils, the total amount of contaminated soil generated in Ireland in 2018 was 93,645 tonnes, a slight decrease from 2017 (see Figure 4 of the EPA statistics). A total of 74,912 tonnes of contaminated soil was exported for treatment and the remainder was treated in Ireland. Contaminated soil accounted for 20% of Ireland's hazardous waste exports in 2018.

In terms of hazardous waste exports, almost 383,903 tonnes of hazardous waste (73% of all hazardous waste) was exported to EU Member States and beyond (as per Figure 3 of the statistics). Almost 75,000 tonnes of this was contaminated soils and a total of 308,991 tonnes was various waste types such as chemicals, medical waste, cement kiln dust and ash from municipal waste incinerators.

The figures which show an upward trajectory in terms of the amount of hazardous waste generated and exported from the State, underscore the need for further indigenous hazardous waste treatment capacity in order to progress towards self-sufficiency in the management of hazardous waste and to reverse this trend which has been increasing year on year.

As noted previously in this EIAR, in order to reduce the level of these exports and improve self-sufficiency, the EMRWMP supports the development of 50,000tpa thermal recovery capacity for hazardous waste nationally in **Objective E16.**

Furthermore, the increase in the generation of hazardous waste shown in the figures above and similarly, the increase in hazardous waste exported abroad for treatment in 2018 further underline the need for additional indigenous treatment capacity which is capable of contributing to the State's self-sufficiency requirements for the recovery of hazardous waste as set out in both the NHWMP, the 2018 Progress Report on its implementation and the 2018 Environmental Protection Agency hazardous waste statistics.

2.5.2.2 Unreported Hazardous Waste

The NHWMP notes that an amount of hazardous waste remains 'unreported'. That is, it is not recorded as having entered the formal waste management industry.

The NHWMP estimates that unreported waste was 26,024 tonnes of hazardous waste in 2011. The source of this waste is primarily small business, households and farms. One aim of the NHWMP 2014-2020 is to channel this waste into appropriate hazardous waste treatment facilities. Due to the small volumes arising per waste generator, this waste would need to be bulked up at a transfer station before being sent for disposal or recovery.

2.5.2.3 All Island Solution to Hazardous Waste

Economies of scale and the potentially erratic nature of hazardous waste markets mean that it is essential that all island markets are available. To achieve economies of scale the NHWMP suggests full opening of the Northern Ireland and Republic of Ireland waste markets, recognising that some companies are already operating on this basis. In relation to incineration capacity, the NHWMP 2014-2020 also states that,

'*… it is still possible for all-island incineration and physico-chemical treatment capacity to be planned for and taken into consideration by treatment operators'*.

The latest data on hazardous waste arising in Northern Ireland is provided in the Arc21 region Waste Management Plan (October 2014). This finds that in 2010/11 approximately 75,400 tonnes hazardous waste was generated in Northern Ireland of which approximately 6,050 tonnes were exported for energy recovery or incineration (R1, D10).

2.5.2.4 Capacity Required to Thermally Treat Hazardous Waste Streams

In summary the identified potential for thermal recovery of hazardous waste as outlined above is summarised in **Table 2.2.**

Table 2.2 Potential Capacity Required to Treat Hazardous Waste Streams

Source	Estimated tonnage	Notes
Hazardous waste	50,000 tonnes	Eastern Midlands Region Waste Management Plan
Unreported hazardous waste	26,024 tonnes	Potential additional hazardous waste requiring treatment (NHWMP aims to channel this waste into appropriate hazardous waste treatment facilities)
Northern Ireland hazardous waste	6,050 tonnes	Material exported for R1 / D10 from Northern Ireland
Total	82,074 tonnes	Recognising not all of the unreported / Northern Ireland waste will be available, this figure represents the potential capacity required in total from all sources

The Indaver Meath waste-to-energy facility operating licence W0167-03 currently permits the treatment of 10,000tpa suitable hazardous waste. In 2019, the Meath facility accepted 9,310 tonnes of suitable hazardous waste.

Therefore, there remains a gap of at least 40,000tpa thermal treatment capacity for hazardous waste treatment (based on the need identified in the EMRWMP and excluding unreported or Northern Ireland waste).

By combining the management of non-hazardous residual municipal solid waste (MSW), industrial waste, and suitable hazardous waste on a single grate incineration line it will be possible to deliver a "technically, economically and environmentally feasible" treatment facility that will contribute to the self-sufficiency objectives outlined in **Policy E16** of the EMRWMP.

The treatment of additional hazardous waste up to 25,000 tpa as a constituent part of the proposed development will also fulfil the policy objectives laid down in the National Hazardous Waste Management Pan which are centred on the need to strive for improved self-sufficiency in hazardous waste management in the State and to reduce hazardous waste export as reaffirmed in the 2018 Progress Report on its implementation.

2.5.3 Capacity required to treat boiler ash, flue gas cleaning residues and other residues

Another component of the proposed development also related to the treatment of residues produced at the facility includes the development of infrastructure to enable the treatment of an additional 30,000 tonnes per annum of boiler ash, flue gas cleaning residues and other similar residues requiring treatment (see **Section 4.5.6** of **Chapter 4** ***Description of the Proposed Development*** of this EIAR) in the existing pre-treatment facility at the Carranstown facility prior to recovery at an authorised facility in Northern Ireland.

This element of the proposed development will facilitate a coordinated approach to the management of boiler ash, flue gas cleaning residues and other similar residues from other thermal treatment facilities on the island as all such residues can then be combined in the existing pre-treatment plant at the Carranstown facility prior to export for recovery to a saltmine in Northern Ireland. Such a combined and integrated approach will in turn facility an economy of scale which could not be achieved at present as the vast majority of this material is currently exported to Europe.

Also, the expansion of recovery and treatment capacity for hazardous waste that does not need thermal treatment or landfill and which is referred to as physico-chemical treatment is specifically recognised as a key strategic objective of the National Hazardous Waste Management Plan, can be achieved through this aspect of the proposed development to be carried out at the existing Carranstown facility.

Additionally, the treatment of this material on an all-island basis prior to final recovery in Northern Ireland is supported by the principles of self-sufficiency and proximity and is further underpinned by the policy objectives of the National Hazardous Waste Management Plan and the Progress Report on the Implementation where a need to strive for improved self-sufficiency is underlined in clear terms.

As regards self-sufficing versus export of hazardous waste and the requirement to strive for increased self-sufficiency in hazardous waste management, the Plan notes that there are ancillary environmental benefits deriving from self-sufficiency as international transport of hazardous waste is minimised thereby eliminating

associated risks, and avoiding transport related greenhouse gas emissions, as outlined in **Section 9.4.2.1** of **Chapter 9** ***Climate*** of this EIAR.

Finally and of equal significance is the fact that this element of the proposed development is further strengthened by the requirements of the United Nations Basel Convention pursuant to which Ireland has committed to minimising the movement of waste for disposal, consistent with the principles of proximity, self-sufficiency and priority for recovery.

Thus, this aspect of the proposed development is fully supported by the above policy framework and will contribute to the need for increased self-sufficiency in the management of hazardous waste on an all island basis and will further provide associated environmental benefits of avoiding the transport of the hazardous waste via export which is in turn is compatible with wider climate mitigation policy positions and the envisaged transition to a low carbon economy as set out in the Climate Action Plan.

2.5.4 Capacity to Store Bottom Ash Residues produced by the Facility

The proposed development includes the development of a bottom ash storage building to permit the storage of up to 5,000 tonnes of bottom ash (see **Section 4.5.5** of **Chapter 4** ***Description of the Proposed Development*** of this EIAR) produced by the existing Carranstown facility. This element of the proposed development will provide the flexibility to export bottom ash to continental Europe for recovery in the event that a dedicated recycling facility for this material is not developed within the State within in the medium to long term.

In practical and contingency terms, this development is required as presently there is no limited landfill capacity for this material. Previously, this material was sent to local landfills where it was accepted for recovery as engineering material being used as daily cover for MSW intakes and for building roads and profiles within the landfill. However, due to more stringent enforcement of licence conditions by the EPA at local landfills, it has become more challenging to secure local solutions for the treatment of IBA and as such, an alternative as can be provided by this element of the proposed development is now required.

Whilst Indaver is keen to reuse this material in a sustainable and environmentally sound manner and in line with circular economy principles, notwithstanding the above reduction in landfill capacity in order that circular economy thinking can be applied going forward and greater use made of this material, the necessary policy landscape in the State has not yet evolved to the point where such reuse can be facilitated.

In the interim, a solution whereby this material can be reused in Europe and where this material is routinely processed for use as an aggregate in construction of roads or other large-scale projects provides the most practical available solution.

In this regard, it is hoped that the above mentioned review of the national policy document '*A Resource Opportunity'* and the Regional Waste Management Plans will give consideration to policy mechanisms aimed at reusing this material in a

sustainable and circular manner in the State thus avoiding the need for export to Europe.

Such indigenous reuse would not only promote sustainable waste management in keeping with the proper application of the waste hierarchy, it would also support the move towards a circular economy, where all wastes including those that are unavoidable such as residues are regarded as being capable of being transformed into useful and valuable resources.

The proposed introduction of a Circular Economy Action Plan as part of the upcoming waste policy review as detailed in the Climate Action Plan 2019 provides an ideal opportunity to introduce such much needed policy mechanisms as an element of the State's transition to a circular economy.

2.5.5 Need for a Hydrogen Generation Unit

The development of a hydrogen generation unit for connection to the gas distribution network and for mobile transport applications as a constituent part of the proposed development to be undertaken at the existing facility will improve the energy efficiency and sustainability of the facility in broad terms. In the national context, and considering the scale of the decarbonisation challenge, it has the potential to provide low-carbon solutions for both heat and transport.

A report from the Low Emission Vehicle (LEV) Taskforce, established to consider the range of measures and options available to Government to accelerate the take-up of low carbon technologies in the transport sector, includes a number of fiscal recommendations specifically aimed at incentivising hydrogen use across a range of modes of transport.

The hydrogen produced may be either distributed to the national gas grid or stored on site for transport application purposes. This element of the proposed development will also encapsulate the development of a storage tank for the hydrogen produced and to be utilised for re-fuelling of buses, HGV's or for bulk transport off-site to dedicated fuelling stations.

This aspect of the proposed development is thus compatible with wider national climate mitigation policy measures at national and regional level. In this regard, the Regional Spatial and Economic Strategy for the Eastern Midlands stated policy objective centred on diversifying the Regions energy production systems away from fossil fuels specifically states that the development of enhanced electricity and gas supplies, and associated networks will be needed to serve the existing and future needs of the Region. The Strategy also includes the policy objective of moving toward more sustainable forms of fuels in the transport sector.

In a similar vein, the Meath County Development Plan seeks to promote the development of sustainable energy infrastructure in the County and also supports and seeks to facilitate the development of enhanced electricity and gas supplies, and associated networks in order to serve the existing and future needs of the County.

Furthermore, the production of hydrogen to be utilised in mobile hydrogen transport applications also accords with the developing policy landscape on decarbonising the transport sector in the State and more broadly with emerging policy whereby this versatile technology can play a beneficial role in assisting with the State's broader decarbonisation and climate mitigation objectives.

This compatibility with policy objectives centered on shifting to more sustainable transport fuels is underlined in the Department of Transport, Tourism and Sport, National Policy Framework, Alternatives Fuels Infrastructure for Ireland 2017 – 2030, the Transport Strategy for the Greater Dublin Area 2016 – 2035 and the Climate Action Plan 2019.

Moreover, at EU level, the European Commission in its analysis on developing a carbon neutral Europe in its *2050 Long Term Strategy* (2019)[68] and where the Commission presented its strategic long-term vision for a prosperous, modern, competitive and climate-neutral economy by 2050 also indicates significant roles for bioenergy/renewable gas, CCS and hydrogen in the future energy mix.

The European Commission Green Deal also aims to accelerate the shift to sustainable and smart mobility in the EU and the forthcoming comprehensive European Strategy on Sustainable and Smart Mobility will also seek to enhance synergies with the circular economy transition and use of sustainable alternative transport fuels.

Whilst a more comprehensive policy framework and other supports will be required to facilitate the role out of this innovative technology at a widespread scale, Gas Networks Ireland (GNI) in its Vision 2050 *A Net Zero Carbon Gas Network for Ireland*[69] lays down in clear terms the contribution that can be played by hydrogen in the State's transition to a low carbon economy which will necessarily require a variety of low carbon and renewable energy options to be explored and integrated across every sector of society.

2.5.6 Need to rebuild the existing modular office building

This aspect of the proposed development involves the demolition of an existing single storey modular office building and re-building of same with a new single storey permanent office and staff welfare building.

This new building will have a slightly increased footprint in place of the old building. Additional car parking spaces are also proposed to accommodate the additional staff and also to facilitate visitors and contractors to the site.

Whilst this element of the proposed development is not significant in nature and involves only minimal changes, it is nonetheless in line with the existing planning permission as per planning permission (Ref. 17.PA0026) relating to the existing modular office building.

[68] https://ec.europa.eu/clima/policies/strategies/2050_en
[69] https://www.gasnetworks.ie/vision-2050/future-of-gas/GNI_Vision_2050_Report_Final.pdf

As such, this aspect of the proposed development is compatible with the existing zoning and planning permission relating to the Carranstown site and may thus be regarded as ancillary to the existing operation of the site.

2.6 Summary

EU and national waste policy requires waste to be managed in an economic, sustainable and environmentally sound manner. Implementing the EU waste hierarchy, waste should be managed as a resource and disposal should be the last resort. EU and national policies support the recovery of energy from residual waste.

As regards self-sufficiency in the management of hazardous waste, the National Hazardous Waste Plan, the progress report on its implementation and the Eastern Midlands Regional Waste Plan underline the need for hazardous waste treatment capacity and for enhanced self-sufficiency in the State.

Specifically, the requirement of the Eastern Midlands Plan includes 50,000 tonnes capacity for hazardous waste and an additional but unspecified capacity for industrial waste. There is currently a lack of hazardous waste treatment capacity in the State with a large quantity being exported to continental Europe. This is not a sustainable option in the long term as it infringes the proximity principle and does not meet the objective of moving towards self-sufficiency as underlined in numerous policy positions.

The treatment of additional hazardous waste, the development of a tank farm and the development of infrastructure required to treat residues which are hazardous in nature as elements of the proposed development to be carried out, may be regarded as being in alignment with both the National Hazardous Waste Management Plan 2014-2020 and the recent Progress Report on its implementation as the same will contribute to the achievement of self-sufficiency in the treatment of hazardous waste within the State and will minimise hazardous waste export as prioritised and underlined in both national policy documents. It is also compatible with stated policy positions regarding climate mitigation through an associated reduction in transport emissions.

From a national planning policy perspective, the National Planning Framework, specifically provides that planning for waste treatment requirements to 2040 will require waste to energy facilities which treat residual waste that cannot be recycled in a sustainable manner. It also provides that the development of necessary and appropriate hazardous waste management facilities to avoid the need for treatment elsewhere are required.

In this regard, the element of proposed development which will provide additional thermal treatment of hazardous waste is in alignment with this objective and the broader overarching aim of the Framework centred on achieving balanced regional and sustainable development. This need for hazardous waste infrastructure is also underlined in the National Development Plan.

From a local and regional planning perspective, the policies and objectives as set out in the Eastern and Midlands Spatial and Economic Strategy and the Meath

County Development Plan, are similarly supportive of the proposed development. The Regional Spatial and Economic Strategy seeks to provide infrastructure and services in a sustainable and infrastructure-led manner to ensure the sustainable management of water, waste and other environmental resources as can be provided by the proposed development in the context of the treatment of additional hazardous waste and associated infrastructure.

The proposed development is further supported by policy objective WS 7-1 of the Meath County Development Plan 2014-2020 in relation to Waste Management, as it is consistent with the provisions of Ireland's national waste policy and contributes towards the delivery of an effective and efficient waste management service in line with the requirements of the Eastern Midlands Region Waste Management Plan 2015. The proposed development is also consistent with the Development Plans objectives relating to economic development.

The proposed development is furthermore in alignment with the Meath County Development Plan as the developments comprise an infrastructural and industrial extension of activities at the existing Carranstown site and whilst this is in an unzoned area, it has been developed as a de facto land use industrial area characterised by existing heavy industrial activities as evidenced by a number of planning grants in the area and a now established land use pattern of development.

It is therefore submitted that the appropriate clustering of these activities is wholly compatible with good land use planning practice and policy, and is furthermore supported by strong planning precedent having regard to the pattern of development in the area and therefore the permitted established use of the lands should be duly weighted as a consideration in assessing the principle of the now proposed development.

As such, the proposed development and extension of the existing facility may be regarded as contributing to the proper planning and sustainable and economic development of the area while observing strict environmental standards as underpinned by the Development Plan's overarching objectives and which will be adhered to pursuant to licence conditions as laid down by the Environmental Protection Agency. The proposed development will accordingly enhance the overall economic performance of the region through employment creation and through the provision of ancillary benefits for the surrounding area.

The element of the proposed development relating to the development of hydrogen equally accords with the existing policy framework at national and regional level which underlines the pressing need to facilitate the development of enhanced electricity and gas supplies in order to support the State's transition to a low carbon economy. This need is underlined in the National Planning Framework, the National Development Plan, the Regional Spatial and Economic Strategy for the Eastern Midlands Region and in the Meath County Development Plan. The use of this versatile technology in mobile transport applications further accords with the developing policy landscape on sustainability mobility as underlined in European, national and regional policy positions.

In conclusion, the proposed development may be regarded as warranted from an EU and national perspective given that the same fulfils the objectives of self-sufficiency and proximity with regard to the treatment of hazardous waste and moreover with a number of policies pertaining to climate change mitigation.

In addition, it may also be justified from a national policy perspective as the same adheres to the requirements laid out in the Eastern Midlands Region Waste Management Plan, the National Hazardous Waste Plan and may be regarded as a plan-led development, consistent with regional, spatial and national planning policy including the statutory National Planning Framework.

It is therefore submitted that the above mentioned development proposal has been demonstrated to be fully in compliance with all plans, policies and objectives at a national, regional and local level, and may thus be regarded as being in accordance with the proper planning and sustainable development of the area.

2.7 References

Irish Legislation and Policy

Department of the Environment, Community and Local Government (2012) *A Resource Opportunity: Waste Management Policy in Ireland*, available online at www.environ.ie

Department of the Environment, Heritage and Local Government (2015) *Planning Policy Statement.* Available at: http://www.environ.ie/en/Publications/DevelopmentandHousing/Planning/FileDownLoad,39991,en.pdfF

Department of the Environment, Heritage and Local Government (2007) *National Climate Change Strategy 2007-2012*. Available at: http://www.seai.ie/Renewables/Renewable_Energy_Policy/2_NationalClimate_Change_Strategy_2007-2012.pdf

Department of the Environment, Heritage and Local Government (2002*) National Spatial Strategy 2002-2020.* Available at http://nss.ie/pdfs/Completea.pdf

Department of the Environment, Heritage and Local Government (2009) *The Planning System and Flood Risk Managemen*t. Available at: http://www.environ.ie/en/Publications/DevelopmentandHousing/Planning/

Department of Communications, Energy and Natural Resources (2010), *National Renewable Energy Action Plan: Submitted under Article 4 of Directive 2009/28/EC*, Available online at http://www.dcenr.gov.ie/

Department of Communications, Energy and Natural Resources (2015) White Paper, *Ireland's Transition to a Low Carbon Energy Future 2015-2030*, Available online at: https://www.dccae.gov.ie/en-

ie/energy/publications/Documents/2/Energy%20White%20Paper%20-%20Dec%202015.pdf

Department of Communications, Climate Action and Environment (2017) National Mitigation Plan Available at: https://www.dccae.gov.ie/en-ie/climate-action/publications/Documents/7/National%20Mitigation%20Plan%202017.pdf

Department of Communications, Energy and Natural Resources (2014) *Draft Bioenergy Action Plan.* Available online at http://www.dcenr.gov.ie/

Department of the Taoiseach, National Policy Statement on the Bioeconomy (2018) Available at: https://www.taoiseach.gov.ie/eng/News/Government_Press_Releases/Bioeconomy.pdf

Department of the Taoiseach, Project Ireland 2040, National Development Plan 2018-2027 and Project 2040 National Planning Framework (2018) Available at: https://www.gov.ie/en/campaigns/09022006-project-ireland-2040/

Department of Transport, Tourism, and Sport (2017) National Policy Framework on Alternative Fuels Infrastructure for Transport in Ireland: 2017 to 2030. Available at: https://assets.gov.ie/26377/3075c29a37b84b10acae95da89d756ea.PDF

Eastern Midlands Waste Region, Eastern Midlands Regional Waste Management Plan (2015 – 2021) Available at: http://emwr.ie/emwr-plan/

Eastern Midlands Waste Region, Eastern Midlands Regional Waste Management Plan, Strategic Environmental Assessment. Available at: http://emwr.ie/wp-content/uploads/2018/11/08-SEA-Statement.pdf

Eastern & Midlands Regional Assembly (2019 -2031) Regional Spatial and Economic Strategy. Available at: https://emra.ie/dubh/wp-content/uploads/2019/07/Regional-Spatial-and-Economic-Strategy-EMRA-optimised-for-web-viewing-DP.pdf

Environmental Protection Agency (2014) *National Waste Report 2012.* Available online at www.epa.ie

Environmental Protection Agency (2009*) Municipal Solid Waste - Pre-treatment & Residuals Management - An EPA Technical Guidance document.* Available online at www.epa.ie [as amended in 2011]

Environmental Protection Agency (2014) *National Municipal Waste Recovery Capacity.* Available here: http://www.epa.ie/pubs/reports/waste/stats/EPA%20MSW%20Cap%20Assessment%20V3%20April%202014_Final_web.pdf.

Environmental Protection Agency (2014) *National Hazardous Waste Management Plan 2014 – 2020 (NHWMP 2014-2020).* Available at: http://www.epa.ie/pubs/reports/waste/haz/nationalhazardouswastemanagementplan2014-2020.html#.Vlc6pk1yapo

Environmental Protection Agency (2013) *Proposed Revised National Hazardous Waste Management Plan.* Available at: http://www.epa.ie/pubs/reports/waste/haz/proposedrevisednationalhazardouswastemanagementplan.html#.VlSa-01yZD8

Environmental Protection Agency (2018) Progress Report on the Implementation of the National Hazardous Waste Management Plan 2014-2020. Available at: http://www.epa.ie/pubs/reports/waste/haz/EPA_NationalHazardousWasteManagementPlan_web.pdf

Environmental Protection Agency (2012) Research Report prepared by the National University of Galway on behalf of the Environmental Protection Agency, *Health and Water Quality Impacts Arising from Land Spreading of Biosolids.* Available at: http://www.epa.ie/pubs/reports/research/land/research200.html

Environmental Protection Agency (2017) *Waste Data Release, Municipal Waste Statistics for Ireland, Reference Year 2014* - 2016 Available at: http://www.epa.ie/nationalwastestatistics/municipal/

Environmental Protection Agency (2018) *Waste Data Release, Hazardous Waste Statistics for Ireland, Reference Year 2018* Available at http://www.epa.ie/nationalwastestatistics/hazardous/

Government of Ireland (2019) *Climate Action Plan 2019*. Available at: https://assets.gov.ie/10206/d042e174c1654c6ca14f39242fb07d22.pdf

Government of Ireland (2018) Low Emission Vehicle Taskforce Progress Report, Available at: https://www.dccae.gov.ie/enie/energy/publications/Documents/21/LEV%20Taskforce%20Phase1%20Progress%20Report.pdf

Meath County Council (2013) Meath County Development Plan 2013-2019, Available at: https://meathcountydevelopmentplan.files.wordpress.com/2011/01/meath-county-development-plan-2013-2019-consolidated-version-written-statement-december-2016.pdf

Meath County Council (2016) Duleek Written Statement, Available at: https://meathcountydevelopmentplan.files.wordpress.com/2011/01/duleek-written-statement.pdf

Meath County Council (2019) Meath Climate Action Strategy 2019-2024, Available at: https://www.meath.ie/system/files/media/file-uploads/2019-09/Meath%20CC%20Report_v4.pdf

Minister for Housing, Planning and Local Government (2020) Ministerial Direction pursuant to section 31A of the Planning and Development Act 2000 (as amended), relating to the EMRA Regional Spatial and Economic Strategy 2019-2031. Available at: https://emra.ie/draft-ministerial-direction-relation-rses/

SEAI (2015) Renewable Energy in Ireland 2013. Available online at http://www.seai.ie/Publications/Statistics_Publications/Renewable_Energy_in_Ireland/Renewable-Energy-in-Ireland-2013-Update.pdf

Climate Action and Low Carbon Development Act 2015 [S.I. No. No. 46 of 2015]

Planning and Development (Amendment) Act 2018 [Act No. 23 of 2018 and S.I. No. 23 of 2018]

Planning and Development (Amendment) Act 2018 (Commencement) Order 2018 (S.I. No. 436 of 2018)

Waste Management Act 1996 (as inserted by article 7 of the European Communities (Waste Directive) Regulations 2011 [S.I. No. 126 of 2011

European and International Legislation and Policy

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1992). Available at: http://www.basel.int/TheConvention/Overview/TextoftheConvention/tabid/1275/Default.aspx

Arc21 (2014) *Waste Management Plan for Northern Ireland*. Available online at: http://www.arc21.org.uk/download/1/arc21%20Waste%20Management%20Plan%20Oct%202014.pdf

Decision No 1386/2013/EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action Programme to 2020 'Living well, within the limits of our planet'. Available at: http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex:32013D1386

Decision No 1386/2013/EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action Programme to 2020 'Living well, within the limits of our planet'. Available at: http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex:32013D1386

Directive 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste

Directive 2018/850 of the European Parliament and of the Council of 30 May 2018 amending Directive 1999/31/EC on the landfill of waste

Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Renewable Energy Directive)

Proposal for a Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources (recast) COM/2016/0767 final - 2016/0382 (COD) Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52016PC0767

Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (Energy Efficiency Directive)

European Commission Directorate-General for the Environment (2014) *General Union environment action programme to 2020: Living well, within the limits of our planet.* Available online at http://bookshop.europa.eu/

European Commission (2015a) *Circular Economy Strategy Roadmap.* Available online at http://ec.europa.eu/

European Commission (2015b) *Communication from the Commission to the European Parliament, The Council, the European Economic and Social Committee of the Regions, Closing the loop - An EU action plan for the Circular Economy.* Available online at http://ec.europa.eu/

European Commission (2010) *Communication from the Commission Europe 2020: A strategy for smart, sustainable and inclusive growth.* Available online at http://eur-lex.europa.eu/ [ref COM (2010) 2020 final]

European Commission (2010*) Communication from the Commission to the European Parliament, The Council, the European Economic and Social Committee of the Regions, Energy 2020 A strategy for competitive, sustainable and secure energy*. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1409650806265&uri=CELEX:52010DC0639

European Commission (2011) *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Roadmap for a Resource Efficient Europe,* Available online at http://eur-lex.europa.eu/ [ref COM (2011) 571 final]

European Commission (2010) *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Energy 2020 A strategy for*

competitive, sustainable and secure energy. Available online at http://eur-lex.europa.eu/ [ref COM(2010)639]

European Commission (2014) *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A policy framework for climate and energy in the period from 2020 to 2030.* Available online at http://eur-lex.europa.eu/ [ref COM(2014) 15]

European Commission (2011) *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Energy Roadmap 2050.* Available online at http://eur-lex.europa.eu/ [ref COM/2011/885]

European Commission (2016) *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*: *The role of waste-to-energy in the circular economy Available online at:* http://ec.europa.eu/environment/waste/waste-to-energy.pdf

European Commission (2015c) *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions and the European Investment Bank: A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy,* available online at http://eur-lex.europa.eu/

European Commission (2015d) *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions and the European Investment Bank: State of the Energy Union 2015,* available online at http://eur-lex.europa.eu/

European Commission (2019) *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Green Deal* Available online at: https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf

European Commission (2020) *Circular Economy Action Plan for a cleaner and more competitive Europe,* Available online at: https://ec.europa.eu/environment/circular economy/pdf/new_circular_economy_action_plan.pdf

European Commission (2019) *2050 Long Term Strategy. Available at: https://ec.europa.eu/clima/policies/strategies/2050*

Eurostat (2013) Manual on Waste Statistics, a handbook for data collection on waste generation and treatment. Available online at:

https://ec.europa.eu/eurostat/documents/3859598/5926045/KS-RA-13-015-EN.PDF/055ad62c-347b-4315-9faa-0a1ebcb1313e

Intergovernmental Panel on Climate Change (2014) *Climate Change 2014: Impacts, Adaptation, and Vulnerability*. Available at: http://www.ipcc.ch/report/ar5/wg2/

Regulation (EC) No. 2150/2002 of the European Parliament and of the Council of 25 November 2002 on waste statistics. Available online at: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32002R2150

Ternes, Joss and Siegrist (2004) *Scrutinizing Pharmaceuticals and Personal Care Products in Wastewater Treatment, Environmental Science & Technology, Oct 15, 2004, pp 393A to 399A*

United Nations (UN), 2030 Agenda for Sustainable Development (2015) Sustainable Development Goals. Available at: https://sustainabledevelopment.un.org/sdgs