

EIAR FOR POWERSTOWN BIOENERGY

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Chapter 2: Planning, Policy and Need

Prepared for:

Greengate Biogas 001 Ltd.



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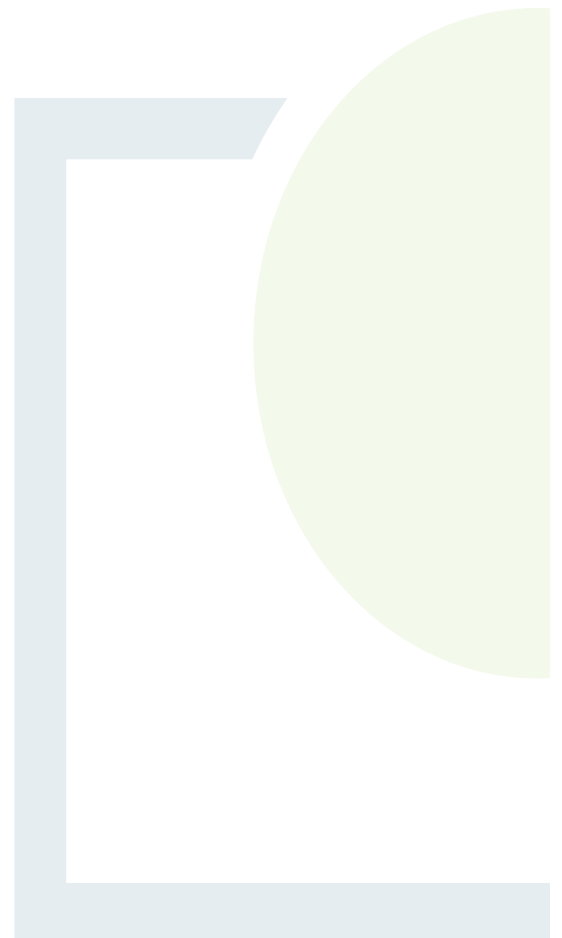


TABLE OF CONTENTS

2.	PLANNING, POLICY AND NEED	1
2.1	Introduction.....	1
2.1.1	Statement of Competency	1
2.2	Overview of the Planning and Policy Supports for Powerstown Biogas	1
2.2.1	International Policy	2
2.2.2	United Nations Framework Convention on Climate Change and the Paris Agreement..	2
2.2.3	Kyoto Protocol and the Doha Amendment to the Kyoto Protocol.....	3
2.3	Climate Sector	3
2.3.1	European Legislation and Policy	4
2.3.2	National Legislation and Policy	6
2.3.3	Regional Level	16
2.3.4	Local Policy	19
2.3.5	Other Relevant Studies & Guidance	24
2.4	Biomethane and Renewable Energy	27
2.4.1	European Legislation and Policy	27
2.4.2	National Legislation and Policy	30
2.4.3	Regional Level	35
2.4.4	Local Policy	35
2.4.5	Other Relevant Studies & Guidance	36
2.5	Biodiversity	36
2.6	Agricultural Emissions	37
2.6.1	European Legislation and Policy	37
2.6.2	National Legislation and Policy	37
2.7	Waste Management	41
2.7.1	European Legislation.....	41
2.7.2	National Policy	41
2.8	Need for the Proposed Development	42
2.8.1	Energy and Climate	42
2.8.2	Reduce Agricultural Sector Emissions.....	44
2.8.3	Replace Chemical Fertilisers	46
2.8.4	Bioeconomy and Circular Economy	46

2.8.5	Sustainable Development	46
2.8.6	Renewable Heat Obligation	46
2.9	Summary.....	47
2.10	Bibliography.....	48

LIST OF FIGURES

	<u>Page</u>
Figure 2-1: Biomethane Potential Manures	33
Figure 2-2: Average Feedstock Mix for Powerstown Biogas	45

LIST OF APPENDICES (VOLUME 3)

Appendix 2.1	National Waste Management Plan General Siting Criteria
Appendix 2.2	Development Management Standards for Carlow



2. PLANNING, POLICY AND NEED

2.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) evaluates the legislative and policy context at European, national, regional and local levels, supporting Powerstown Bioenergy and sets out the need for the proposed development.

Greengate Biogas 001 Limited ('Greengate Biogas') intends to apply for consent for a commercial anaerobic digestion (AD) plant at Powerstown, County Carlow referred to as the proposed development. The proposed development is designed to process up to 663,000 tonnes per annum (tpa) of agricultural residues including cattle and pig slurries, farmyard straw manures (e.g. cattle and horse) and poultry manure to produce 250 GWh biomethane, biogenic carbon dioxide (biogenic CO₂) and solid and liquid digestate (digestate). Greengate Biogas 001 Ltd. proposes to redevelop the site of a former quarry, located in Powerstown, Milford, Co. Carlow, as Powerstown Bioenergy. A proposed gas pipeline will connect Powerstown

Bioenergy into the Gas Network Ireland (GNI) grid at Clogrennan, Co. Carlow. The environmental impact assessment of the pipeline route has been included in the EIAR for Powerstown Biogas. GNI will be responsible for obtaining development consent for the pipeline as a Statutory Undertaker. The proposed development, the proposed planning boundary and the proposed gas pipeline route are shown in Chapter 3 of this EIAR. The proposed development will result in 181,000 t CO₂ savings from injection of biomehtane into the national grid.

2.1.1 Statement of Competency

This chapter was prepared by Rebecca Dunlea and Tanya Ruddy.

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CVs are included in Appendix 1.1 of Volume 3 of this EIAR.

2.2 Overview of the Planning and Policy Supports for Powerstown Biogas

The following sections of this chapter outline how international and European legally binding agreements to reduce the reliance on fossil fuels, are being facilitated through national energy and climate policy with a clear mandate to support the delivery of indigenously produced biomethane by 2030.



This section is organised by topic:

- International overarching policy
- Climate Sector
- Biomethane and Energy Sector
- Biodiversity
- Agricultural Emissions

2.2.1 International Policy

Ireland has been signatory to the United Nation's (UN) Sustainable Development Goals (SDGs) since 2015 when UN Member States adopted the 2030 Agenda for Sustainable Development (United Nations, 2015). The 2030 Agenda aims to deliver a more sustainable, prosperous, and peaceful future for the entire world, and sets out a framework for how to achieve this by 2030. The 2030 Agenda presents the 17 SDGs and their respective 169 sub-targets. Targets relevant to the proposed development include:

- SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all
- Target 7.1: By 2030, ensure universal access to affordable, reliable and modern energy services.
- Target 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix.
- Target 7.a: By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.
- SDG 13: Take urgent action to combat climate change and its impacts
- Target 13.2: Integrate climate change measures into national policies, strategies and planning.

2.2.2 United Nations Framework Convention on Climate Change and the Paris Agreement

The Conference of the Parties (COP) is the highest body of the UNFCCC and consists of environment ministers who have met annually since 1995 to assess progress in dealing with the issue of climate change. At the latest Conference of the Parties, COP 29, in 2024, an agreement was reached for developed nations to pay up to \$300 billion per year by 2035 to support climate efforts in developing countries. COP 29 also finalized rules for an international carbon market under the Paris Agreement but failed to agree on how to implement last year's pledge to transition away from fossil fuels, which was deferred to COP 30 in Brazil.

The International Panel on Climate Change (IPCC) has put forward its clear assessment that the window for action on climate change is rapidly closing, and that renewable energy sources such as wind will have to grow from 30% of global electricity at present, to 80% by 2050 if we are to limit global warming to well below 2°C above pre-industrial levels in accordance with previous COP agreements. COP 28 gave a renewed emphasis on climate action and the increasing viability and role of renewables such as wind energy to provide a more sustainable future. This was emphasised by a key outcome of COP28 which was the "Global Renewables and Energy Efficiency Pledge". Otherwise referred to as the 'COP28 Global Renewables And Energy Efficiency Pledge', this pledge aims to triple global renewable energy capacity by 2030, reaching at least 11,000 GW, with wind energy expected to be a major contributor to achieving this target.



In this regard, the Government enacted the Climate Action and Low Carbon Development Act 2015 and the Climate Action and Low Carbon Development (Amendment) Act 2021 which provides for the approval of plans by the Government in relation to climate change for the purpose of pursuing the transition to a low carbon, climate resilient and environmentally sustainable economy.

2.2.3 Kyoto Protocol and the Doha Amendment to the Kyoto Protocol

In 1997, the Kyoto Protocol set legally binding obligations for developed countries to reduce their greenhouse gas (GHG) emissions within two commitment periods. The Kyoto Protocol is an international treaty which extends the 1992 United Nations Framework Convention. The Kyoto Protocol came into effect in 2005, as a result of which, emissions reduction targets agreed by developed countries, including Ireland, are now binding.

Under the Kyoto Protocol, the EU agreed to achieve a significant reduction in total greenhouse gas emissions of 8% below 1990 levels in the period 2008 to 2012. Ireland's contribution to the EU commitment for the period 2008 – 2012 was to limit its greenhouse gas emissions to no more than 13% above 1990 levels.

In Doha, Qatar, on 8 December 2012, the Doha Amendment to the Kyoto Protocol was adopted. The amendment includes:

- New commitments for Annex I Parties to the Kyoto Protocol who agreed to take on commitments in a second commitment period from 1 January 2013 to 31 December 2020.
- A revised list of greenhouse gases ("GHG") to be reported on by Parties in the second commitment period.
- Amendments to several articles of the Kyoto Protocol which specifically referenced issues pertaining to the first commitment period and which needed to be updated for the second commitment period.

Net Zero by 2050: A Roadmap for the Global Energy Sector (International Energy Agency, 2021) cautions that renewables growth will still need to double to reach the Paris Agreement goal of achieving net-zero emissions by 2050. The International Renewable Energy Agency (IRENA), an intergovernmental organisation focusing on sustainable energy, in a report on the Nationally Determined Contributions relating to renewable energy also note that, even with the renewable energy pledges in the 2015 Paris agreement, the 1.5°C goal will still be exceeded before the end of the century.

Efficient use of fertilisers, adopting precision farming, a healthier herd and the deployment of AD technologies treating organic waste to produce renewable biogas are complimentary to the pursuit of International policy.

2.3 Climate Sector

The key climate legislative and policy documents with relevance to the proposed development are set out in this section. The need transition towards dealing with the effects of climate change is dealt with across European and national legislation and policy.



2.3.1 European Legislation and Policy

2.3.1.1 *EU 2030 Climate and Energy Framework (2014)*

In October 2014, EU leaders adopted the 2030 Climate and Energy Framework (European Council, 2014), which was subsequently updated in 2018 (European Council, 2018). The 2030 Climate and Energy Framework set out a framework for EU climate and energy policies in the 2021-2030 period. The 2030 Climate and Energy Framework set out three key targets for the year 2030:

- at least 40% cuts in greenhouse gas emissions (from 1990 levels)
- at least 32% share of renewable energy
- at least 32.5% improvement in energy efficiency

Furthermore, the European Commission (EC) in 2016 published its 2030 emissions targets break down for each Member State. While the overall EU target is a reduction of 40% on 1990 greenhouse gas (GHG) emissions by 2030, every Member State negotiates an individual target. Ireland will have to reduce its emissions by 30% relative to its 2005 emissions.

The proposed development will generate renewable energy and once operational will result in GHG savings of 181,000 t CO₂e on an annual basis.

2.3.1.2 *European Green Deal 2019*

The European Green Deal (European Commission, 2019c) is a roadmap with actions for making the EU's economy sustainable and making Europe the first climate neutral continent by 2050.

The European Green Deal package of policy initiatives aims to set the EU on the path to a green transition, with the ultimate goal of reaching climate neutrality by 2050. The package includes initiatives covering the climate, the environment, energy, transport, industry, agriculture, and sustainable finance.

The European Green Deal recognises that "renewable and low-carbon gases will play a central role in achieving climate neutrality. Biogas and biomethane, renewable and low carbon hydrogen and synthetic fuels (E-gas) have the potential to gradually replace fossil gases, including natural gas, and can be used as a fuel, an energy carrier or a feedstock to reduce emissions in hard-to-abate sectors, particularly in industry and transport" (European Commission, 2021a) . The proposed development will generate renewable biomethane replacing 250 GWh fossil fuel derived natural gas in the national grid per annum.

The EU Farm to Fork Strategy (European Commission, 2020c) is at the heart of the European Green Deal aiming to make food systems fair, healthy and environmentally friendly. The Strategy includes proposals to transform agriculture and position it as a key sector for climate mitigation and adaptation.



The proposed development is an anaerobic digestion facility for the production of renewable natural gas (RNG) and biogenic liquified carbon dioxide (Bio-CO₂) from agricultural residues referred to as feedstocks. The AD process will produce a raw biogas which will be conditioned, desulphurised, separated into biomethane and carbon dioxide for injection into the local gas network. The proposed development is a biomethane production facility that will be strongly aligned with a number of the headline Farm to Fork Strategy goals, including:

- To ensure food production has a neutral or positive environmental impact.
- Carbon Farming Initiative - implement green business models that sequester carbon.
- Promote a circular bio-based economy - the production of renewable energy and investing in anaerobic digesters for biogas production from agriculture waste and residues, such as manure.

2.3.1.3 EU Climate Law 2021

The EU Climate Law 2021 (European Union, 2021) makes it a legal objective for the EU to reach climate neutrality by 2050. The EU now has legally binding climate targets covering all key sectors of the economy.

The Climate Law set the intermediate target of reducing net GHG emissions by at least 55% by 2030, compared to 1990 levels. However, on 6th February 2024, the European Commission presented its updated assessment for a 2040 climate target for the EU.

The Commission recommended reducing the EU's net GHG emissions by 90% by 2040, relative to 1990. This 2040 climate target will reaffirm the EU's determination to tackle climate change, and will shape the EU's path after 2030, to ensure the EU reaches climate neutrality by 2050. The climate neutrality objective is at the heart of the European Green Deal (refer to Section 2.3.1.2) and is a legally binding objective set out in the European Climate Law.

Achieving climate neutrality by 2050 means achieving net zero GHG emissions for all EU countries, by cutting emissions, investing in green technologies and protecting the natural environment. The law aims to ensure that all EU policies contribute to this goal, and that all sectors of the economy and society play their part. The main objectives of the climate law include:

- A 90% Reduction in Net Greenhouse Gas Emissions: Achieve a 90% reduction in net greenhouse gas emissions by 2040 compared to 1990 levels.
- Implementation of Existing Laws: Fully implement existing EU laws to reduce emissions by at least 55% by 2030.
- Decarbonisation of Industry: Focus on decarbonising industry by leveraging strengths in wind power, hydropower, and electrolyzers, and investing in technologies for carbon capture, storage, and reuse.
- Boosting Domestic Manufacturing: Increase domestic manufacturing in growth sectors such as batteries, electric vehicles, heat pumps, and solar cells.
- Fairness and Solidarity: Ensure fairness and solidarity by supporting vulnerable citizens, regions, businesses, and workers through tools like the Social Climate Fund and Just Transition Fund.
- Open Dialogue: Maintain an open dialogue with all stakeholders, including farmers, businesses, social partners, and citizens.

The proposed development will support Ireland's legal obligation to reach climate neutrality by 2050, as the proposed development is an AD facility for the production of renewable natural gas, that will significantly contribute to reducing GHG emissions and decarbonising homes and businesses.



2.3.1.4 *Regulation (EU) 2018/1999 of the European Parliament and of the Council on the Governance of the Energy Union and Climate Action*

National Energy and Climate Plans are the framework within which EU Member States must notify their climate and energy objectives, targets, policies, and measures to the European Commission and were established under Regulation (EU) 2018/1999 of the European Parliament and of the Council on the Governance of the Energy Union and Climate Action. Member States are required to develop NECPs on a ten-year rolling basis. The aim of the plans is to outline our energy and climate policies in detail for the period from 2021 to 2030 and provide projections and ambitions towards 2050. Under the Regulation, Member States are also required to update their initial plans after 5 years. Refer to Section 2.4.2.11 for the first update of Irelands national energy and climate plan.

2.3.2 National Legislation and Policy

2.3.2.1 *Climate Action and Low Carbon Development (Amendment) Act 2021*

The Climate Action and Low Carbon Development (Amendment) Act was signed into law in 2021 following the EU Climate Law (Section 2.3.1.3).

The Climate Action and Low Carbon Development Act 2015 was amended by the Climate Action and Low Carbon Development (Amendment) Act 2021, and establishes a framework with clear, legally binding targets and commitments, and ensures the necessary structures and processes are embedded on a statutory basis to achieve our national, EU and international climate goals and obligations in the near and long-term.

As per the EU Climate Law, it commits Ireland by law to moving to a climate neutral economy by 2050. It includes an interim 51% reduction in GHG emissions by 2030 relative to a baseline of 2018. The Act makes provision for setting of sectoral emissions ceilings (include renewable energy). The 2021 Act includes the following key elements, such as:

- Places on a statutory basis a 'national climate objective', which commits Ireland to pursue and achieve no later than 2050, the transition to a climate resilient, biodiversity-rich, environmentally sustainable and climate-neutral economy.
- Embeds the process of carbon budgeting into law, Government is required to adopt a series of economy-wide five-year carbon budgets, including sectoral targets for each relevant sector, on a rolling 15-year basis, starting in 2021.
- Actions for each sector will be detailed in the Climate Action Plan, updated annually.
- A National Long Term Climate Action Strategy will be prepared every five years.

The proposed development aligns with the overall objective of the 2021 Act ('Climate Action and Low Carbon Development (Amendment) Act 2021') to achieve a transition to a climate neutral economy by 2050, and supports the targets set out in the Climate Action Plan's made under the Climate Action and Low Carbon Development (Amendment) Act 2021. See Section 2.3.2.4 Climate Action Plan.

2.3.2.2 *National Planning Framework First Revision (2025)*

The National Planning Framework (NPF) (Department of Housing, 2018) was first published in 2018 and is the long-term, 20-year strategy for strategic planning and sustainable development of urban and rural areas to 2040.



The National Planning Framework (NPF) First Revision (Government of Ireland, 2025c) was updated in 2025 to take account of changes that have occurred since it was first published and to build on the framework that is in place. The NPF, together with the National Development Plan 2021 (NDP) (refer to Section 2.3.2.3), combine to form Project Ireland 2040, the overarching planning and investment framework for the social, economic and cultural development of Ireland. The NPF forms the top tier of Ireland's planning policy hierarchy, setting the policy context at a national level for Regional Spatial and Economic Strategies, County and City Development Plans, and Local Area Plans.

The NPF sets out to "to create a single vision, a shared set of goals for every community across the country". These goals are expressed in the Framework as National Strategic Outcomes (NSOs). The NPF has 10 NSOs and ten strategic investment priorities (SIPs). The NSOs are:

- NSO 1 - Compact Growth
- NSO 2 - Enhanced Regional Accessibility
- NSO 3 - Strengthened Rural Economies and Communities
- NSO 4 - High-Quality International Connectivity
- NSO 5 - Sustainable Mobility
- NSO 6 - A Strong Economy, supported by Enterprise, Innovation and Skills
- NSO 7 - Enhanced Amenities and Heritage
- NSO 8 - Transition to a Carbon Neutral and Climate Resilient Society
- NSO 9 - Sustainable Management of Environmental Resources
- NSO 10 - Access to Quality Childcare, Education and Health Services

The national climate objective is to achieve a competitive, low-carbon, climate-resilient, biodiversity rich, and environmentally sustainable and carbon neutral economy by 2050.

The proposed development specifically aligns with the Chapters 5 (Planning for Diverse Rural Places) and 9 (Climate Transition and Our Environment) of the NPF.

The following National Policy Objectives (NPO) in Chapter 5 are relevant to the proposed development.

- **National Policy Objective 30** Facilitate the development of the rural economy, in a manner consistent with the national climate objective, through supporting a sustainable and economically efficient agricultural and food sector, together with forestry, fishing and aquaculture, energy and extractive industries, the bio-economy and diversification into alternative on-farm and off farm activities, while at the same time noting the importance of maintaining and protecting biodiversity and the natural landscape and built heritage which are vital to rural tourism.
- **National Policy Objective 32** Enhance the competitiveness of rural areas by supporting innovation in rural economic development and enterprise through the diversification of the rural economy into new sectors and services, including ICT-based industries and those addressing climate change and sustainability.



The role of rural areas in providing a sustainable renewable energy supply is recognised in the Revised NPF, which states: "In planning Ireland's future energy landscape and in transitioning to a net zero carbon economy, the ability to diversify and adapt to new energy technologies is essential. Innovative and novel renewable solutions have been delivered in rural areas over the last number of years, particularly from solar, and wind energy sources." Chapter 9 (Climate Transition and Our Environment) addresses Ireland's key environmental challenges through the following overarching aims:

- **Sustainable Land Management and Resource Efficiency** Adopting the principles of the circular economy to enable more sustainable planning and land use management of our natural resources and assets.
- **Climate Neutral Economy** Our need to accelerate action on climate change.
- **Renewable Energy** Our transition to a climate neutral energy future.
- **Managing Waste** Adequate capacity and systems to manage waste in an environmentally safe and sustainable manner.
- **Sustainable Water Management** Consideration of flood risk in planning and development management and treating urban wastewater.
- **Green and Blue Infrastructure Planning** Protecting and valuing our important and vulnerable habitats, landscapes, natural heritage and green spaces.
- **Water Quality** Recognising the links and addressing on-going challenges between development activity, water quality and our health.
- **Promoting Cleaner Air** Addressing air quality problems in urban and rural areas through better planning and design.
- **Noise Management** Incorporating consistent measures to avoid, mitigate and minimise or promote the pro-active management of noise.

Chapter 9 of the Revised NPF includes a section on 'Biomethane'. It outlines the opportunities from a climate transition perspective for the diversification of farming enterprises to include a focus on areas such as biomethane production and forestry, as follows:

"Biomethane is a carbon-neutral renewable gas made from farm and food waste through a process known as anaerobic digestion. A National Biomethane Strategy has been published which requires the development of policies with the primary objective of delivering the ambitious target of producing 5.7 TWh of indigenous biomethane by 2030.

It is estimated that over 80% of biomethane will be produced from grass silage and cattle slurry. This will require grass from 120,000ha (3% of total agricultural area) to produce the required feedstock. To meet Ireland's target of 5.7 TWh of biomethane by 2030, a large number of anaerobic digestion facilities will need to be developed, alongside the related infrastructure necessary to support these facilities".

Chapter 9 addresses the need for and importance of rural areas and energy production, along with the competitive advantage of rural activities associated with the bio-economy for the country:

"While rural and coastal areas have the potential for, and will develop, many types of economic activities, those activities associated with the bio-economy such as development of new bio-refining technologies represent a competitive advantage"...



"The transition to a more circular and bio-economy, where the value of bio-based products, materials and resources is maintained in the economy for as long as possible, and the generation of waste is minimised, will provide an essential contribution to our national goal of developing a sustainable, low-carbon, resource efficient and competitive economy"...

"Rural Areas and Energy Production Rural areas will continue to contribute to the energy needs of the country playing a strong role in securing a sustainable renewable energy supply. Renewable energy is being championed as a significant new source of jobs and rural growth in OECD countries".

The following NPOs in Chapter 9 are relevant to the proposed development.

- **National Policy Objective 67** Support the circular and bio economy including in particular through greater efficiency in land and materials management, promoting the sustainable re-use and refurbishment of existing buildings and structures, while conserving cultural and natural heritage, the greater use of renewable resources and by reducing the rate of land use change from urban sprawl and new development.
- **National Policy Objective 69** Reduce our carbon footprint by integrating climate action into the planning system in support of national targets for climate policy mitigation and adaptation objectives, as well as targets for greenhouse gas emissions reductions as expressed in the most recently adopted carbon budgets.
- **National Policy Objective 70** Promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a climate neutral economy by 2050.
- **National Policy Objective 73** Support the co-location of renewable technologies with other supporting technologies and complementary land uses, including agriculture, amenity, forestry and opportunities to enhance biodiversity and promote heritage assets, at appropriate locations which are determined based upon the best available scientific evidence in line with EU and national legislative frameworks.

The proposed development is critical in its contribution to Irelands National Strategic Objectives; NSO 8 - Transition to a Carbon Neutral and Climate Resilient Society, NSO 6 A Strong Economy, supported by Enterprise, Innovation and Skills and NSO 9 Sustainable Management of Environmental Resources. It is supportive of NSO 3 and NPOs 30 and 32 which target sustainable rural economic development. This project will support the agricultural sector supplying feedstock and receiving digestate to fertilise tillage lands whilst transitioning to a more circular bio-economy where the value of manure is extracted first to generate renewable gas and secondly to fertilise land. As per NPO 73 the proposed development is located on a brownfield quarry site. The proposed development directly contributes to national policy objective 70 for renewable energy to meet the national climate neutrality objective by 2050.

The NPF identifies the need to reduce emissions while ensuring that Ireland has a reliable and resilient energy supply, as expressed in Section 9.2:

"Ireland's national energy policy is focused on three pillars: (1) sustainability, (2) security of supply and (3) competitiveness. The Government recognise that Ireland must reduce greenhouse gas emissions from the energy sector by at least 80% by 2050, compared to 1990 levels, while at the same time ensuring security of supply of competitive energy sources to our citizens and businesses."



This section of the Revised NPF states that our transition to a zero carbon future requires a shift from predominantly fossil fuels to predominantly renewable energy sources and supports development and deployment of new technologies relating to areas such as bio energy. Section 9.2 states the following in relation to energy security:

“Gas will continue to play a key role to support the secure transition to an energy system, based on electrification and greatly increased renewables penetration. Ireland imports approximately three quarters of its gas from the UK and this is expected to increase as indigenous supply from the Corrib gas field declines. The technical analysis shows that the existing infrastructure and supply sources are largely able to meet Ireland’s gas demand requirements in the medium- to long-term. It also shows, however, that a disruption of gas supplies from the UK, for whatever reason, would have a very significant impact on Ireland’s economic and social well-being. The Package is supported by an Annex “Securing Ireland’s Gas Supplies” that sets out in more detail, the long-term approach to secure our gas security of supply. The report sets out a range of mitigation measures, including the need for additional capacity of indigenous renewable energy, but also energy imports, energy storage, fuel diversification, demand side response, and renewable gases.”

2.3.2.3 National Development Plan 2021 - 2030 and National Development Plan Review 2025

The National Development Plan (NDP) 2021-2030 (Government of Ireland , 2021) sets out the ten-year investment strategy which will drive Ireland’s long-term economic, environmental, and social progress. The National Development Plan Review 2025 (Government of Ireland, 2025d) is an update of the NDP and provides resources for the period 2026-2030 to achieve the ambitions within the NDP.

The proposed development directly aligns with the objectives of the NDP to strengthen rural economies and move towards an economy based on dependable and domestically sourced renewable energy.

The NDP recognises that climate action is one of the major drivers for public investment, along with maintenance, demographics and economic growth. The NDP outlines Ireland’s goal of an average 7% reduction per annum in greenhouse gas emissions from 2021 to 2030, and the important need for investment in areas such as energy efficiency.

There are ten National Strategic Outcomes (NSOs) in the NDP and as per the NDF (Section 2.3.2.2), which focus on growth, but with a particular emphasis on developing rural economies and communities and climate action. The following NSOs are of particular relevance to the proposed development:

NSO 3 - Strengthened Rural Economies and Communities

"The participation of rural communities in the strategic development envisaged under the NPF is imperative to successfully achieving the full potential of the strategic outcomes detailed in the National Development Plan. This applies both in terms of the traditional pillars of the rural economy, as well as those emerging from such developments as improved transport connectivity, national broadband delivery, climate action and rural economic development".



Under the 'Strategic Investment Priorities - Agriculture, Food and the Marine', the NDP recognises the role of the On-farm Capital Investment Scheme under Ireland's CAP Strategic Plan (CSP) 2023-2027, which seeks to provide support to farmers looking to invest in capital projects on their farms. The scheme aims to:

- "increase environmental efficiency in the agricultural sector through on farm investment and the adoption of new technologies,
- support young farmers in accessing finance so they are in a better position to invest in and develop their farm enterprise, and
- improve animal health and welfare and farm safety on farms."

The proposed development will support this objective of the NDP to support rural economies and communities through supply return schemes whereby farmers supply feedstock and receive digestate which benefits the land.

NSO 8 - Transition to a Climate-Neutral and Climate Resilient Society

The NDP outlines how the investment priorities must be delivered to meet the targets set out in the current and future Climate Action Plans, and to achieve climate objectives. The investment priorities represent a shift towards the achievement of a decarbonised society, and the Government's commitment to securing a carbon neutral future.

The NDP recognises the importance of the energy sector in achieving the effects of climate change and reducing greenhouse gas emissions by 51% by 2030 (as compared to 2018 levels) and working towards net-zero emissions by 2050.

Under the 'Strategic Investment Priorities – Research', the NDP recognises the role of "energy research funding to accelerate diversification away from fossil fuels to green energy, including wind, wave, solar, biomass, biofuels, biogas and hydrogen".

Under the 'Strategic Investment Priorities – Energy', the NDP recognises that "action in the energy sector will be critical to the achievement of Ireland's climate targets and the transformation to a high-renewable, net-zero emissions future".

Security of supply energy supply is vital for the proper functioning of society and our economy, and in particular how "the gas network will continue to have a vital role in providing energy to heat homes and businesses and to generate electricity. By 2030, over 90% of the natural gas used in Ireland will come from a single source in Scotland. Gas Networks Ireland (GNI) will continue to invest in the natural gas network to ensure it is operating safely, efficiently and providing security of supply".

The proposed development will support this objective of the NDP to transition to climate-neutral and climate resilient society and contributes towards security of energy supply.

The NDP Review 2025 notes that the policies and measures as set out in CAP25 for renewable energy amongst others will need significant capital investment. It states that public investment alone will not be sufficient to reach these goals, therefore private investment will be required to further climate action. The Plan states that significant Exchequer investment, combined with further household, State-Owned Enterprise (SOE), and crucially private sector investment in renewable energy projects such as the proposed development, are critical to delivering on these climate action objectives.



2.3.2.4 Climate Action Plan 2025

The Climate Action Plan 2025 ('CAP 25') (Government of Ireland, 2025b) is the third statutory annual update to Ireland's Climate Action Plan under the Climate Action and Low Carbon Development (Amendment) Act 2021.

CAP 25 sets out a roadmap of actions which will ultimately lead Ireland to meeting its climate objective of pursuing and achieving, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy.

CAP 25 builds upon last year's plan (CAP 24) by refining and updating the measures and actions required to deliver the carbon budgets and sectoral emissions ceilings and CAP 25 should be read in conjunction with CAP 24.

Section 15 of CAP 25 'Agriculture' outlines that agriculture accounted for 34.3% of Ireland's GHG emissions in 2023. While "agricultural emissions decreased by 4.6% or 1.0 MtCO₂eq. to 20.782 MtCO₂eq. in 2023, compared to 2022. This was primarily due to an 18% reduction in fertiliser nitrogen use, leading to -0.43 MtCO₂eq. fewer emissions from agricultural soils". However, CAP 25 states that the "total reduction from the 2018 baseline to 2023 is provisionally 2.9%, making the achievement of the 2030 target of a 25% reduction a significant challenge". CAP 25 notes that there is requirement for adaptation in the agricultural, seafood and forestry sectors.

As with CAP 24, CAP 25 outlines the importance of the National Biomethane Strategy (Government of Ireland, 2024c), supported by grant aid towards development, with the biomethane production target of 5.7 TWh by 2030.

CAP25 Annex of Actions contains new, high-impact actions for delivery in 2025, which include:

2025 Key Performance Indicator (KPI)	Measure
- Production of 1 TWh of Biomethane by 2025. - Construction of up to 20 AD Plants of scale. - Target up to 360,000 ha of tillage. - Target of up to 250kha of Organic Farming.	Expanding the indigenous biomethane sector through anaerobic digestion, increasing the area under tillage and increasing the level of Organic Farming.

In CAP 24, other key measures to deliver climate adaptation in agriculture include:

- AG/24/22 - Establish a Biomethane Coordination Group to oversee delivery of 5.7 TWh target and National Biomethane Strategy implementation activities.
- AG/24/21 - Identify and address the research and knowledge gaps around supply of feedstocks, the role of biobased products including digestate and the sequestration potential regarding biomethane production.
- AG/24/24 - Development of the obligation in the heat sector and incentivizing the production of indigenously produced Biomethane.
- RE/24/6 - Increase investment in research to support agricultural and land use diversification.

The urgency of reducing agricultural emissions is acknowledged in CAP25, which states that "Although agricultural emissions have decreased, they remain above the proposed pathway outlined in Climate Action Plan 2024."



The proposed development aligns with the actions and measures set out in both CAP 25 and CAP 24. These actions will ultimately lead Ireland to meeting its climate objective, by no later than the end of the 2050, to transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy. The proposed development will support the decarbonisation of the energy / heat sector through the production of indigenous biomethane that feeds into the existing network. The proposed development aligns with CAP 25 KPI's for the construction of up to 20 AD plants of scale. The proposed development will contribute directly to the achievement of this target of CAP25.

2.3.2.5 *Ireland's integrated National Energy and Climate Plan 2021-2030*

Ireland's National Energy and Climate Plan (NECP) 2021-2030 was submitted to the European Commission (EC) in December 2018. However, in accordance with the Governance of the Energy Union and Climate Action Regulation¹, an updated NECP 2021-2030 (Department of Environment, Climate and Communications, 2024) was submitted to the EC in July 2024. The NECP collates the policies, measures and actions related to energy and climate outlined in a range of government plans: such as the Climate Action Plan, the National Development Plan (NDP), and Project Ireland 2040, into one cohesive document. National Energy and Climate Plans are the framework within which EU Member States must notify their climate and energy objectives, targets, policies, and measures to the European Commission.

The NECP outlines a long-term vision for the agriculture, forest and land use sectors based on an approach to carbon neutrality in these sectors, while not compromising the capacity for sustainable food production. This means that agricultural emissions are balanced by reducing emissions of methane, nitrous oxide, and carbon dioxide in so far as the best available science allows, increasing carbon-sequestration through forests and land use and displacing fossil fuel and energy intensive materials with renewable sources.

The NECP outlines that "Ireland is recognised as having a large potential for Biomethane production due to its substantial agriculture sector. The development of an agri-centric indigenous Biomethane industry will directly contribute to meeting Ireland's decarbonisation targets and will deliver multiple cross sectoral benefits including a diversification opportunity for farmers and gas security and diversification of supply". The NECP (2024) notes that there are "currently only 2 operational biomethane facilities producing 75 GWh of biomethane per annum, which is equivalent to 0.001% of Ireland's current gas demand".

The Government has committed to deliver up to 5.7 TWh of indigenously produced biomethane by 2030, based on agricultural feedstocks, supported by the National Biomethane Strategy (refer to Section 2.4.2.4), and within that overall target, Ireland also has a biomethane heating target of up to 1.1 TWh by 2030. The Government target of 5.7 TWh represents approximately 10% of Ireland's current overall gas demand.

The NECP notes that the National Heat Study (refer to Section 2.3.5.2) undertaken in 2022, completed extensive analysis of bioenergy resources available in Ireland. The study identified biomethane as a competitive, cost-efficient, path to decarbonising sectors with a high thermal heat demand and estimated a production capacity of 5.1 TWh through the use of food waste resources and pig slurry, with farmers supplying agricultural feedstocks such as grass silage and animal slurries, therefore also acting as a farm diversification opportunity.

¹ Governance Regulation (Regulation (EU) 2018/1999 of the European Parliament and of the Council on the Governance of the Energy Union and Climate Action)



The proposed development aligns with the NECP to long-term vision to achieve carbon neutrality in agriculture, forest and land use sectors. The proposed development supports the NECP vision for Ireland's significant potential for biomethane production due to its substantial agriculture sector. The biomethane industry will directly contribute to meeting Ireland's decarbonisation targets and the scale of the proposed development will have a significant impact on this target.

2.3.2.6 *Programme for Government, Our Shared Future (2020)*

The Programme for Government, Our Shared Future (Government of Ireland, 2020) sets out the governments ambition to meet challenges facing communities such as the ongoing climate and biodiversity emergency and the COVID-19 pandemic.

The programme seeks to "repair the damage that has been inflicted by the pandemic and take the renewed spirit arising from these challenging times and translate it into action – action that can deliver a better quality of life for all, equality within society and a deeper sense of connection to the natural world around us, and each other". The programme covers a wide range of themes including climate change, economy, energy, and healthcare, identifying ambitious measures to achieve the mission of the programme.

The proposed development aligns with the stated Government ambition as it will assist in meeting the challenges facing communities such as the ongoing climate and biodiversity emergency.

2.3.2.7 *Ag Climatise – National Climate & Air Roadmap for the Agriculture Sector (2020)*

Ag Climatise A Roadmap towards Climate Neutrality (Department of Agriculture, Food and the Marine, 2020) is designed to help all stakeholders to work together to tackle climate change and air pollution, by clearly explaining what we need to do and when we need to do it.

By collectively pooling expertise and energy we can determine how best to do it, ensuring our sector remains at the forefront of globally sustainable food production systems.

The vision for the Ag Climatise Roadmap it that by 2050, "we want to develop a climate neutral food system compatible with the Paris temperature goals, whereby the climate impact of biogenic methane is reduced to zero and remaining agricultural emissions are balanced by removals through land use and a significant contribution to renewable energy".

There are six key tasks that we need to achieve to meet our climate and environmental objectives, while maintaining viable farm incomes in the sector.

1. Reduce GHG emissions from the sector. Methane from enteric fermentation and nitrous oxide are the dominant GHGs from agriculture.
2. Increase the carbon sequestration and carbon storage potential of Ireland's land use sector.
3. Reduce nutrient loss to the environment and contribute to improved water quality and biodiversity.
4. Meet our ammonia emissions reduction targets.
5. Build sustainable, resilient food production and land use management systems that meet these climate and environmental obligations, while also meeting market expectations.
6. Transparently communicate our progress; our Origin Green programme can play a key role in this regard.



The Ag Climatise Roadmap recognises that the agriculture sector has a key role to play in helping Ireland meet its energy efficiency and renewable energy targets. The medium- to long-term plan seeks to increase the provision of bioenergy feedstocks, including forest thinning, animal by-products (such as residues from meat processing and slurries), and energy crops (such as grass silage), which will be an important part in renewable energy for Ireland. The roadmap notes the key role the agriculture sector will play in the provision for bioenergy feedstocks for the production of biogas / biomethane as a key renewable energy resource for the decarbonisation of the transport and heat sectors in particular.

The proposed development aligns with the objective of the Ag Climatise Roadmap to meet renewable energy targets and decarbonisation of the agri and heating sectors.

2.3.2.8 National Adaptation Framework - Planning for a Climate Resilient Ireland (2024)

Ireland's second statutory National Adaptation Framework (NAF) - Planning for a Climate Resilient Ireland (Department of the Environment, Climate and Communications, 2024) was published in June 2024 and replaces the first iteration of the framework (2018). The first NAF was published in 2018 and was developed under the Climate Action and Low Carbon Development Act 2015.

The NAF sets out the national strategy to reduce Ireland's vulnerability to the impacts of climate change to both society and the economy.

The NAF outlines the role of key sectors including local government and is set out in the context of how Ireland can develop climate resilience, while ensuring better coordination of adaptation actions across Government Departments and Agencies.

Section 2.2 of the NAF states, that for climate resilience, Ireland must be open to innovative climate change solutions. It must have a reduced reliance on fossil fuel, will need to transition towards sustainable agricultural practices such as agroforestry and organic farming and Irish industries must embrace circular economy principles.

Section 2.6.4 of the NAF outlines the role of the private sector in enabling climate change adaptation. "Businesses and industries, being both affected by climate change impacts and contributors to adaptation efforts, are at the forefront of developing and implementing innovative technologies and practices to enhance climate resilience. This entails investments in renewable energy, sustainable agriculture, and efficient water management systems, for example. Collaborative partnerships with the government further empower businesses to fulfil their role in climate adaptation by pooling resources and expertise, innovation, fostering green job opportunities, and collectively working towards a more sustainable and resilient future for Ireland."

The proposed development aligns with the objectives outlined in NAF.

2.3.2.9 Ireland's Second National Implementation Plan for the Sustainable Development Goals 2022-2024

Ireland's Second National Implementation Plan for the Sustainable Development Goals 2022-2024 (Department of the Environment, Climate and Communications, 2022a) sets out five strategic objectives and 51 actions, with 119 measures to achieve the United Nations (UN) Sustainable Development Goals (SDGs).

- Strategic Objective 1: To embed the SDG framework into the work of Government Departments to achieve greater Policy Coherence for Sustainable Development.
- Strategic Objective 2: To integrate the SDGs into Local Authority, work to better support the localisation of the SDGs.
- Strategic Objective 3: Greater partnerships for the Goals.



- Strategic Objective 4: To further incorporate the principle of Leave No One Behind into Ireland's Agenda 2030 implementation and reporting mechanisms.
- Strategic Objective 5: Strong reporting mechanism.

The UN SDGs are discussed in Section 2.2.1. The Government of Ireland launched a public consultation on Ireland's Third National Implementation Plan for the Sustainable Development Goals in December 2025.

2.3.2.10 Ireland's Road Haulage Strategy 2022-2031

Ireland's Road Haulage Strategy 2022–2031 (Department of Transport, 2022), is a ten-year strategy dedicated to the haulage and road freight sector, which will focus on generating efficiencies, improving standards, securing jobs and helping the road freight sector move to a low-carbon future.

This Strategy sets out the measures to deliver key objectives, in particular for the decarbonisation of the haulage and road freight sector.

The Strategy recognises that biomethane has the potential to be used up to 100% in road transport vehicles. Ireland has set a trajectory to achieve a 20% mix of renewable fuel in biodiesel by 2030 via the Biofuels Obligation Scheme. There "may be potential for greater use of biofuels, biomethane and green hydrogen in heavy goods road transport if sustainability credentials can be properly verified and production capacity for these new fuels is increased".

As noted in the Climate Action Plan (CAP 24 and 25), the Government has committed to deliver up to 5.7 TWh of indigenously produced biomethane by 2030, from the agricultural sector which could have benefits for the production and supply of biomethane available for road transport.

2.3.3 Regional Level

2.3.3.1 Regional Spatial and Economic Strategy (RSES) for the Southern Region 2020-2032

The Regional Spatial and Economic Strategy for the Southern Region (RSES) provides the framework through which the NPF vision will be implemented in this region. Under the NPF, the South-West, South-East and Mid-West regions of Ireland are combined into the Southern region covering broadly one-third of the State.

The RSES for the Southern Region (Southern Regional Assembly, 2020) recognises the effects of climate change on the environment, economy and society of the Southern Region. The NPF's (refer to Section 2.3.2.2) sets the context for the RSES through 10 National Strategic Outcomes (NSOs). The following NSO and RSES strategies are of particular relevance for the proposed development.

NSO	RSES STRATEGY
NSO 3 Strengthened Rural Economies and Communities	No. 3 - Strengthening the role of and improving quality of life in the region's diverse rural areas and communities and valuing our rural region as dynamic, resilient and outward looking.
NSO 8 Transition to a Low Carbon and Climate Resilient Society	No. 8 - Safeguarding and enhancing our environment through sustainable development, prioritising action on climate change across the region, driving the transition to a low carbon and climate resilient society.



The RSES prioritises action on climate change across all strategic areas and in all economic sectors. Chapter 5 (Environment including responding to Climate Change) of the RSES supports the implementation of the Government's Climate Action Plan (2019), and the RSES identifies three priority areas for action to address climate change, these are:

- decarbonisation
- resource efficiency
- climate resilience

Chapter 5 of the RSES contains related objectives on renewable biogas / biomethane sector, renewable energy and decarbonisation.

The following Regional Policy Objectives (RPOs) are considered of particular relevance for the proposed development:

RPO 44 Common Agricultural Policy It is an objective to ensure the delivery of sustainable actions under the Rural Development Programme (RDP) 2014-20 and beyond in priority areas of innovation, bio-diversity restoration, water and soil management, renewable energy and waste management, carbon conservation and sequestration, diversification, job creation and ICT development in our rural areas.

RPO 45 Action Plan for Rural Development and Rural Development Programme 2014-2020 It is an objective to support the Action Plan for Rural Development led by the Department of Rural and Community Development and to support the development of priority areas under the Rural Development Programme 2014-20 led by the Department of Agriculture, Food and the Marine.

RPO 50 Diversification It is an objective to further develop a diverse base of smart economic specialisms across our rural Region, including innovation and diversification in agriculture (agri-Tech, food and beverage), the marine (ports, fisheries and the wider blue economy potential), forestry, peatlands, renewable energy, tourism (leverage the opportunities from the Wild Atlantic Way, Ireland's Ancient East and Ireland's Hidden Heartlands brands), social enterprise, circular economy, knowledge economy, global business services, fin-tech, specialised engineering, heritage, arts and culture, design and craft industries as dynamic drivers for our rural economy.

RPO 58 Bio-economy and Rural Areas It is an objective to facilitate the development of the rural economy through supporting a sustainable and economically efficient agricultural and food sector, together the bioeconomy, subject to required environmental assessment processes where necessary and balanced with while at the same time noting the importance of maintaining and protecting the natural landscape.

RPO 87 Low Carbon Energy Future The RSES is committed to the implementation of the Government's policy under Ireland's Transition to a Low Carbon Energy Future 2015-30 and Climate Action Plan 2019. It is an objective to promote change across business, public and residential sectors to achieve reduced GHG emissions in accordance with current and future national targets, improve energy efficiency and increase the use of renewable energy sources across the key sectors of electricity supply, heating, transport and agriculture.

RPO 89 Building Resilience to Climate Change It is an objective to support measures to build resilience to climate change throughout the Region to address impact reduction, adaptive capacity, awareness raising, providing for nature-based solutions and emergency planning.



RPO 90 Regional Decarbonisation It is an objective to develop a Regional Decarbonisation Plan to provide a framework for action on de-carbonisation across all sectors. The Plan shall include existing and future targets for each sector. Implementation mechanisms and monitoring structures shall be established with stakeholders, including the Climate Action Regional Offices, following the adoption of the RSES to identify the scope and role of the Plan, the requirements for SEA, AA and the timescale for its preparation.

RPO 94 Decarbonisation in the Agricultural Sector It is an objective to support initiatives that advance an approach to achieve carbon neutrality for agriculture and land-use that does not compromise sustainable food production through: i. Programmes including the Green Low Carbon Agri-environment Scheme (GLAS) and the Beef Data and Genomics Programme (BDGP) under Ireland's Rural Development Programme 2014-20; ii. Support for the Departments of Agriculture, Food and the Marine, and Communications Climate Action and Environment to enhance the competitiveness of the agriculture sector with an urgent need for mitigation to reduce GHGs as well as adaptation measures. The All-of-Ireland Government Plan on Climate Action and Ag-Climateise will guide action in this area.

RPO 95 Sustainable Renewable Energy Generation It is an objective to support implementation of the National Renewable Energy Action Plan (NREAP), and the Offshore Renewable Energy Plan and the implementation of mitigation measures outlined in their respective SEA and AA and leverage the Region as a leader and innovator in sustainable renewable energy generation.

RPO 96 Integrating Renewable Energy Sources It is an objective to support the sustainable development, maintenance and upgrading of electricity and gas network grid infrastructure to integrate renewable energy sources and ensure our national and regional energy system remains safe, secure and ready to meet increased demand as the regional economy grows.

RPO 98 Regional Renewable Energy Strategy It is an objective to support the development of a Regional Renewable Energy Strategy with relevant stakeholders.

RPO 100 Indigenous Renewable Energy Production and Grid Injection It is an objective to support the integration of indigenous renewable energy production and grid injection.

RPO 109 Bio-Energy Implementation Plan It is an objective to support the preparation of a Bio-energy Implementation Plan for the Southern Region in conjunction with the Local Authorities and the Regional Waste Management office; b. Proposals for Bio-energy development and infrastructure will need to be subject to robust site and/or route selection that includes consideration of likely significant effects on European Sites and subject to the outcome of the required appraisal, planning and environmental assessment processes.

RPO 219 New Energy Infrastructure It is an objective to support the sustainable reinforcement and provision of new energy infrastructure by infrastructure providers (subject to appropriate environmental assessment and the planning process) to ensure the energy needs of future population and economic expansion within designated growth areas and across the Region can be delivered in a sustainable and timely manner and that capacity is available at local and regional scale to meet future needs.



RPO 225 Gas Network Subject to appropriate environmental assessment and the planning process where required, it is an objective to: a. Promote renewable gas leading to carbon emission reduction in agriculture, industry, heating and transport as well as sustainable local employment opportunities. b. Support the transition of the gas network to a “carbon neutral” gas network by 2050, which will drive Ireland and the Region to becoming a low carbon society. c. Support investment in the sustainable development of agricultural biogas sector and regional gas supply projects which strengthen gas networks in the Region and assist integration of renewable gas to the grid network. d. Support investment in developing renewable gas and provision of CNG refuelling infrastructure which will help reduce the Green House Gas emissions in both the agriculture and transport sectors and support Carbon Capture and Storage initiatives, which has the potential to decarbonise power generation at scale e. Strengthen the gas network sustainably to service settlements and employment areas in the Region, support progress in developing the infrastructures to enable strategic energy projects in the Region.

The proposed development is fully compliant with the RSES for the Southern Region both through compliance with national strategic objectives and regional policy objectives. These objectives seek to establish a framework for sustainable rural development, climate action, renewables energy and decarbonisation. Powerstown Biogas will deliver under each of these headings.

2.3.4 Local Policy

2.3.4.1 *Carlow County Development Plan 2022-2028*

The Carlow County Development Plan (CDP) 2022-2028 (Carlow County Council, 2022a) was adopted by the Council's Elected Members in 2022. The Carlow CDP sets out the strategy for the proper planning and sustainable development of the County over the plan period from 2022 to 2028.

The proposed development location is not zoned within the CDP. Bioenergy Policy 1 of the CDP support proposals for commercial scale bioenergy plants on lands which are in industrial / enterprise use or zoned for such purposes, including on brownfield sites or sites in or adjacent to these areas. Bioenergy Policy 3 of the CDP is to ensure that any commercial bioenergy plant is close to the point of demand and is served by public roads with sufficient capacity and Bioenergy Policy 4 supports the development of biogas (Anaerobic Digestion) plants at suitable locations. Chapter 16 of the CDP includes the development management standards for the county. The proposed development was designed to comply with the development management standards. Table 2.1 in Appendix 2.2 of Volume 3 of this EIAR has a list of the relevant development standards and proposed development compliance.

The vision for County Carlow "is to champion quality of life through local employment provision, high quality development, healthy placemaking and transformational regeneration, to grow and attract a diverse innovative economy, to support the transition from a linear to a circular economy, and to a low carbon climate resilient environment, to embrace inclusiveness and enhance our natural and built environment for future generations".

The following strategic objectives as outlined in Chapter 1 (Introduction and Context) of the CDP, are relevant to the proposed development:

S 08 Transition to a low carbon and climate resilient County by developing renewable indigenous energy resources, by supporting energy efficiency, reducing energy demand, and by implementing mitigation and adaptation responses to climate change.

CS 013 Promote County Carlow in its transition to a low-carbon and climate resilient County through the promotion of sustainable energy, sustainable settlement patterns, and reduced travel demand in accordance with the RSES, NPF and Climate Action Plan.



The following economic development policies and objectives, as outlined in Chapter 4 (Enterprise and Employment) if the CDP, are relevant to the proposed development:

ED P3 To drive economic growth arising from opportunities within Carlow due to its strategic location and connectivity on the Waterford- Kilkenny-Carlow-Dublin M9 / Rail Network, to support collaboration and growth with strategic settlements on this route and to support the creation of Inter Urban Networks of Collaboration and Growth in accordance with RPO 30.

ED O2 Facilitate innovation in rural economic development and enterprise through diversification of the rural economy together with the promotion of sustainable rural towns and villages as the key component of delivering viable rural communities. (Refer also to Chapter 14 Rural Development of the CDP).

The proposed development is located in Powerstown County Carlow which is outside the town and small village zonings. There are a number supporting strategic aims within the CDP in respect of the proposed location, these include:

- To maximise the economic assets of the County including third level institutes, the strategic location of Carlow proximate to Dublin and Waterford Cities along the M9 and the Midlands along the N80, attractive towns and villages and rural areas.
- To ensure the benefits of economic growth and prosperity are spread to all parts of the County.
- To maintain and promote a broad economic and employment base in the County.
- To encourage, support and facilitate enterprise development at appropriate locations throughout the County.
- To promote the rural economy by facilitating diversification, supporting appropriate rural resource-based industries with a viable and vibrant network of smaller towns and villages.
- The bio-economy has the potential to provide opportunities for rural areas to modernise and strengthen their industrial base, creating new value chains and greener, more cost-effective industrial processes, while recognising the need to protect biodiversity and the environment.

Chapter 6 (Infrastructure and Environmental Management) of the CDP aims to "to seek the provision and maintenance of high-quality infrastructure networks and environmental services in conjunction with other statutory bodies which seeks to complement the overall economic and settlement strategy, contributes to sustainable development and is in accordance with the proper planning and sustainable development of the area".

Section 6.7.2 ('Gas') acknowledges the gas transmission grid in Carlow and GNIs plan to achieve 20% Renewable Gas to the network by 2030. It states that "there is potential to produce renewable biogas within Carlow using on-site or off-site anaerobic digestion at farms or industrial facilities. The intention would be that the biogas would be purified to natural gas standard at the AD site and collection logistics would be in place to transport the renewable gas to Central Grid Injection (CGI) facilities along the network".

One of the factors in the site suitability assessment for the proposed development was the existence of the high-pressure gas transmission pipeline close to the site.

The following energy infrastructure and waste management policies, as outlined in Chapter 6 (Infrastructure and Environmental Management) of the CPD, are relevant to the proposed development:



EI P1 Support and facilitate the reinforcement and development of enhanced energy infrastructure, and associated networks, to serve the existing and future needs of the County and Region. This will include the delivery of the necessary integration of transmission network requirements facilitating linkages of renewable energy proposals to the electricity and gas transmission grid, in a sustainable and timely manner, subject to proper planning and environmental considerations.

EI P6 Support the development of renewable gas production in the County at farms or industrial facilities to increase the percentage of locally recovered biogas into the national gas network through injection.

The following bioenergy policies and objective, as outlined in Chapter 7 (Climate Action and Energy) of the CDP, are relevant to the proposed development:

BE P1 Support proposals for commercial scale bioenergy plants on lands which are in industrial / enterprise use or zoned for such purposes, including on brownfield sites or sites in or adjacent to these areas.

BE P3 Ensure that any commercial bioenergy plant is close to the point of demand and is served by public roads with sufficient capacity.

BE P4 Support the development of biogas (Anaerobic Digestion) plants at suitable locations, including on-farm facilities.

BE O1 Support and encourage the development of bioenergy opportunities, facilities, and associated enterprises having regard to the effects of land use change.

The following rural development policy and objective, as outlined in Chapter 14 (Rural Development) of the CPP, are relevant to the proposed development:

RE P6 Consider larger scale enterprise proposals (>200sqm) in rural areas (outside towns and villages) only in exceptional circumstances where the criteria in Table 1² are met and where it can be demonstrated that the development is of regional or national significance, is of a specialist nature and the site-specific location requirements are clearly detailed and demonstrated.

The proposed development is Strategic Infrastructure Development , the need for which is established in Section 2.8 of this chapter.

RE O2 Require applications for larger scale industrial and enterprise development to submit a carbon footprint calculation and demonstrate how new buildings and processes / activities will seek to achieve the targets set out in the Climate Action Plan 2019 or any amendments to these targets.

A climate impact assessment has been carried out including a carbon calculation and is presented in Chapter 9 of this EIAR.

Carlow County Renewable Energy Strategy

The Carlow County Renewable Energy Strategy is included in Volume 2b Appendices (VI) of the CDP. The aim is to provide a sustainable spatial development strategy for Carlow with clear guidance on the future use of land, a framework for future investment in physical, social infrastructure, tourism and the economy and strategies to protect the diversity of the natural and cultural landscape in urban and rural environments.

² Table 1 is criteria for one off new small scale (<100 sqm) enterprises outside Towns, Villages/Settlements



Section 6.3 ('Bioenergy') of the Strategy considers the bioenergy resource in County Carlow, describing the resource and the associated energy conversion technologies, how it can be harnessed, and setting out policy and objectives to support bioenergy developments. Bioenergy can contribute to the renewable energy targets while minimising any adverse impact on the environment. Table 6-12 of the Strategy outlines the following Bioenergy objective and policies (which are previously outlined in Chapter 7):

- Objective B1 To support and encourage the development of bioenergy opportunities, facilities, and associated enterprises having regard to the effects of land use change.
- Policy B1.1 To support proposals for commercial bioenergy plants on lands which are in industrial / enterprise use or zoned for such purposes, including on brownfield sites on sites in or adjacent to these areas.
- Policy B1.3 To ensure that any commercial bioenergy plant is close to the point of demand and is served by public roads with sufficient capacity.
- Policy B1.4 To support the development of biogas (Anaerobic Digestion) plants at suitable locations, including on-farm facilities.

The Strategy regards that, "The success of bioenergy projects is heavily dependent on the availability of the resources. Carlow's large agricultural industry presents opportunities for the provision of straw and animal manure and silage. A common failure factor for bioenergy plans is competition for land use, particularly food crop production. There is reluctance to use edible plants or good quality arable land for energy crop production. Therefore, success is more likely when harnessing residue from existing industries, such as forest materials and animal by-products. The price of conventional fuels also plays an important role in the success or failure of bioenergy projects. The cost of feedstock production, transportation and processing must be compared to that of other energy sources to determine if it is economical. Also, the effect of land use change on the land within Carlow and remote lands should be considered".

Powerstown Bioenergy aligns strongly with the Carlow County Renewable Energy Strategy which establishes policy supports to establish bioenergy in the county. The proposed development will utilise agricultural residues, therefore, does not compete with food crop production.

Development Management Standards

Chapter 16 of the CDP includes the development management standards for the County. Of specific relevance are:

- General conditions, i.e. those that are common or expected include pre-planning consultations, Environmental and Appropriate Assessments, Flood Risk Assessments, Landscaping, Boundary treatments, parking spaces.
- Specific conditions include:
Site Coverage
"The maximum site coverage shall be 50% for residential development, 75% for industrial uses, 60% for other employment uses and 66% for retail and commercial development. Within town centre zones, the maximum site coverage shall in general be 80% for all development".

Refer to Appendix 2.2 of Volume 3 of this EIAR for a checklist to demonstrate the compliance of the proposed development with the development management standards.



With respect to energy development projects, the CDP is open to development in the context of Government policy but will consider competing council policies on land use and the protection of the environment.

Major Accidents

The proposed development will fall under the Major Accidents Directive. The following major accident policies, as outlined in Chapter 6 (Infrastructure and Environmental Management) of the CDP, are relevant to the proposed development:

MA P1 Have regard to the provisions of the Major Accidents Directive (European Council Directive 2012/18/EU) and any regulations under any enactment giving effect to that Directive, and the technical advice of the Health and Safety Authority (HSA) in relation to any identified SEVESO sites in the county during the life of this Plan.

MA P2 Have regard to the provisions of the Major Accident Directive (EC Directive 2012/18/EU), including any regulations under any enactment giving effect to that Directive, and to the technical advice of the Health and Safety Authority (HSA), in relation to any identified SEVESO sites in the county during the lifetime of this Plan and to the control of development with respect to:

- The siting of Major Accident Hazard sites.
- The modification of an existing Major Accident Hazard site.
- Specified development in the vicinity of a Major Accident Hazard site.

The nearest Seveso site is 7km south of the proposed development and is a Lower Tier Facility. Powerstown Bioenergy will also be Lower Tier. A Land Use Assessment has been prepared to accompany the application for development consent.

There is clear policy support for a commercial scale AD plant in County Carlow as evidenced in each of the policies listed above under Renewable Energy, Circular Economy, Climate Action, Rural Development and Zoning/Location. The CDP endorses commercial scale anaerobic digestion (S08, CS013, E1P6) and supports infrastructure for transmission of renewable energy (E1P1). The location of the proposed development aligns very well with the policies within the CDP (BE1, BE3, BE4, BE01, EOP3, REP6). The renewable energy strategy regards that, "The success of bioenergy projects is heavily dependent on the availability of the resources. Carlow's large agricultural industry presents opportunities for the provision of straw and animal manure and silage...success is more likely when harnessing residue from existing industries, such as forest materials and animal by-products. "

2.3.4.2 Carlow Local Authority Climate Action Plan 2024-2029

The Carlow Local Authority Climate Action Plan 2024-2029 (Carlow County Council, 2025) sets out how Carlow County Council will be responsible for enhancing climate resilience, increasing energy efficiency, and reducing greenhouse gas emissions, across its own assets, services, and infrastructure, to which it is fully accountable for, whilst also demonstrating a broader role of inspiring, leading and facilitating, other sectors, to meet their own climate targets and ambitions.

The vision for the Plan is that Carlow County Council will be a climate resilient and low carbon organisation that inspires, leads, and facilitates ambitious and just climate action throughout the county.

Strategic Goal 1 Carlow County Council will show leadership in effective adaptation and mitigation against climate change by developing the appropriate structures and processes for directing and managing Climate Action throughout the organisation and by achieving our Green House Gas reduction target of 51% by 2030.



Strategic Goal 2 Significantly reduce greenhouse gas emissions in public service provision and support the wider community of County Carlow by providing sustainable low or no carbon opportunities.

Strategic Goal 5 Create a culture of sustainability, promoting the circular economy, within Carlow County Council and throughout the County.

Powerstown Biogas is aligned with the Carlow Local Authority Climate Action Plan 2024-2029.

2.3.4.3 *Carlow County Council's Climate Adaptation Strategy 2019-2024*

Carlow County Council have developed a Climate Change Adaptation Strategy as a collaborative response to the impact that climate change is having, and will continue to have, on the County of Carlow and its citizens. The Climate Change Adaptation Strategy features a range of actions across nine key themes which are:

- Local Adaptation Governance and Business Operations
- Infrastructure Built Environment
- Land-use Development
- Drainage & Flood Management
- Natural Resources & Cultural Infrastructure
- Community Health & Wellbeing
- Mobility
- Economic Development
- Resource Management

These key themes will collectively address the County Council's vision of fulfilling a role in learning about and responding to the impacts of climate change, that will fully engage with the risks and opportunities of a changing climate and building a resilient future for all communities in County Carlow.

2.3.5 Other Relevant Studies & Guidance

2.3.5.1 *Carlow Local Economic and Community Plan (LECP) for 2023 – 2029*

The Carlow Local Economic and Community Plan (LECP) for 2023 – 2029 (Carlow County Council) is a strategy to support local economic and community development. The vision for the plan is "County Carlow is committed to a just and sustainable future". The proposed development is in line with the following objectives of the plan stated as high level goals (HLG):

- HLG1 – 1 : Ensure the County Carlow Business Community continues to develop in the areas of sustainability, climate and biodiversity.
- HLG5-3: Enhance the capacity of communities to develop the economic potential of their areas
- HLG6-1: . Build a resilient, sustainable business base and support new and existing businesses to grow, be enterprising and take advantage of new opportunities
- HLG6-2: Ensure our local economy contributes proportionately to, and integrates with, the growth of the region and maximises its international reach by improving the attractiveness of County Carlow as a place to do business



2.3.5.2 *National Heat Study (2022)*

The National Heat Study provides a comprehensive assessment of the options available to decarbonise Ireland's energy used for heating and cooling homes, businesses and industry. A series of eight reports were produced as outputs from the National Heat Study.

National Heat Study Heating - Low Carbon Heating and Cooling Technologies (2022)

The National Heat Study - Low Carbon Heating and Cooling Technologies (SEAI, 2022a) details the low carbon heating and cooling technologies analysed within the study and the key characteristics of the systems used as inputs to the modelling analysis.

Some of the main goals of this study is to:

- "Develop a detailed understanding of heating and cooling demand in the residential, services and industrial sectors and the opportunities to reduce this.
- Assess the potential and costs of the low-carbon technologies and fuels that can decarbonise heat generation.
- Explore pathways for technology and fuel deployment to reach net zero by 2050".

A wide variety of renewable heating technologies for the industry were considered in the study, in combinations of technology group and renewable fuel. The primary fuels considered are hydrogen, electricity, and biomethane.

Some of the key insights from the study of relevance to the proposed development are:

- "Low carbon gases such as hydrogen and biomethane have the potential to decarbonise heating in over half of residential, commercial and public buildings, with solid biomass and bioliquid fuels also suitable in significant proportions of domestic and service sector buildings. If the fuel is available, a maximum of 35% of residential buildings in Ireland can be decarbonised by using hydrogen or biomethane injected into the gas distribution grid, however this number increases to 58% of residential buildings if the gas distribution grid is expanded via the "in-fill" of buildings in close proximity to the network. Biomethane is also available as a decarbonisation option to off-grid service sector buildings, providing a potential market for biomethane in future scenarios where the gas distribution grid is either decommissioned or converted to hydrogen. Biomass and bioliquid fuels are also a potential decarbonisation option in off-grid or rural buildings in these sectors, with the domestic resource potential to produce these fuels considered in this National Heat Study".
- "A wide range of low carbon fuels are available for heating across the Irish industry sector, and electrification of heat, hydrogen, biomethane and biomass fuels all have the potential to decarbonise key industrial sectors. Half of industrial heating processes have the potential to use direct electrification for heat, with 9% of heating suitable for industrial heat pumps. Biomass and biomethane have the potential to decarbonise 57% and 62% of Irish industrial heating respectively, and 77% of Irish industrial processes can decarbonise using hydrogen with appropriate heating equipment".



National Heat Study Heating - Low Carbon Gases for Heat (2022)

The National Heat Study - Low Carbon Heating Gases for Heat (SEAI, 2022b) outlines the scenarios for the possible future evolution of the gas network within the National Heat Study. Some of the key objectives on low-carbon gases include:

- Quantify the demand for gas in Ireland today and the potential future demand for low-carbon gases in the heat sector.
- Estimate the future cost of hydrogen and biomethane in Ireland, considering production routes, storage and delivery mechanisms, and the likely future hourly profile of demand.
- Highlight challenges and opportunities relating to low-carbon gases and areas of uncertainty that will require further investigation in the future.

The key insights from the study include:

- Using domestic bioresources could supply a maximum potential of around 5 TWh of biomethane. The largest potential resource comes from purpose-grown mixed-species grass silage mixed with cattle slurry. The estimated available resource is based on a detailed spatial analysis of the available land accounting for environmental constraints, the national projections for the animal herd and their fodder requirements and increases in farm productivity.
- Significant and sustained co-ordination and policy support would be needed across the entire supply chain to enable the deployment of either green hydrogen or biomethane for low-carbon heat.
- Significant investment in infrastructure would be needed for the deployment of hydrogen and biomethane before end users adopt the fuel.
- Deployment of 60-250 anaerobic digesters with annual outputs between 15 and 60 GWh would be needed by 2030.
- Grid blending of biomethane can lead to reductions in cumulative emissions by both 2030 and 2050.
- Biomethane can provide decarbonisation of heat with the lowest impact on consumers. Appliances currently using fossil gas require no adjustments to burn biomethane (either part-blended or pure biomethane).

The study recognises that the total existing fossil gas consumption in 2020 in Ireland is 53 TWh (for all sectors). The study notes that domestic biomethane will not be available in sufficient quantities to meet the full scale of demand, however, biomethane may have an important role in a more limited gas network primarily focused on supporting hard-to-decarbonise buildings and industrial sectors.

2.3.5.3 European Union Emissions Trading Scheme (2005)

EU ETS (European Commission, 2005) installations that procure biomethane for their gas demand do not have to purchase EU ETS allowances to cover that gas consumption, due to biomethane being a zero-carbon rated fuel.

2.3.5.4 Green Gas Certification Scheme

Gas Networks Ireland (GNI) registers and issues certificates to Irish producers that inject renewable gas into the gas network. The GNI requirements for injection are included in Chapter 3 of this EIAR.



2.4 Biomethane and Renewable Energy

The key biomethane and renewable energy legislative and policy documents with relevance to the proposed development are set out in this section.

2.4.1 European Legislation and Policy

2.4.1.1 *EU Fit for 55 Package (2021)*

The Fit for 55 Package (European Commission, 2021b) is a set of laws aiming to reduce EU greenhouse gas emissions by at least 55% by 2030 and achieving climate neutrality by 2050.

The Fit for 55 Package is the Commissions most ambitious climate and energy related package to date, as the package consists of several interconnected and complementary proposals which update the EU's climate and energy legislation in order to reach greenhouse gas emissions targets and deliver the European Green Deal (Section 2.3.1.2).

In 2021, the Commission proposed a review of EU gas market design as part of the Fit for 55 Package, with the aim to progressively replace fossil gas in the EU with renewable and low-carbon gases. The hydrogen and decarbonised gas market package proposed both revised and new goals to lower the carbon footprint from the gas market. The main goal is to shift from fossil fuel natural gas to renewable and low-carbon gases by 2030 and beyond. The package will strengthen security of supply. Renewable gases can be produced from the following:

- organic sources - biogas and biomethane
- non-biological renewable sources (using electricity) - renewable hydrogen, synthetic methane

2.4.1.2 *Renewable Energy Directive (RED) (2023)*

The third EU Renewable Energy Directive (RED III, EU Directive 2023/2413) (European Union, 2023) came into force in November 2023. This Directive provides for the increased deployment of renewable energy across the EU by 2030 (setting a new binding target of at least 42.5% by 2030), including provisions to simplify and accelerate the permit-granting procedure for renewable energy projects. This target is a continuation of the 20% target for 2020. The share of energy from renewable sources in overall gross final energy consumption is commonly referred to as overall RES.

The aim of RED III is to introduce sector-specific targets for transport, heating, cooling, and industry to ensure a balanced contribution from all parts of the economy and also included measures to streamline and accelerate the permitting process for renewable energy projects, addressing one of the major bottlenecks in the deployment of renewables.

RED III introduces stronger measures to ensure that all possibilities for the further development and uptake of renewables are fully utilised, which will be key to achieving the EU's objective of climate neutrality by 2050, but also to strengthen security of energy supply across Europe.

RED III reflects the EU's commitment to achieving higher renewable energy targets and facilitating clean energy.



Powerstown Biogas will be RED III compliant. The feedstocks are manures made up of beef, dairy, pig, poultry, horse and farmyard manures. The farmyard manures contain wet straw. These feedstocks are listed in Annex 1X (Feedstocks for the production of biogas for transport and advanced biofuels) of RED as (f) animal manures and (e) straw. The application for development consent will include the feedstock menu. No feedstocks will be accepted that are not compliant with Annex IX. 13,000 tonnes per annum of sustainable and certified woodchip will be used in the heating centre on site. This will be sourced from a supplier in Ireland and will meet the RED requirements for sustainability certification.

2.4.1.3 EU Hydrogen and Gas Market Decarbonisation Package

The EU Hydrogen and Gas Decarbonisation package, consisting of Directive (EU) 2024/1788 (EU on Common Rules For renewable gas, natural gas and hydrogen) (European Union, 2024a) and Regulation (EU) 2024/1789 (European Union, 2024b), was adopted in May 2024. This is referred to as the Fourth Gas Package.

This updates the rules on the EU natural gas market set out in the Gas Directive 2009/73/EC and the Gas Regulation 715/2009 and also introduces a new regulatory framework for dedicated hydrogen infrastructure and decarbonised gases. EU countries have until mid-2026 to transpose the new rules into national law. This Fourth Gas Package is aimed at cutting greenhouse gas emissions and ensuring security of supply. This legislation is intended to facilitate renewable gas entry into networks. The following two aspects of the Gas Package are relevant to the ambition of the proposed development.

Renewable and low-carbon gases

- The revised rules will give renewable and low-carbon gases better access to markets and infrastructure.
- The revised rules will facilitate the replacement of fossil gasses, in line with the objectives of the REPowerEU Plan (refer to Section 2.4.1.4).
- Long-term contracts for unabated fossil gases will not run beyond 2049, which will pave the way to import renewable and low-carbon gases from outside the EU - supporting the decarbonisation of the gas market.

Improve Energy Security and Supply

To decarbonise the energy sector, energy security must be guaranteed. However, in some areas of Europe, disruptions from a single transport route can threaten the energy security of an entire country. Energy / gas supplies can arise from technical or human failures, natural disasters, cyber-attacks or geopolitical conflict.

The hydrogen and gas decarbonisation package amends the security of gas supply regulation (EU/2017/1938). The revised rules aim to extend the scope of the regulation to include renewable and low-carbon gases in the natural gas grid. .

The revised rules will which ensures that EU countries will provide each other with 'solidarity gas' even in case of a severe emergency, by guaranteeing a set of standard rules apply when EU countries have not signed bilateral agreements.

Relevance to the proposed development

The proposed development will generate biomethane and inject into the national grid. Under this Gas Package, Member States have an obligation to facilitate this in order to decarbonise energy supply and improve energy security.



2.4.1.4 *REPowerEU Plan (2022)*

In response to the hardships and global energy market disruption caused by Russia's invasion of the Ukraine, the European Commission implemented the REPowerEU Plan (European Commission, 2022b) to phase out Russian fossil fuel imports. The REPowerEU Plan was published in May 2022.

The REPowerEU Plan recognised that “scaling up sustainable biomethane and the roll-out of renewable hydrogen could play a decisive role” in ensuring secure and more sustainable power supply for the EU. The REPowerEU Plan recognises that the uptake of biomethane involves a continued support to innovative technologies for the production of sustainable biomethane, upgrade of biogas to biomethane and its integration within the gas network.

2.4.1.5 *EU Methane Strategy (2020)*

The EU's Methane Strategy (COM2020/663) (European Commission, 2020b), published in October 2020, sets Europe's ambition and aims to curb temperature increases, improve air quality and reinforce the EU's global leadership in the fight against climate change in line with the Green Deal. It includes methane emissions from energy and agriculture sectors. The Strategy calls out the opportunities for biogas production to capture methane. It states that "the biogas from such feedstocks (e.g. manures) is a source of highly sustainable and useful renewable energy with multiple applications, while the material that remains after anaerobic digestion (digestate) can, after further processing, be used as a soil improver. This in turn reduces the requirement for alternative soil improving products, such as synthetic fertilisers of fossil origin". It states that it is essential that biogas developments are based primarily on waste or agricultural residues, not food or feed crops in order to derive the mitigation benefits of biogas.

This Strategy demonstrates European support for biogas generation from agricultural residues. It strongly encourages cooperation between the agricultural sector and anaerobic digestion and points to the benefits of biogas derived from organic agricultural wastes to reduce methane emissions, generate new revenue streams for farmers and contribute to wider rural development.

2.4.1.6 *EU Energy System Integration Strategy (2020)*

The EU Energy System Integration Strategy (European Commission, 2020a), part of the EU Green Deal promotes integrated systems such as circular systems, such as incentivise the use of agricultural residues to produce sustainable biogas, promote renewable fuels, adapt energy markets to facilitate integration.

2.4.1.7 *Clean Energy for all Europeans Package (2019)*

The Clean Energy for all Europeans Package (European Commission, 2019a) is a framework setting out the European energy policy that aims to facilitate a clean energy transition and the implementation of the Energy Union strategy goals.

The EU is tackling the transition towards clean energy and a carbon-neutral economy by rewriting the EU's energy policy framework to facilitate a clean and fair energy transition. As a package, the new rules will reinforce consumer rights, putting them at the heart of the energy transition and creating growth and green jobs in a modern economy. In doing so, this will enable the EU to show leadership in the fight against climate change following the Paris Agreement.

Member States can continue to choose their own energy mix; however, Member States must meet new commitments to improve energy efficiency and the take-up of renewables in that mix by 2030.



2.4.1.8 *Energy Roadmap 2050 (2011)*

The European Energy Roadmap 2050 (European Commission, 2011) was published in 2011 and explores the transition of Europe's energy systems so that they are compatible with the greenhouse gas (GHG) reduction targets set out in the Renewable Energy Directive (2009/28/EC), while also increasing competitiveness and security of supply.

2.4.1.9 *A Roadmap for Moving to a Competitive Low Carbon Economy in 2050 (2011)*

The Roadmap for Moving to a Competitive Low Carbon Economy in 2050 (European Commission, 2011) sets out a plan to meet the long-term target of reducing domestic emissions by 80 to 95% by mid-century as agreed by European Heads of State and Governments.

This Roadmap shows how the sectors responsible for Europe's emissions i.e., power generation, industry, transport, buildings and construction and agriculture - can make the transition to a low-carbon economy over the coming decades.

2.4.2 National Legislation and Policy

2.4.2.1 *The Renewable Heat Obligation Bill 2025*

Ireland has introduced this Bill to increase the use of renewable energy by obliging fossil fuel suppliers to ensure a proportion of the energy that they supply for heating is from a renewable source. The Bill was approved by government in July 2025. This Bill has yet to be enacted and legislation published. This is a key provision of the National Biomethane Strategy. Through the future legislation, there will be a requirement on fossil fuel suppliers to purchase biomethane thus facilitating the achievement of national targets for biomethane production, see Section 2.4.2.4. At time of writing the Bill is due to be enacted by 2026 but the European Commission raised concerns which may delay the enactment.

2.4.2.2 *European Union (Planning and Development) (Renewable Energy) Regulations 2025 as amended*

The European Union (Planning and Development) (Renewable Energy) Regulations 2025 as amended (S.I. No. 274 of 2025 and S.I. No. 426 of 2025) (Government of Ireland, 2025e) transpose key provisions of the EU's third Renewable Energy Directive (RED III, EU Directive 2023/2413) (European Union, 2023) (see Section 2.4.1.2 into Irish planning law, specifically amending the Planning and Development Act 2000 and Planning and Development Regulations.

The Regulations introduce mandatory, shorter permit-granting timelines for various renewable energy projects, streamline the environmental impact assessment (EIA) process for some developments, and prioritise renewable energy and grid infrastructure development in planning decisions to accelerate the EU's clean energy transition.

Under the 2025 Regulations 'renewable energy development' is defined to mean 'development the purpose of which is to generate renewable energy from one or more than one renewable non-fossil resource...'. Renewable energy is further defined as 'energy from a renewable non-fossil source, namely biomass, landfill gas.....or biogas'

As stated in Section 2.4.1.2 Powerstown Biogas will be RED III compliant and is being submitted for development consent as a renewable energy project.



2.4.2.3 *Ireland's Programme for Government*

The programme endorses the renewable energy commitments and provides the political mandate to fund supports for the delivery of the National Biomethane Strategy. It has strong commitments for the expansion of renewable energy in Ireland, including the reaffirmation of the national target of 80% of electrical demand to be met by renewable energy sources by 2030. There is €3.5 billion approved investment for grid infrastructure.

2.4.2.4 *National Biomethane Strategy (2024)*

The National Biomethane Strategy (Government of Ireland, 2024c) sets out the necessary policy and regulatory measures, and provides a roadmap, to developing a biomethane industry of scale in Ireland. The Strategy is Ireland's first major policy statement on biomethane and is an important milestone in the development of an indigenous sector. Ireland is recognised by the European Commission as having one of the largest potentials for biomethane production in Europe on a per capita basis due to its substantial agriculture sector.

The main objective of the Strategy is "to deliver on the ambitious target set by Government as part of the agreement on the sectoral emission ceilings. The ambition is to scale up indigenously produced biomethane by up to 5.7 TWh per annum by 2030".

The development of the Strategy is focused on a framework of five interlinking pillars seen as critical to target delivery, these are:

- sustainability
- demand for biomethane
- bioeconomy and the circular economy
- economics of biomethane
- enabling policy requirements

Each of the pillars are aligned with twenty-five key strategic actions. Implementation of the Strategy and delivery of these actions will require concerted action across key Departments and agencies to ensure the necessary supports and infrastructure are in place to support the biomethane industry.

There were a number of support mechanisms assessed during the development of the Strategy including Contracts for Difference (CfD) and Feed in Tariffs (FiT). The Renewable Heat Obligation (RHO) in conjunction with Capital Grants were the chosen method to support the swift delivery of a biomethane sector in Ireland.

The Strategy notes that:

"To support the need to decarbonise the heat sector, the Government has agreed to the introduction of a Renewable Heat Obligation (RHO). The RHO will support an increased use of renewable energy in the heat sector and contribute to a reduction in emissions in line with Ireland's climate ambitions. As Ireland imports most of its fossil fuels, the heating sector is a significant contributor to Ireland's high energy import dependency. The RHO will also help reduce our reliance on imported fossil fuels and strengthen our energy security due to greater diversification of our energy streams..... Under current proposals, the RHO would recognise biomethane as an eligible fuel for certification, providing an important policy tool to support the development of an indigenous biomethane sector and delivery of the Government target of 5.7 TWh by 2030."

The Strategy recognises that "biomethane has the potential to progressively replace fossil gas supplies at a national level as we substantially reduce our use of gas over the next 15 to 20 years."



At the time of publishing the Strategy, Ireland had only two operational biomethane facilities injecting biomethane into the gas grid; the volume of biomethane injected into the grid at present is small, equating to c. 75 GWh per annum (0.001% of Ireland's current gas demand). The benefits that Ireland can realise from the development of a new agri-centric biomethane industry include the following:

- meet its legally binding climate targets
- helps to reduce agriculture sector emissions
- diversification option for farmers
- opportunity to replace chemical fertiliser with a supply of biobased fertiliser
- helps reduce Ireland's energy emissions
- improves gas security and diversification of supply
- stimulation of the rural economy

The Strategy outlines the importance of biomethane production for ensuring security of energy supply in Ireland, as c. 75% of Ireland's gas supply is currently imported from the UK, with biomethane (along with hydrogen in the future) playing a key role in ensuring a domestic supply of renewable gas to diversify gas supply and displace fossil gas.

The Government states in the Strategy, that to achieve the 2030 national target for the generation of biomethane, slurry from 1.3 M cattle is required. This is equivalent to 18.2 M tpa of manure as shown in **Error! Reference source not found.** Powerstown Bioenergy requires 663,000 tonnes of manure per annum to generate 250 GWh renewable biogas. The Strategy considered "three potential high level scenarios" for the generation of biomethane. In deriving the three potential high level scenarios, the Plan states: "While each scenario contains numerous assumptions and uncertainties, they represent possible and credible pathways depending on the design and policy decisions chosen in the National Biomethane Strategy".

"Environmental considerations were also at the forefront of the analysis. Centrally located, larger plants utilising the national gas network reduce overall emissions and energy consumption. While smaller plants with virtual pipelines require more energy, they were seen as a viable solution for farming groups and community groups as the overall level of sustainable feedstock required could be sourced from the immediate vicinity".

The chosen strategy was a mix of two scenarios; a small number of large plants and a larger number of small plants. The strategy is not prescriptive in terms of delivery, instead presenting a vision of how the sector would develop in terms of scale, feedstocks, regulations, financial supports, end users and sustainability.

Error! Reference source not found. shows the biomethane potential in Ireland, with the national target of 5.7TWh generation to be achieved by 2030. The proposed development will generate 0.25 TWh of biomethane using 663,000 t of manure in one AD facility. To achieve the national target, Ireland needs over 20 no. AD plants at this scale or a mix of scales, but as scale goes down the number of AD plants increases. This demonstrates the scale of manure feedstock availability, the scale of the 2030 national target and the need for over 20 commercial scale AD plants to meet the target. The National Biomethane Strategy identified the need for a broad mix of facility size, mainly at 40 GWh. At that scale Ireland would need to develop 143 no. facilities to comply with the national target which is the equivalent of 6 facilities per county with spreadlands in close proximity.

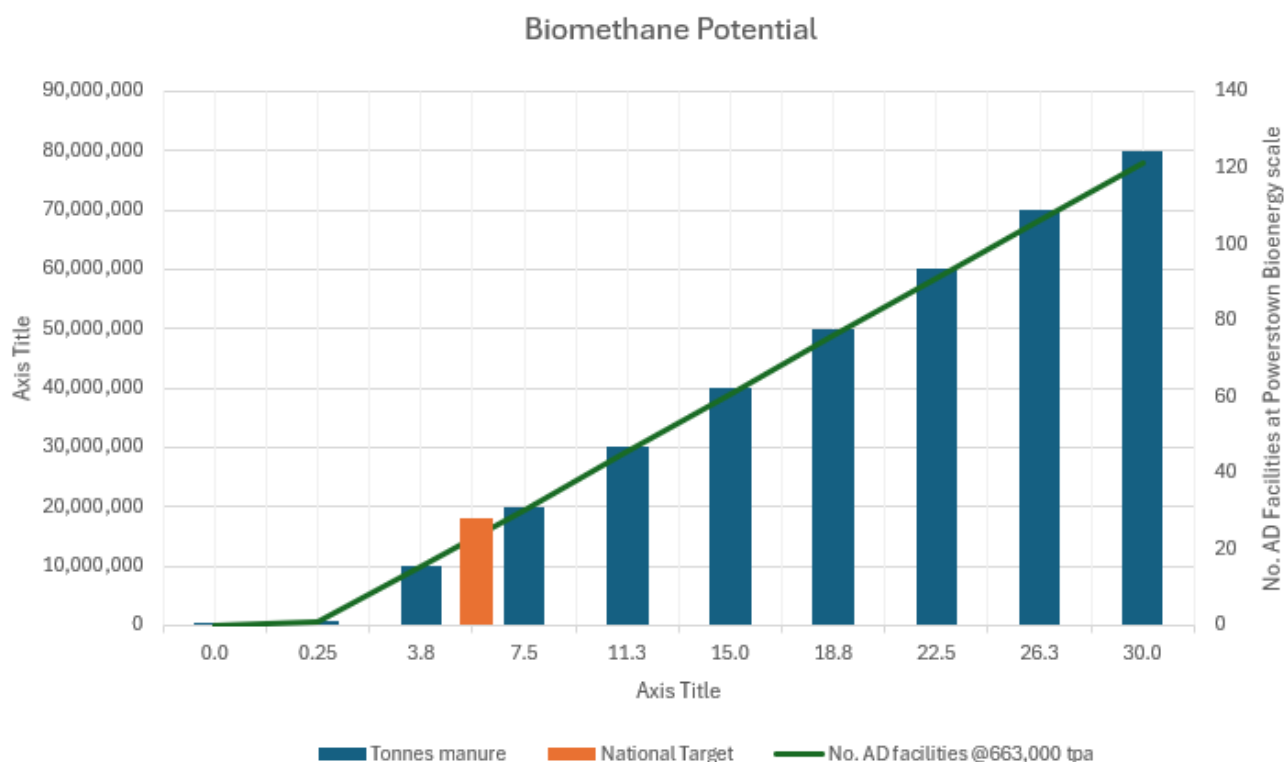


Figure 2-1: Biomethane Potential Manures

The proposed development will fully align with the National Biomethane Strategy objectives to support the delivery of indigenously produced biomethane by up to 5.7 TWh per annum by 2030. The Programme for Government 2025 commits to making funding available for the delivery of this strategy.

Along with this strategy there is a national biomethane implementation group and a sustainability charter for the implementation of the strategy.

2.4.2.5 Biomethane Environmental Sustainability Charter

This charter (Government of Ireland, 2025a) states that all anaerobic digestion plants " must be expected to meet the highest of environmental and industry standards, including, though not limited to, Renewable Energy Directive sustainability criteria compliance.

Sustainability compliance must align with the European Union (Renewable Energy) Regulations 2022 (SI 350 of 2022) and RED criteria to avoid ambiguity, except where this framework specifies more stringent sustainability criteria or as defined by each biomethane mandate/ support scheme's terms and conditions."

The proposed development will be RED compliant as stated in this chapter.

The charter includes the following key principles:

- digestate management
- sustainable feedstock production
- plant design and operation
- community and local engagement
- innovation



Powerstown Biogas will return digestate to supplier farmers on a like for like basis of nutrient composition. The digestate will be produced in accordance with the conditions of the IE licence. The feedstocks are agricultural residues only, the majority of which are sourced from 35km of the proposed development. The plant design and operation has <1% methane leakage and uses BAT. Solar panels will be placed on roof areas to produce renewable energy to offset the power usage from grid. Sustainable biomass certified as RED compliant will be used in the heat centre.

2.4.2.6 Revised National Planning Framework- Project Ireland 2040

The NPF is discussed in Section 2.3.2.2 as it relates to both climate and biomethane and energy.

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

The White Paper on Ireland's Transition to a Low Carbon Energy Future 2015-2030 (DCENR, 2015) is a framework to guide energy policy to 2030. It set out the objectives to guide Ireland's transition to a low carbon energy system, which provides for secure supplies of competitive and affordable energy to citizens and businesses. This is an overarching energy policy for Ireland which established the framework for renewable energy growth, gas decarbonisation and energy security. It provided the policy basis for biomethane development, including the national biomethane strategy in 2023.

It states that "Bioenergy is a versatile source of energy that can be used for heating, transport, and power generation. The most advantageous economic benefits arise when it is used for heating. Bioenergy encompasses a range of fuels in solid, liquid, and gaseous forms, including forest based biomass, dry agricultural residues, energy crops, organic materials including wastes, and landfill gas and other biogases. Bioenergy can contribute to broader policy objectives such as waste recovery and rural development, Anaerobic digestion also has the potential to improve air quality, for example through mitigation of ammonia emissions and odour by diverting slurry from land spreading. However, expanding the uptake of bioenergy involves several challenges, including the availability of sufficient sustainably-sourced biomass, competition with other land uses such as food production, and the cost of support. Consideration must be given to the most prudent uses for bioenergy. "

2.4.2.8 Energy Security in Ireland to 2030 - Energy Security Package (2023)

The Energy Security in Ireland to 2030 - Energy Security Package (Government of Ireland, 2023c) outlines a new strategy to ensure energy security in Ireland for this decade, while ensuring a sustainable transition to a carbon neutral energy system by 2050.

Informed by Government's energy security policy objectives, that will ensure energy is affordable, sustainable, and secure, this report sets out that Ireland's future energy will be secure by moving from an oil- and gas-based energy system to an electricity-led system, maximising our renewable energy potential, flexibility and being integrated into Europe's energy systems.

The Energy Security Package recognised that "the National Biomethane Strategy in development sets us on a trajectory to develop a new source of renewable indigenous gas in Ireland. It also complements our work to continue to expand interconnection to Europe as set out in the latest Interconnection Policy published in July 2023". Biomethane ultimately has an important role to play in supporting Ireland's energy transition.



2.4.2.9 *National Policy Statement on the Bioeconomy (2018)*

The National Policy Statement on the Bioeconomy (Department of the Taoiseach, 2018) sets out how the strategic development of the bioeconomy could be advanced through greater policy coherence across all relevant sectors, which noting the fundamental challenges to its commercial success and social development.

The Policy Statement outlines Ireland's comparative advantages in developing bioeconomy and provides commitments in the form of a Policy Framework for Developing the Bioeconomy.

2.4.2.10 *Bioeconomy Action Plan 2023-2025*

Ireland's first national Bioeconomy Action Plan 2023-2025 (Government of Ireland, 2023a) was published in 2023 on foot of the National Policy Statement on the Bioeconomy in 2018. The Bioeconomy Action Plan includes 33 actions to accelerate support for the development of the bioeconomy and acknowledges that a functioning bioeconomy must balance its development between each of Governance & Awareness, Research, Development & Innovation, Nature, Climate, Energy & Circular Economy, Agriculture, Food, Forestry & the Marine, Communities, Regions & Cities, Industry & Enterprise and Knowledge & Skills.

The Government recognises that the bioeconomy is crucial for sustainability while also providing an impetus to rural development and employment.

2.4.2.11 *Ireland's integrated National Energy and Climate Plan (NECP) 2021-2030*

See Section 2.3.1.4 and Section 2.3.2.5 under the Climate section of this chapter.

2.4.2.12 *Ireland's Common Agricultural Policy (CAP) Strategic Plan 2023-2027*

This is discussed in Section 2.6.2.3.

2.4.3 Regional Level

2.4.3.1 *Regional Spatial and Economic Strategy (RSES) for the Southern Region*

See Section 2.3.3.1 under the Climate section of this report.

2.4.4 Local Policy

2.4.4.1 *Carlow County Development Plan 2022-2028*

See section 2.3.4.1 under the Climate section of this report.

2.4.4.2 *Carlow County Renewable Energy Strategy 2021 (RES)*

See section 2.3.4.1 under the Climate section of this report.



2.4.5 Other Relevant Studies & Guidance

2.4.5.1 *Biomethane Energy Report – Gas Networks Ireland (2023)*

Gas Networks Ireland (GNI) Biomethane Energy Report (Gas Networks Ireland, 2023) provides a detailed insight into the potential for biomethane production in Ireland and the rationale for accelerating biomethane production in Ireland. The report states that:

- **"Security of supply:** Domestically produced biomethane, dispersed throughout the country, boosts security of supply and can displace fossil gas from Corrib as it declines.
- **Cost competitive:** Similar to the early years of the wind industry, the biomethane gate price is currently more expensive than natural gas.
- **Rapid climate action:** Biomethane could rapidly reduce climate emissions across hard to abate energy demand sectors and can create negative emissions.
- **Sustainable agriculture:** Biomethane production boosts employment in rural areas, promotes circular economy in agriculture, and can improve soil health. Digestate, a byproduct of biomethane production can displace fossil produced fertilizer.
- **Energy system services:** Biomethane can deliver highly valuable energy, which is dispatchable, suitable for intensive heat industries, transport and other hard to abate sectors.
- **Technology and infrastructure ready:** Biomethane is produced with existing technology and can therefore be rapidly scaled up. It can also be transported, stored, and distributed through existing gas grids."

The report concludes that: "Ireland has a real opportunity to develop a biomethane industry at scale, which will offer multiple benefits for our agricultural economy, assist in the decarbonisation of Ireland's economy more generally, enhance our security of energy supply and lead to the development of a key renewable indigenous energy resource in the build-up to 2030".

2.5 Biodiversity

The EU Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna) (as amended) (the 'Habitats Directive') together with the Birds Directive (Council Directive 2009/147/EC on the Conservation of Wild Birds) (as amended) (the 'Birds Directive') are the main legislative instrument for the protection and conservation of biodiversity within the European Union (EU). These are discussed in Chapter 11 of this EIAR. The EU Water Framework Directive (2000/60/EC) (as amended) requires all Member States to protect and improve water quality in all waters in order to achieve good ecological status by 2015 or, at the latest, by 2027. This along with its national legislation is included in Chapter 11 of this EIAR.



2.6 Agricultural Emissions

2.6.1 European Legislation and Policy

2.6.1.1 *Common Agricultural Policy Strategic Plan*

The Common Agricultural Policy (CAP) strategic plan (European Commission, 2022a) is a European strategic plan upon which individual national plans are generated for the same time period. EU funding supports European farmers in the transition towards a more sustainable and resilient agricultural sector.

2.6.1.2 *EU Climate Law 2021*

As per Section 2.3.1.3, the EU Climate Law 2021 (European Union, 2021) makes it a legal objective for the EU to reach climate neutrality by 2050. The EU now has legally binding climate targets covering all key sectors of the economy including agriculture. The proposed development will replace 250 GWh of fossil fuel derived gas with indigenous renewable gas and will the digestate generated with replace synthetic fertilisers.

2.6.1.3 *EEC Nitrates Directive (91/676/EEC)*

The Council Directive of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (91/676/EEC) known as the Nitrates Directive) (European Economic Communities, 1991) aims to protect water quality from pollution by agricultural sources and to promote the use of good farming practice. All EU Member States are required to prepare National Nitrates Action Programmes (NAP) that outline the rules for the management and application of livestock manures and other fertilisers. This is relevant to the management of slurries and manures and to the management of digestate from the proposed development.

2.6.2 National Legislation and Policy

2.6.2.1 *Ireland's 6th Nitrates Action Programme 2026-2028*

All EU Member States are required to produce a Nitrates Action Programmes (NAP) every 4 years, which then set the rules and regulations for farm management, including the application of slurry and fertilisers. The objective is to protect water quality from agricultural pollution. These rules are encapsulated in the Nitrates Regulations, which are updated whenever the NAP is updated, to reflect any changes, hence 2026 regulations were published on foot on this programme, the European Union (Good Agricultural Practice for Protection of Waters)(Amendment) Regulations 2026, see Section 2.6.2.2.

Ireland's Sixth Nitrates Action Programme 2026-2028 (Government of Ireland, 2026) introduces new measures for the management of nutrients to mitigate loss to water. There are both regulatory and non-regulatory measures within the programme, with the regulatory measures implemented through the 2026 regulations.

The Programme refers to the role of the agri sector in delivering the targets of the National Biomethane Strategy and states that the existing online register to record the movement of manures from farm holdings within 4 days of the movement shall be expanded to include the movement of all organic manures to agricultural land regardless of source.

The 6th Nitrates Action Programme is relevant to the project because it sets out rules for the management of manures which are enforced by the Nitrates Regulations (Section 2.6.2.2).



2.6.2.2 *European Union (Good Agricultural Practice for Protection of Waters)(Amendment) Regulations 2026 - S.I. No. 119 of 2026*

S.I. No. 119 of 2026 amends the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2025 (S.I. No. 588 of 2025). These Regulations are known as the Nitrates Regulations, and they give legal effect to the National Nitrates Action Programmes (NAP). They apply to all movements of organic fertilisers in the State. Nutrient Management Plans (NMPs) must be prepared by occupiers of holdings (farm owner or lessee) in accordance with European Union (Good Agricultural Practice for the Protection of Waters) Regulations. The schedules to these Regulations stipulate the requirements to be include in the preparation of the nutrient management plans, such as,

- methodology for determining the Phosphorus content of soil
- determining nitrogen index for tillage crops
- maximum fertilisation rates of phosphorus on tillage crops
- amount of nutrients contained in 1 tonne of organic fertilisers other than slurry
- nutrient availability in compost (C:N)

The Regulations require that the total nitrogen and phosphorus content for liquid digestate per tonne is based on certified analysis provided by the supplier (Table 8 of the Regulations) and other types of manure are listed in Table 9 of the Regulations. The determination of the C:N ratio shall be based on a methodology agreed with the Agency or the Minister for Agriculture, Food and the Marine (Table 10 of the Regulations). To prepare NMPs in accordance with these Regulations, analysis of the actual digestate for land spreading, the phosphorus content of soil and the crops grown on the proposed landbank is required, i.e. post AD process. The supply-return agreement with the suppliers will be based on nutrient content, whereby the feedstock supplier takes back digestate with an equal nutrient concentration to that supplied.

A NMP is for the management of nutrients in manures and fertilisers suitable for the current nutrient balance of the landholding. This allows the farmer to optimise soil fertility, recycle slurries and manures and comply with the limits under the Nitrates Regulations and to prevent loss of valuable nutrients from the farming system to the environment. The preparation of NMPs is the responsibility of the occupier of the holding i.e. the feedstock supplier.

Farmers (identified by herd number) are required to notify the Department of Agriculture, Food and the Marine (DAFM) via Agfood database within four days of exporting an organic manure from their holding In order for this export to be considered valid, it must also be confirmed or verified by the recipient (identified by herd number). All farms have a herd number. The proposed development will have a virtual herd number and as such the Applicant will notify DAFM of export of digestate and will provide certificates of analysis to receiver.

2.6.2.3 *Ireland-CAP Strategic Plan 2023-2027*

Ireland's CAP Strategic Plan 2023-2027 (Government of Ireland, 2022a) that came into force on the 1st January 2023 has "a strong emphasis on the achievement of a higher level of climate and environmental ambition and contains measures that aim to improve biodiversity and water quality, as well as contributing to national and EU climate and environmental targets" (Government of Ireland, 2022b). It offers supports to farmers to reduce agricultural emissions and to protect the environment. Some of the funds available to farmers will support Powerstown Bioenergy for example facilitating better manure management, improved slurry storage and actions to reduce ammonia and methane emissions.



2.6.2.4 *Climate Action and Low Carbon Development (Amendment) Act 2021*

As per Section 2.3.2.1 this establishes a framework with clear, legally binding targets. National and local policy must align, including national climate action plan, local climate plans and local development plans. The Act aims to achieve a carbon neutral economy by 2050. National agricultural policy includes this target.

2.6.2.5 *Climate Action Plan 2025*

As per Section 2.3.2.4, there are sector emissions ceilings for agriculture in CAP25 which is underpinned by the Climate Action and Low Carbon Development (amendment) Act 2021. Ireland is at risk of not achieving the agricultural emissions target by 2030. "Agriculture accounted for 34.3% of Ireland's greenhouse gas (GHG) emissions in 2023. Agriculture emissions decreased by 4.6% or 1.0 MtCO₂ eq. to 20.782 MtCO₂ eq. in 2023, compared to 2022." The target is to achieve a 25% reduction on 2018 emissions by 2030. CAP 25 lists key targets to reduce agricultural emissions including reduction of chemical nitrogen fertiliser use to a maximum of 300,000 tonnes by 2030 and to mobilise the recommendations of Food Vision 2030, see Section 2.6.2.9. which include anaerobic digestion. In order to encourage reduction in chemical fertiliser use, the government commits to launching supports for on farm nutrient storage.

2.6.2.6 *Ireland's Programme for Government*

The programme endorses the renewable energy commitments and provides the political mandate to fund supports for the delivery of the National Biomethane Strategy.

2.6.2.7 *National Biomethane Strategy*

This strategy is discussed in Section 2.4.2.4. It will be agri-led and farmer centric focussing on supplying feedstocks to generate biomethane.

2.6.2.8 *Clean Air Strategy for Ireland*

The strategy (Government of Ireland, 2023b) is the high level policy framework in Ireland to integrate clean air considerations into government policy. The objectives include compliance with EU and International air quality standards (see Chapter 8 of this EIAR). In accordance with Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001 on national emission ceilings for certain atmospheric pollutants, and amended by Directive 2016/2284/EU of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC, there are National Emissions Ceilings for nitrogen oxides, non-methane volatile organic compounds, sulphur dioxide and ammonia. Agriculture is responsible for over 99% of ammonia emissions from manure storage and spreading and 27% of nitrogen oxides (Government of Ireland, 2023b) associated with chemical nitrogen fertiliser application, urine and manure. The measures to control agri source emissions are included in government policies such as AgClimatise, CAP25 and the Nitrates Action Programme. It is also reflected in the Code of Good Practice for Reducing Ammonia Emissions from Agriculture. Of the measures, Powerstown Bioenergy will support compliance with the reduction of chemical fertiliser use by replacing it with organic digestate.



2.6.2.9 Food Vision 2030

Food Vision 2030 A World Leader in Sustainable Food Systems (Government of Ireland, 2022c) has four missions, the first of which is to create a climate smart, environmentally sustainable agri-food sector. It should be climate neutral by 2050 in line with European and national commitments and law. Of relevance to Powerstown Bioenergy is the goal to embed the agri-food sector in the circular regenerative bioeconomy.

Action 7 of Goal 1 is to "scale up renewable energy (RE) sources, especially anaerobic digestion, biorefining and biomass supply, and solar PV; focus on energy efficiency; and examine potential barriers to the roll-out of RE at farm level, including necessary support for microgeneration and access to the grid".

Action 2 of Goal 6 is to "scale up resource-efficient, circular and low carbon solutions based on principles of renewable energy, cascading and circular use of sustainable biological resources". It lists anaerobic digestion as a technology that can convert low value materials (slurries and manures) to higher value materials (digestate) whilst generating fuel (biomethane). It promotes cross-sector collaboration and investment, nationally and internationally, for the development of circular and climate-neutral industries. Action 3 is closely related, to develop a plan or the scaling up of circular bioeconomy approaches.

2.6.2.10 Ag Climatise – A Roadmap towards Climate Neutrality

As per Section 2.3.2.7, this is the national roadmap to achieve climate neutrality in the agricultural sector. Action 1 Mission 1 of Food Vision 2030 was to immediately implement this roadmap.

The roadmap sets out the context or the need for the shift in agriculture to reduce carbon emissions by establishing the following:

- "Biogenic methane (CH₄) from livestock accounts for the greatest share of this, approximately 65% of the total agriculture emissions.
- Nitrous oxide (N₂O) is the other potent GHG (30% of total) with approximately 40% of these emissions being associated with chemical nitrogen fertilisers.
- In total, approximately 80% of the agricultural GHG inventory is related directly to the number of animals and the management of the manure they produce".

In order to achieve the sectoral emissions target for agriculture, Ireland must not generate any increase in biogenic methane emissions. The sector needs to find ways to reduce emissions without compromising its ability to grow feed and maintain the pasture based diet of our national herd.

Ag Climatise sets out actions for the agricultural sector to reduce greenhouse gas emissions including within Action 1 supporting the use of non-chemical nutrients such as bio-based fertilisers and soil conditioners through greater visibility of the fertiliser marketing regulations and in action 10, where possible source organic manures for application to tillage land. Actions 11 and 12 call for investigating how the bioeconomy can interact and synergise activities in a circular fashion that deliver organic nutrients to primary production, capture and reuse waste generated and deliver environmental sustainability with due regard to food safety implications. Action 20 is to maximise potential opportunities from anaerobic digestion for the agricultural sector. "Ag Climatise recognises that the agriculture sector has a key role to play in helping Ireland meet its renewable energy targets through the supply of bioenergy and biobased materials in displacing fossil fuels and energy intensive materials" (Government of Ireland, 2022c).



2.7 Waste Management

2.7.1 European Legislation

2.7.1.1 *Waste Framework Directive (as amended)*

Existing manure arisings are not a waste, i.e. they have not been discarded as defined under the Waste Framework Directive, however, the anaerobic digestion of animal by products (manures) is a waste activity under the Waste Framework Directive as per the following:

Section 3(1)(g) of the Waste Framework Directive 2008/98/EC and the Waste Management Act 1996, as amended, states that the Act shall not apply to:

3.— “(1) This Act shall not apply to—

(g) faecal matter, if not covered by subsection (2)(b), straw and other natural non-hazardous agricultural or forestry material used in farming, forestry or for the production of energy from such biomass through processes or methods which do not harm the environment or endanger human health.”

Where subsection 2(b) states: (2) This Act shall not apply to the following to the extent that they are covered by other Community acts:

“(b) animal by-products, including processed products covered by Regulation (EC) No. 1069/2009 of the European Parliament and of the Council of 21 October 2009 laying down health rules as regards animal by-products and derived products not intended for human consumption and repealing Regulation (EC) No. 1774/2002 (Animal by-products Regulation) [except those which are destined for incineration, landfilling or use in a biogas or composting plant].”

Therefore, by virtue of the above, manures in an anaerobic digestion process fall under the Waste Framework Directive.

2.7.2 National Policy

2.7.2.1 *National Waste Management Plan for a circular economy 2024-2030*

The National Waste Management Plan for a Circular Economy 2024-2030 **Invalid source specified.** includes specific targets, policies and actions to enable the waste and resource sector to meet the circularity challenge and accelerate the transition to a circular economy. The requirement for this plan is from the Waste Management Act and the Waste Management (Planning Regulations) 1997 as amended. The regulations list waste types and waste fractions that should be included in the waste management plan. Whilst agricultural wastes are included, it refers to waste and under Article 3 of the Waste Framework Directive, waste is defined as any substance or object which the holder discards or intends or is required to discard. Manures are not included in the national waste management plan as the farmer has no intention of, or requirement to discard their agricultural residues, as they are used for landspreading to fertilise the land.

There is siting guidance in Appendix 9 of Volume IV (Waste Management Infrastructure - Guidance for Siting Waste Management Facilities). Powerstown Bioenergy is compliant with these siting requirements. This is demonstrated in Appendix 2.1 of Volume 3 of this EIAR.



2.8 Need for the Proposed Development

Powerstown Bioenergy is necessary to produce renewable biomethane to contribute to Ireland's national target of up to 5.7 TWh of indigenously produced biomethane by 2030 as set out in the National Biomethane Strategy (Government of Ireland, 2024c). Powerstown Biogas will generate 250 GWh of renewable biomethane which is used as a direct substitution for fossil fuel generated gas. At a strategic level, the need for the proposed development is supported by International, European, and National environmental and energy commitments and policies. This chapter contains a detailed analysis of these commitments and policies. This is in the context of substantial and continuing failure by Ireland in meeting climate targets to date, as copper fastened in the Greenhouse Gas (GHG) emissions projections for the period 2024-2055 (EPA, 2025), which indicates that Ireland will fall short its climate targets.

From 10.6 Mt CO₂eq in 2018, emissions from the Energy Industries sector are projected to decrease to between 3.4 and 4.4 Mt CO₂eq in 2030 (a 59 to 68 per cent reduction). Renewable energy generation at the end of the decade is projected to range from 60 to 68 per cent of electricity generation. The roll-out of biomethane production is rendered all the more urgent having regard to the recently published EPA projections on Ireland's Greenhouse Gas Emissions 2024 to 2050 (EPA, 2025), which warn that Ireland is currently likely to miss both its first and second carbon budget targets, in the absence of additional measures.

Ireland's Climate Action Plan 2025 (CAP25) provides a framework for delivering the Government's target of a 51% reduction (relative to 2018) in greenhouse gas (GHG) emissions by 2030. CAP25 follows the Climate Action and Low Carbon Development (Amendment) Act 2021, which commits Ireland to a legally binding target of net zero greenhouse gas emissions no later than 2050, and a reduction of 51% by 2030.

Ireland has a generation capacity shortfall. The proposed development will support Ireland's renewable energy generation to help to resolve a predicted energy capacity shortfall and meaningfully contribute towards Ireland's Climate Action Plan targets with a total saving of 181,189 tCO₂/annum when compared to burning fossil fuels.

2.8.1 Energy and Climate

International and European legally binding agreements to reduce the reliance on fossil fuels and to manage climate change internationally have been adopted into Ireland's National Energy Policy. This section of the EIAR outlines how these legally binding agreements are being facilitated through national energy and climate policy with a clear mandate to support renewable gas development within the state.

The recent increase in renewable electricity targets to 80% by 2030 indicates the need for significant escalation in renewable energy production in Ireland. The following section sets out how the proposed development complies with national and local energy policy and will contribute towards Ireland's national renewable energy targets.

2.8.1.1 *Meet Ireland's Renewable Energy Targets*

The EU Renewable Energy Directive (RED) sets a target for renewable energy share (RES) in gross final energy consumption. Ireland is committed to meeting its obligations under RED III as per Section 2.4.1.2. which is a 43% renewable energy share by 2030 in total energy consumption.

On the launch of the Climate Action and Low Carbon Development (Amendment) Bill (2021). The sitting Taoiseach, Michéal Martin, remarked that:



“The impact of our actions on the planet is undeniable. The science is undisputed. Climate change is happening, and we must act.” (Government of Ireland, 2020).

Through the Climate Action and Low Carbon Development (Amendment) Act 2021, Ireland is committed to 2030 and 2050 targets for reducing greenhouse gas emissions, and the 2021 Act provides the governance framework to ensure emissions stay on track.

The EU Climate Law 2021 (European Union, 2021) makes it a legal objective for the EU to reach climate neutrality by 2050. The EU now has legally binding climate targets covering all key sectors of the economy. Ireland is now on a legally binding path to net-zero emissions no later than 2050 and a 51% reduction in emissions by the end of this decade. The proposed development will have an Export Capacity (MEC) of renewable biomethane of 250 GWh. This will result in the net displacement of approximately 181,000 tonnes of CO₂ per annum as detailed in Chapter 9 Climate. The renewable biomethane from Powerstown Bioenergy will be injected into the national gas grid in Co. Carlow displacing fossil fuel or imported gas. This is necessary to meet the challenges of climate change and meet national targets.

In 2022, the Department of the Environment, Climate and Communications (DECC) published a target of up to 5.7 TWh, 10% of national gas demand, to come from biomethane by 2030 as part of the Sectoral Emissions Ceilings (Department of the Environment, Climate and Communications, 2022b).

The proposed development will deliver 250 GWh of renewable gas to the grid resulting in savings of 181,189 tCO₂eq per annum contributing towards Irelands national targets for biomethane generation and contributing towards the legally binding commitments for a 51% reduction in emissions by 2030 and increasing Irelands renewable energy share to meet national targets.

2.8.1.2 Meet Gas Consumption Demand

In 2024, Irelands natural gas consumption was 49.7 TWh of which 10.2 TWh was indigenously produced. In 2024, 56% of natural gas consumption was used to generate electricity. 5.6 TWh or 27% of total gas consumption was residential (SEAI, 2025). In 2024, the median household gas consumption was 7,771 kWh. County Carlow's consumption is documented in national statistics (CSO, 2025):

- Q1 2024 79 GWh (21 GWh residential, 58 GWh non-residential)
- Q2 2024 59 GWh (15 GWh residential, 44 GWh non-residential)
- Q3 2024 41 GWh (4 GWh residential, 37 GWh non-residential)
- Q4 2024 70 GWh (18 GWh residential, 52 GWh non-residential)
- Total 2024 249 GWh (58 GWh residential, 191 GWh non-residential)

Powerstown Biogas will generate 250 GWh of biomethane, meeting County Carlow's gas demand for 2024.

2.8.1.3 Improve Gas Security and Diversify Supply

Approximately, 75% of Ireland's gas supply is currently imported from the UK.



Secure supplies of energy are essential for Ireland's economy and for maintaining safe and comfortable living conditions. Energy import dependency is a significant indicator of the country's energy security. Ireland is one of the most energy import-dependent countries in the European Union, importing 80% of its fuel in 2021 (SEAI, 2022). In 2021, the largest share of energy imports was oil, accounted for 65.4% of total energy imports, natural gas 24.1%, coal 7.7%, electricity 1.6% and renewables 1.2%. Since 2018, import dependency has increased steadily as the output from the Corrib gas field continues to decline.

Price volatility of fossil fuels may increase as carbon prices escalate in the future. The cost of carbon credits is included in all electricity trade, and the price of electricity generated by coal is particularly vulnerable due to the high carbon emissions per unit of electricity generated. Coal still generates a significant amount of Ireland's electricity with 7.7% of electricity produced by coal in 2021 (SEAI, 2022). However, the previous programme for government called for a review of options to replace coal with low carbon alternatives within a decade as reflected in the CAP (2019). Gas imports have increased due the decline in production of the Corrib gas field, and oil imports have remained steady (SEAI, 2022).

The Energy White Paper, Ireland's Transition to a Low Carbon Energy Future 2015-2030 (Department of Communications, Energy & National Resources, 2015) sets out a framework to guide policy and actions that the government intends to take in the energy sector. The paper notes that "There will be substantial increases in the cost of carbon in the short and medium term, through the EU Emissions Trading Scheme". The biogas produced by the proposed development will reduce dependence on imported fossil fuels and add to financial autonomy and energy stability in Ireland, further emphasising the need for the proposed development.

Furthermore, the EU have rewritten the energy policy framework in the Clean Energy for all Europeans Package 2019 (European Commission, 2019a). Member states must meet new commitments to improve energy efficiency and the take-up of renewables in their energy mix by 2030. This EU policy framework encourages energy security for all EU member states, emphasising a need for renewable energy and a move away from fossil fuels.

2.8.2 Reduce Agricultural Sector Emissions

Agricultural GHG emissions are generated from enteric fermentation which is methane generated by digestion in livestock), manure management and fertilisers added to soils. In 2023, this sector contributed 37.7% of Ireland's total emissions (c20.8 Mt CO₂eq). In 2023, methane accounted for 72.1% of agricultural sector emissions, carbon dioxide accounted for 6.6% of agricultural sector emissions (Government of Ireland, 2024c). According to 2025 data on the EPA website, 11.9% of Irelands agricultural emissions are derived from manures which was 2.47 Mt CO₂eq. Chemical nitrogen use is responsible for approximately 40% of nitrous oxide emissions on Irish farms, and over 50% of that is in the dairy sector (Department of Agriculture, Food and the Marine, 2020).

The Agricultural Sectoral Emission Ceiling for Ireland is 96 Mt CO₂eq for the period 2026-2030 (Department of the Environment, Climate and Communications, 2022b). The target under the Climate Action Plan is a 25% decrease in agricultural emissions by 2030.

Progress is being made as evidenced by a reduction in agricultural emissions since 2021, which is attributed to a drop in nitrogen fertiliser purchased by Irish farmers (Government of Ireland, 2025b). A further decrease is required as a key target of CAP25, that is a reduction to 325,000 tonnes by 2030 with an interim target of 350,000 tonnes by 2025. According to CAP 25 (Government of Ireland, 2025b), this has been achieved.



There is c.70 million tonnes of manure generated in Ireland annually, of which circa 41 million tonnes is stored in slatted tanks (located beneath winter cattle housing). The proposed development will borrow 663,000 tonnes of manures (<1% of national manure arisings) to generate renewable biomethane. This will support c.300 farmers to reduce agricultural emissions from improved management of feedstocks to spreading an improved product. Manures have a methane potential of 30% methane per tonne. If all manures in slatted tanks alone in Ireland was used to generate biomethane there is potential for 12 TW renewable biomethane generation. This shows there is capacity in Ireland for 60 facilities of this size.

The proposed development will generate an estimated 41,250,000 Nm³/a of raw biogas, 23,500,000 Nm³/a of biomethane and 30,000 tpa. of liquefied CO₂. This is equivalent to 181,000 t CO₂eq.

The Applicant ran an 18-month campaign to identify suitable feedstock suppliers that could provide the feedstock mix required. The Applicant visited farms, collected samples, conducted interviews and identified potential suppliers. The supplier gross list must be greater than the maximum feedstock requirement to ensure availability of feedstock across seasons and farm practices such as for example changing herd sizes. The Applicant has letters of intent for 1.9 M t of feedstock from 650 no. farms. The anaerobic digestion process operates on a feedstock mix to ensure optimal biomethane generation as shown in Table 3.4 of Chapter 3 of this EIAR. The Applicant will retain the ability to change this mix to ensure a balanced feedstock mix that achieves the operating requirement. The average feedstock mix is shown in **Error! Reference source not found.** Greengate Biogas 001 Ltd. will enter contractual arrangements with suppliers on a supply return basis, i.e. most suppliers will be obliged to take back digestate. Chapter 3 describes how the feedstocks are currently managed and the proposed management of digestate.

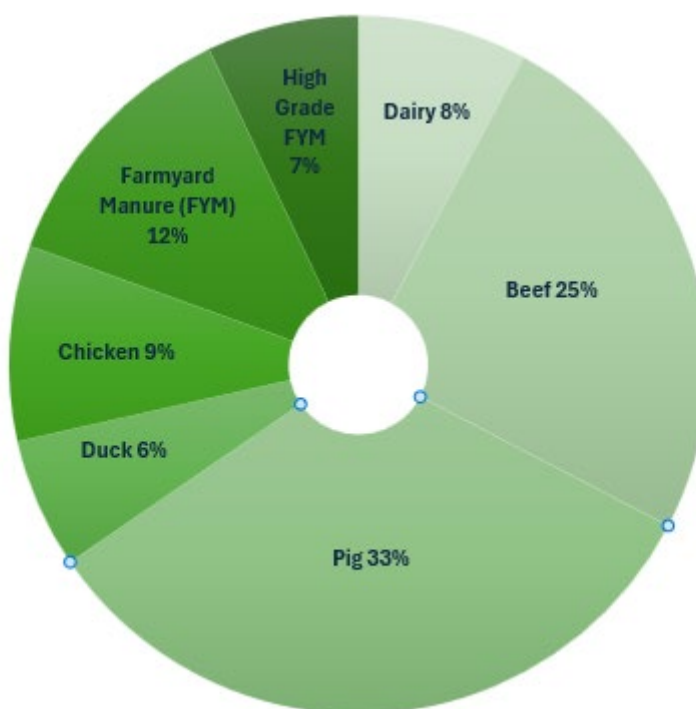


Figure 2-2: Average Feedstock Mix for Powerstown Biogas



2.8.3 Replace Chemical Fertilisers

As per Section 2.8.2, fertiliser application is a key source of agricultural GHG emissions. Agricultural activities account for over 99% of ammonia emissions. Nitrogen is in fertilisers and animal feed. Of the nitrogen deposited to land from these sources, some is lost to air as ammonia and the remainder is emitted to land. Ammonia has the potential to disrupt ecosystems, human health and water quality. Plants need nitrogen to grow and losses to the environment also means a loss of vital plant nutrients. As per various government policy, the objective is to prevent loss to environment. Digestate reduces the quantity of nitrogen losses to air and makes the nitrogen more bioavailable to plants. This in turn reduces need for chemical fertiliser and prevents losses to water.

The Climate Action Plan 2023 sets a maximum chemical nitrogen use target of 300,000 tonnes by 2030, which according to Teagasc has been achieved (Teagasc, 2023). Further reductions in GHG emissions from this source are welcome. As per Section 2.6.2, there are several pieces of legislation and supporting policy to reduce the use of chemical nitrogen fertilisers.

Agricultural advisors for Greengate Biogas recommend that for the average farmer giving feedstock to Powerstown Bioenergy and receiving digestate, or tillage farmers accepting digestate, that it could cut chemical fertiliser use by up to 50%.

2.8.4 Bioeconomy and Circular Economy

As per Section **Error! Reference source not found.**, there is significant feedstock availability in Ireland. Ireland is recognised as having a large potential to produce biomethane, due to its agriculture sector. The Government committed to deliver up to 5.7 TWh of indigenously produced biomethane by 2030, is based on agricultural feedstocks, supported by the National Biomethane Strategy.

The proposed development will contribute positively to the local, regional and national economy. County Carlow's gas demand in 2024 was 249 GWh from the national gas grid. Powerstown Bioenergy will generate 250 GWh biomethane to the national gas grid.

2.8.5 Sustainable Development

The government published the Biomethane Sustainability Charter in 2025 (Government of Ireland, 2025a). It sets out best practice guidelines to ensure anaerobic digestion is sustainable. It outlines the scope and vision for the biomethane sector, and best practices that participants in the industry should commit and adhere to during plant design, construction and operational phases of production.

2.8.6 Renewable Heat Obligation

The Irish Government has agreed to the introduction a Renewable Heat Obligation (RHO), as measure to support the need to decarbonise the heat sector.

Currently, Ireland imports most of its fossil fuels and the heating sector is a significant contributor to Ireland's high energy import dependency. The introduction of the RHO will incentivise suppliers of fossil fuels, used for heat, to ensure a proportion of the energy they supply is from a renewable source, and contribute to a reduction in emissions in line with Ireland's climate ambitions. The RHO will also help reduce our reliance on imported fossil fuels and strengthen our energy security due to greater diversification of our energy streams. The RHO will be key for Ireland's biogas industry and achieving ambitious climate targets.



2.9 Summary

This chapter establishes the need for the proposed development. It demonstrates that the proposed development is required to meet the policies, objectives and legislation of relevant and significant international, European, national and local policy. The chapter summaries the legislation and policy that supports a move to renewable energy technologies and a reduction in greenhouse gas emissions.

Ireland faces legally binding obligations to reduce greenhouse gas emissions by 51% by 2030 and to achieve climate neutrality by 2050, alongside urgent requirements to decarbonise the heat, transport, electricity and agricultural sectors. National strategies—including the Climate Action Plan, the Climate Action and Low Carbon Development (Amendment) Act 2021, the National Biomethane Strategy, and the National Planning Framework—identify indigenously produced biomethane as a critical component of Ireland's decarbonisation pathway and energy security strategy. Ireland is committed to meeting International and European targets and if these targets are not met the government must purchase Carbon Credits to meet compliance with both emissions and renewable energy targets or face fines from the EU

Powerstown Biogas directly contributes to the national target of up to 5.7 TWh of biomethane by 2030, while simultaneously addressing multiple policy priorities: reducing dependence on imported fossil gas, supporting rural diversification, enabling circular management of agricultural residues, lowering agricultural emissions, and providing renewable energy to meet regional and national demand. The project also aligns with EU climate legislation, the European Green Deal, and the Farm to Fork Strategy, all of which emphasise renewable gas, sustainable agriculture, and the transition to a circular bioeconomy.

By converting 660,000 tonnes of agricultural residues into renewable biomethane, biogenic CO₂ and nutrient rich digestate, the proposed development will deliver measurable climate benefits, enhance Ireland's energy resilience, reduce use of chemical fertilisers and support hundreds of farms in adopting more sustainable manure management practices. The redevelopment of a former quarry site further ensures efficient land use consistent with national planning objectives.

Overall, Powerstown Biogas represents a strategically important, policy aligned, and environmentally necessary development that will make a meaningful contribution to Ireland's climate targets, energy security, rural economy, and transition to a low carbon, circular bioeconomy.



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