Indaver response to the Eastern & Midland Regional Assembly Draft Regional Spatial & Economic Strategy

Background

Indaver welcomes the opportunity to respond to the Eastern & Midland Regional Assembly Draft Regional Spatial & Economic Strategy (RSES).

Indaver provides waste treatment services to a significant municipal, commercial and industrial customer base and owns and operates a 17MW hybrid renewable waste-to-energy generator in Duleek, Co. Meath. This facility treats waste that cannot be prevented, reused or recycled.

Indaver is currently assessing the development of a number of new facilities and innovative technologies over the coming years, such as the:

- the potential development of hydrogen,
- facilitating the roll-out of renewable gas infrastructure, and
- the treatment of biosolids generated from wastewater[1].

Indaver takes the view that whilst waste reduction and elimination must be prioritised, unavoidable wastes that cannot be recycled in a sustainable manner, can be safely and effectively treated by the waste-to-energy (WtE) process. This form of sustainable waste technology has the added benefit of producing electricity and heat whilst ensuring that such unavoidable wastes are transformed into useful and valuable resources which can thereafter contribute to a circular bio-economy.

Given the broad nature of the Draft RSES, our comments are limited to the Environment, Connectivity, Infrastructure and All Island Cohesion sections.

[1] Treated sewage sludge, commonly referred to as 'biosolids', is the organic by-product of urban wastewater treatment

ENVIRONMENT

Section 7.8: Climate

Against the backdrop of Regional emissions stemming largely from energy supply, transport, built environment and industry, and keeping the priority policy areas of energy generation, the built environment, and transport from the adaptation perspective, WtE has an important role to play in greenhouse gas emissions reduction.

WtE plants, or incinerators with energy recovery, treat municipal waste (household, commercial and similar wastes) that cannot be reused or recycled. The waste hierarchy, which broadly reflects the preferred environmental option from a climate perspective, has been instrumental in providing the framework to shift from landfill. At the bottom of the hierarchy is disposal, which applies to landfill and incineration without energy recovery. It is typically considered the least favourable option for reducing greenhouse gas (GHG) emissions. This is because landfills recover very little material or energy value and produce the most GHG emissions from waste. WtE acts as a carbon sink and actually reduce the amount of GHG emissions in the atmosphere compared to landfill. Each tonne diverted from landfill to WtE is estimated to save 200kg of CO_2.[2] Furthermore, the metal recycling from the bottom ash of WtE plants saves CO_2 emissions.

The anaerobic digestion of biodegradable waste is at the next tier of the waste hierarchy and is considered as recycling.[3] The RSES can therefore be informative in terms of meeting EU mandated waste targets, climate obligations and renewable energy targets. In line with Government policy, the potential of anaerobic digestion not only generates energy, but also gives effect to national waste policy in terms of utilising waste as a resource.[4] Further details on the complementary alternative fuels infrastructure required to assist in climate change mitigation is outlined in the infrastructure section.

An alternative fuels infrastructure is required in order to facilitate the roll-out of agri-based anaerobic digesters (AD) to underpin renewable gas supply. It is envisaged that biogas will be purified to Natural Gas standard at AD sites, ready for collection. Gas Network Ireland has commenced the development of renewable gas collection logistics and Central Grid Injection (CGI) facilities. These will be located on the gas transmission network and will be designed to operate as gas Entry Points on the network for delivery to their gas customers in the heat, power and transport sectors.[5]

In terms of regional planning , and to address the challenges associated with climate change, the Draft Regional Spatial & Economic Strategy must take account of the need to develop hydrogen fuelling stations. Further detail on the facilitating the use of hydrogen in transport is outlined in Section 8.4.

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[2] http://www.esauk.org/application/files/7715/3589/6450/20180606_Energy_for_the_circular_economy_an_overview_of_EfW_in_the_UK.pdf

[3] http://ec.europa.eu/environment/waste/waste-to-energy.pdf

[4] https://www.dccae.gov.ie/documents/Energy%20White%20Paper%20-%20Dec%202015.pdf

5 https://www.gasnetworks.ie/corporate/company/our-commitment/environment/renewable-gas/

Support transition to a low carbon, circular & climate resilient Region

In order to enable the transition to a low carbon Region, the priority must be to minimise energy demand and waste, in tandem with the proposals to unlock the further potential of the bio-economy in Ireland.

WtE technologies, such as the incineration of municipal waste that cannot be prevented, reused or recycled, act as a key enabler of the bio-economy. Bioenergy, such as that generated by waste to energy technologies, produces a versatile source of energy that can be used for heating, transport and power generation. Unavoidable wastes (including residues remaining after treatment) that cannot be recycled in a sustainable manner, can be safely and effectively treated by the WtE process. This form of sustainable waste technology has the added benefit of producing electricity and heat whilst ensuring that such unavoidable wastes are transformed into useful and valuable resources which can thereafter contribute to a circular bio-economy.

In addition, the Region presents tangible opportunities for developing a network of AD plants to develop renewable gases such as biogas and biomethane. These can be produced and utilised in a variety of ways. AD plants can utilise a wide variety of feedstocks ranging from food wastes, to animal slurries to specifically grown energy crops such as grass silage, breaking them down to produce biogas, a mixture of methane (CH_4) and carbon dioxide (CO_2), this biogas can be combusted in boilers to produce heat, or in combined heat and power plant (typically) gas engines to provide both heat and electricity. Alternatively, the biogas can undergo further upgrading to remove the CO_2, to produce an almost pure stream of biomethane.[6]

Recommendation

Indaver commends the recommendation to assess transport emissions in the Region in order to enable the transition to a decarbonised transport fuel infrastructure network. The Region presents many opportunities in facilitating a circular resource-efficient bio-economy. The technologies noted above will have a pivotal role to play in this transition.

Decarbonising Electricity Generation

Much progress has been made in terms of decarbonising electricity generation. In terms of the key considerations in the short to medium term, attention must be focused on managing increasing levels of installed intermittent generation capacity such wind and solar. WtE technologies acts as a baseload type of generation, providing not only security of supply but grid stability benefits.

Indaver's facility in Duleek, Co. Meath has carved out a successful model of community engagement, community gain and making meaningful financial contributions to the community. Indaver makes a donation to a local Community Fund for every tonne that of waste is accepted into the Meath Waste-

[6] https://www.seai.ie/resources/publications/Assessment-of-Cost-and-Benefits-of-Biogas-and-Biomethane-in-Ireland.pdf

to-Energy facility. This equates to €250,000 per year. This fund is managed by a Community Liaison Committee which consists of members of the Carranstown Residents Committee, Slane Council, the Planning Authority and Indaver. To date funding has been made available to schools, drama & sports clubs, environmental & heritage organisations, festivals and art installations.

As is outlined in the draft RSES, district heating offers an efficient and cost-effective heating option. Waste to energy is ideal for the development of heating networks, whereby the heat produced from waste is delivered through a network of insulated underground pipes. It allows heat to be used from sources that would not normally be possible within individual dwellings or buildings. Furthermore, in comparison to individual boilers, district heating systems deliver heat in a more efficient manner with lower GHG emissions.

Section 8.4: Transport Investment Priorities

With regards to the development of a strategic road network, the accompanying infrastructure required to facilitate a decarbonised transport fleet must be taken into consideration. This includes the development of a hydrogen refuelling network.

Fuel cells can eliminate the pollution caused by burning fossil fuels; for hydrogen fuelled fuel cells, the only by-product at point of use is water. The strategy for deploying alternative fuels infrastructure must allow for a station siting strategy that facilitates hydrogen vehicle deployment. Learnings should be taken from the UK's strategy whereby driveability of hydrogen fuelled vehicles was facilitated by creating a viable network around major urban centres with stations situated near main roads.[7] This is with a view to groups of early stations being used to create hydrogen refuelling station clusters around major urban centres, with a minimum of two stations needed per cluster.

Recommendation

In order to facilitate a sustainable alternative fuels infrastructure, and its development in the Eastern Midlands Region, the long term protection for the eastern bypass and the Leinster Outer Orbital Route (as is outlined in the draft RSES) should continue.

[7] http://www.ukh2mobility.co.uk/

INFRASTRUCTURE

Section 10.2: Sustainable Management of Water – Sludge

The inclusion of Regional Policy Objective RPO 10.8 *EMRA shall support appropriate options for the extraction of energy and other resources from sewerage sludge in the Region* is very much welcomed as there is now an exigent need to develop alternative biosolids treatment facilities.[8] At present, approximately 80% of sludge produced in Irish wastewater treatment plants are applied each year as fertiliser to agricultural land. This practice of spreading biosolids on agricultural land as the primary means of municipal sludge management in Ireland is prohibited in many European countries due to environmental and health concerns.

This policy objective is also laid down in the National Wastewater Sludge Management Plan (NWSMP) and the National planning Framework (NPF) and serve to further underline the need for alternative treatment structures for the management of biosolids in the Eastern & Midland region in order to protect human health as an element of the proper, environmental and sustainable management of water.

Recommendation

An alternative to land spreading for biosolid management should be considered as matter of urgency as it is a resource which, if exploited fully, is capable of adding further value in terms of energy extraction whereby this unavoidable waste is transformed into a useful and valuable resource in line with circular economy principles.

Section 10.4: Waste Management

The implementation of the Waste Framework and Landfill Directives in Ireland have been instrumental in diverting waste away from landfill which is regarded as the least desirable and most environmentally detrimental tier of the waste hierarchy. Both national (as per the Waste Management Acts as amended) and EU legislation stipulate that waste must be handled in accordance with this hierarchy.

The WtE process which falls within the recovery tier of this hierarchy has supported the reduction of waste disposed to landfill thereby reducing environmentally detrimental impacts on land, air and groundwater quality.

Notwithstanding the significant strides that have been made with regard to the management of municipal waste in the State and the move towards self-sufficiency (a key policy objective of the Regional Waste Plans) there exists a continued reliance on the export of substantial volumes of waste. This must now be reconsidered as the viability of this option is undermined in the longer term

[8] Treated sewage sludge, commonly referred to as "biosolids", is the organic by-product of urban wastewater treatment. If appropriate treatment is applied, it may be reused as an agricultural fertiliser.

by mounting difficulties with securing outlets on continental Europe for waste exported from Ireland and given the inherent risks associated with the availability of this option.

Moreover, the need for additional recovery capacity for the treatment of residual municipal solid waste remains given the improved national economy outlook and a growing population.[9] It is estimated that the national population will increase to 5.1 million by 2031 and to just over 5.6 million by 2046. This will result in associated additional volumes of waste, an identified need for further progress towards self-sufficiency against a backdrop of continued dependency on the waste export market. Furthermore, there are ambitious environmental targets in the recently adopted Circular Economy Package.[10]

Given such projections and the fact that Ireland still generates more waste per capita than the Euro area average and is in the upper range in the Organisation for Economic Co-operation and Development (OECD),[11] in addition to established policy requirements at national and EU level, there is a recognised need for further thermal treatment capacity if Ireland is to comply with the principle of self-sufficiency, waste prevention and recycling targets as set out in EU legislation.

Therefore, the future required need may well be over and above the 300,000 tonnes recovery capacity provided for in the present Eastern Midland Regional Waste Management Plan (EWMP) and the exigent need for further dedicated thermal recovery capacity remains and will be required in the medium to long term given the projected increases in population and the ongoing need for contingency in the sector.

Recommendations

In order to meet the policy objective of self-sufficiency as laid down in the Eastern Region Waste Management Plan, the need for additional thermal recovery capacity to treat residual waste which cannot be recycled should be underlined in the adopted RSES.

A strategic coordinated approach to waste planning and management which is reflective of both all-island, national and regional requirements is required and should also be aligned with an all-island approach to waste planning as is detailed in Section 11.

[9] Central Statistics Office (CSO) publication 'Population and Labour Force Projections: 2016-2046'[9], it is estimated that the national population will increase to 5.1 million by 2031 and to just over 5.6 million by 2046.
[10] http://ec.europa.eu/environment/circular-economy/index_en.htm
[11] OECD (2018), Municipal waste (indicator). doi: 10.1787/89d5679a-en

ALL-ISLAND COHESION

Section 11: Management of Our Environment

In the context of ongoing North-South cooperation and in addition to the areas of collaboration listed in the Consultation document, the specific policy area regarding environmental protection is formally recognized in the Good Friday Agreement and in combination with enduring intergovernmental coordination, this overarching institutional framework has contributed to enhanced economic integration across the island whilst adhering to and applying key EU rules centered on sustainability and environmental protection.

With this framework in mind and given the significant projected population figures as detailed in Section 10.4 (Waste Management) and correspondent waste arisings, a coordinated and strategic approach to waste management on an all-island basis and alignment with key policy objectives is of fundamental importance if the island is to be in a position to manage such increased levels of waste in an environmentally sound manner.

An all-island waste strategy, informing the four regional waste plans (including a newly constituted single waste region in Northern Ireland, the Connaught-Ulster, the Eastern Midlands and the Southern regions) would facilitate a collaborative approach and would serve to ensure that all disposal and treatment options available on the island would be firstly exhausted before relying on export. Furthermore, it would also provide much needed contingency and flexibility in the management of waste should this be required on an all-island basis.

Thus, the development of an All-Ireland approach to waste management would help to ensure a joined up approach to strategic infrastructure and investment decisions that have a cross-border dimension and would also assist in the development of mutually beneficial policy to address common environmental challenges including those likely to be posed by the Brexit process.

Recommendation

The development of an all-island waste strategy which informs the four regional waste plans should be considered as an objective of the Eastern Midland RSES Economic Strategy in order to facilitate an all-island approach to sustainable waste management.

CONCUSIONS

The recommendations in this submission will assist in providing the necessary framework for developing essential waste infrastructure for a growing population. The additional benefits associated with the WtE, such as district heating and the advancement of alternative fuels infrastructure, have been highlighted above. Therefore asides from meeting the objectives of self-sufficiency and cost-effective waste infrastructure, it will assist in meeting Ireland's EU-mandated environmental and energy targets.

The Government has indicated greater alignment between local authority development plans and the National Planning Framework (NPF) process. Consistency between the RSES and development plans will also be required. The RSES, and indeed the complementary regional waste planning guidance, must provide for the necessary capabilities to respond to projected increases in population and provide for affordable means of contingency within the waste sector.