Appendix 16.1
Climate Change Policy Review

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EIAR: Appendix 16.1 Policy Review

NP12645
Rev5
July 2024

rpsgroup.com

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
Rev0	Internal review	ST	AP		
Rev.03	Draft Issue	ST	AP	AP	24/11/2023
Rev 1	Final Issue	ST	AP	AP	21/12/2023
Rev 2	Final Issue – inclusion of CAP 24	ST	SM	AP	18/01/2024
Rev 4	Final Issue – inclusion of Ireland's long-term Strategy on GHG Emissions Reduction	ST	AP	AP	04/07/2024

Approval for issue

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National Energy and Climate Change Policy and Legislation

National Policy Position on Climate Action and Low Carbon Development (2014)

1.1 The National Policy Position on Climate Action and Low Carbon Development was published on the 23 April 2014. The policy sets a fundamental national objective to achieve the transition to a competitive, low-carbon, climate-resilient and environmentally sustainable economy by 2050. The policy states that greenhouse gas (GHG) mitigation and adaptation to the impacts of climate change are to be addressed in parallel national strategies – respectively through a series of mitigation plans and a series of climate change adaptation frameworks.

1.2 The National Policy Position envisages that development of national mitigation plans will be guided by a long-term vision of low carbon transition, including achieving *'an aggregate reduction in CO_2 emissions of at least 80% (compared to 1990 levels) by 2050 across the electricity generation, built environment and transport sectors',* in line with broader EU objectives.

1.3 In January 2018, Ireland's first statutory National Adaptation Framework (NAF) was published, which has been developed under the Climate Action and Low Carbon Development Act 2015. As laid out in the National Policy Position, the aim of the NAF is to build upon the work carried out under Ireland's first non-statutory National Climate Change Adaptation Framework (NCCAF) which was published in 2012. The NCCAF framework aimed to ensure that adaptation actions are carried out across key sectors and at local level to reduce the country's vulnerability to climate change. The NAF outlines a governmental and societal approach to climate adaptation in Ireland, setting out a national strategy to reduce the vulnerability of Ireland to the adverse effects of climate change and to take advantage of positive impacts.

Climate Action and Low Carbon Development Act 2015

1.4 The Climate Action and Low Carbon Development Act 2015 ensures developments are compliant in pursuing the transition to a low carbon, climate resilient and environmentally sustainable economy. Section 15 provides the following obligations:

- "*15. (1) A relevant body shall, in so far as practicable, perform its functions in a manner consistent with—*

  (a) the most recent approved climate action plan,

  (b) the most recent approved national long term climate action strategy,

  (c) the most recent approved national adaptation framework and approved sectoral adaptation plans,

  (d) the furtherance of the national climate objective, and

  (e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State."

1.5 The Climate Action Plan 2024, Ireland's Long-term Strategy on Greenhouse Gas Reduction 2024, and National Adaptation Framework: Planning for a Climate Resilient Ireland 2024 are the most recent plans at the time of writing, and are detailed within sections below.

Climate Action and Low Carbon Development (Amendment) Act 2021

1.6 The 2021 Amendment Act builds on the Climate Action and Low Carbon Development Act 2015, embedding the process of setting ambitious and binding emissions-reduction targets in law. In addition, the Act provides for a national climate objective, which commits the State to pursue and achieve no later than 2050, the transition to a climate resilient, biodiversity-rich, environmentally sustainable and climate-neutral economy. The Act provides that the first two five-year carbon budgets proposed by the Climate Change Advisory Council should equate to a total reduction of 51% over the period to 2030, relative to a baseline of 2018.

1.7 Ireland's 2030 target under the EU's Effort Sharing Regulation (ESR) is to deliver a 30% reduction in emissions compared to 2005 levels by 2030. There are also annual binding emission allocations over the 2021-2030 period to meet that target.

1.8 The Climate Action and Low Carbon Development (Amendment) Act 2021 provides for the establishment of carbon budgets to support in achieving Ireland's climate ambition. The carbon budget programme, comprising three five-year budgets came into effect on 6 April 2022 for the following periods:

- Budget 1 from 2021-2025 has been set at 295 $MtCO_2e$ (Million tonnes of Carbon dioxide equivalent) representing an average of 4.8% reduction per annum for the first budget period.
- Budget 2 from 2026-2030 has been set at 200 $MtCO_2e$ representing an average of 8.3% reduction per annum for the second budget period.
- Budget 3 from 2031-2035 has been set at 151 $MtCO_2e$ representing an average of 3.5% reduction per annum for the third provisional budget.

1.9 To deliver these targets, in July 2022 the Government established Sectoral Emissions Ceilings which set maximum limits on GHG emissions for each sector of the Irish economy to the end of the decade. For electricity, the 2030 ceiling is 3 $MtCO_2e$ which represents a 75% reduction on 2018 levels (10 $MtCO_2e$). For the industry, the 2030 ceiling is 4 $MtCO_2e$ which represents a 35% reduction on 2018 levels (7 $MtCO_2e$).

1.10 Consistent with the Carbon Budgets, Emissions Ceilings are also provided within the budget periods:

- Budget Period 1 from 2021-2025 has been set at 40 $MtCO_2e$ for the electricity sector, and 30 $MtCO_2e$ for the industry sector.
- Budget Period 2 from 2026-2030 has been set at 20 $MtCO_2e$ for the electricity sector, and 24 $MtCO_2e$ for the industry sector.

1.11 Further details are provided in the September 2022 Sectoral Emissions Ceilings Summary Report (Government of Ireland, 2022) and the Climate Action Plan 2024 (Government of Ireland, 2024a).

Climate Action Plan 2021 (CAP21)

1.12 The Climate Action Plan 2021 (CAP21) contains data centre-specific policies. According to document figures, it is forecasted that the data centre sector is expected to grow by up to 9 TWh (terawatt-hours) by 2030, which would result in the sector consuming around 23% of the country's total energy demand. As a result of this, the CAP21 states that *'the government will review its strategy on data centres to ensure that the sector will be in alignment with sectoral emissions ceilings and support renewable energy targets* [62%-81% reduction in emissions by 2030]*'*. Please see paragraph 1.41 for the Government's statement of the role of data centres.

1.13 The CAP21 recognises that *'the forecast growth of data centres clearly represents a challenge to Ireland's emissions targets. To deal with this, the government will review its strategy on data centres to ensure that growth of such users can only happen in alignment with our sectoral*

emissions ceilings and renewable energy targets. The impact of data centre growth on security of supply will also be considered. Further regulatory measures will be considered to manage demand from large users, such as data centres, in the context of climate targets and future network needs.'

1.14 *'Unlocking the flexibility of large electricity demand users will be a key challenge as the electricity system is decarbonised. Energy demand, including data centres, will be expected to operate within sectoral emissions ceilings and further signals will be required to locate demand where existing or future electricity grid is available and close to renewable energy generation. Research and development (such a science challenge to industry), to put Ireland on a pathway to net-zero-carbon data centres, will be required.'*

1.15 Section 12.3.3 describes the Sustainable Energy Authority Ireland (SEAI) Initiatives which the CAP21 supports, being:

- *'The Large Industry Energy Network (LIEN), a network of 199 of Ireland's largest energy users (some of which are in the EU ETS), together consume 21% of the entire energy demand in Ireland. LIEN members are companies with an annual energy spend of €1 million or more. These are supported by SEAI through mentoring, energy management systems, training and networking, and compliance with legal requirements. Through SEAI, we will continue to support and promote decarbonisation by the members of this network.*
- *Investments by enterprises in energy efficiency increase their competitiveness, protect the environment, boost their reputation and elevate their branding. Through SEAI, we will continue to support energy audits, provide free training for businesses and provide financial supports to those who want to invest in energy efficiency, particularly SMEs.*
- *SEAI will continue to expand the Excellence in Energy Efficient Design (EXEED) Programme to deliver new best practices in design, construction, and commissioning processes for new investments and upgrades to existing assets, with the focus now on greenhouse gas emissions reductions.*
- *Through the Government-funded Support Scheme for Renewable Heat, SEAI will continue to support the adoption of renewable heating systems by commercial and industrial heat users not covered by the EU ETS.'*

1.16 Section 13.3.3: Decarbonising Our Commercial Buildings, includes measures to support and incentivise the increased energy efficiency and decarbonisation of commercial buildings, such as:

- *'Continuing to develop and implement a suite of services such as energy audits, technical supports, training and advice.*
- *Acting on the outcome of the SEAI's National Heat Study, which will inform the development of targeted future policies and supports for the commercial building sector.*
- *Providing capital funding which, subject to the availability of Exchequer resources, will support the decarbonisation of the commercial buildings sector.*
- *Implementing a revised Energy Efficiency Obligation Scheme (EEOS) from 2022, to support energy users (financially or otherwise) to implement energy saving practices or to carry out energy upgrades on their properties.'*

1.17 The CAP21 has also set a target of achieving at minimum a 10% (and up to 60%) decrease in embodied carbon in construction materials.

Climate Action Plan 2023 (CAP23)

1.18 The Climate Action Plan 2023 (CAP23) provides a detailed plan for taking decisive action to achieve a 51% overall reduction in Ireland's greenhouse gas emissions by 2030 (from a 2018 baseline) and carbon neutrality by 2050. Ireland's national climate objective and 2030 targets are aligned with Ireland's obligations under the Paris Agreement, to set the long term goal to limit

warming to below 2°C above pre-industrial levels, and to pursue efforts to limit the temperature increase to 1.5°C.

1.19 The CAP23 states '*decarbonised gases such as biomethane and green hydrogen are a critical component for Ireland's energy ecosystem'* and recognises they *'provide a decarbonisation pathway for combustion emissions arising [from] medium and high temperature processes'.*

1.20 The Plan also sets key targets for the decarbonisation of the energy sector. It has targeted that renewable energy will account for 50% of the energy share by 2025, with this target increasing to 80% by 2030.

1.21 It recognises that '*as electrification and decarbonisation of the other sectors continues, there will be an increase in electricity demand and a transferring of emissions from those sectors to the electricity sector. Limiting peak demand when renewable resources are unavailable, through improved flexibility and demand management, will be vital… In the short- and medium-term, new demand growth from large energy users, such as data centres, will have to be moderated to protect security of supply and ensure consistency with the carbon budget programme'.* Key measures to manage electricity demand flexibility and growth include a Demand Side Strategy, delivered by CRU with the aim of:

- *'20 to 30% of electricity demand to be flexible by 2030 (15-20% flexibility by 2025), facilitating active participation by citizens and businesses in the energy market. Large Energy Users (LEUs) will be expected to make a higher proportional contribution to the target, and a review will be carried out of the gas and electricity connection policies for new LEUs'*

1.22 The Plan identifies the need for Long Duration Storage technologies and increased zero emission gas generation as key measures for 2031-2035 to deliver abatement in electricity.

1.23 Further, the Plan lists a number of market incentives that will be developed to match electricity demand with renewable energy generation, including the following:

- *'Develop policies that support extra-large energy users to achieve carbon-free demand in Ireland so that electricity decarbonisation, demand efficiency and flexibility, and enterprise growth can go hand in hand. To include connection agreements; hybrid connections; non-firm connections where appropriate; onsite dispatchable generation; onsite storage; emissions reporting; and renewable PPAs in particular within the scope of this work;*
- *In line with the Roadmap on Corporate Power Purchase Agreements, the SEAI, the CRU[1], and the System Operators, will work with LEUs and enterprise development agencies to increase the demand flexibility of LEUs through enhanced reporting and matching of demand with usage of lower carbon energy sources, including increased transparency of emissions data, and regulatory incentives and disincentives.'*

Climate Action Plan 2024 (CAP24)

1.24 The most recent approved Climate Action Plan 2024 (CAP24), furthers what is detailed within the CAP23 (see above) by updating the strategic direction for meeting Ireland's climate targets. The CAP24 highlights that estimated emissions reductions fall short of the level of abatement required to meet national and international targets. Corrective actions by sector are detailed, and include the acceleration of renewable electricity generation, and increased focus on the decarbonisation of cement and construction.

1.25 Consistent with CAP23, CAP24 states *'decarbonised gases such as green hydrogen and biomethane can provide a decarbonisation pathway for reducing emissions arising from medium and high temperature processes'.* Additional focus is given to the importance of green hydrogen,

[1] Commission for the Regulation of Utilities

which *'represents a distinct longer-term pathway for zero-emission gas in Ireland'* and will play an important role in decarbonising Ireland's energy system.

1.26 The Plan sets key targets for the decarbonisation of the energy sector. Consistent with CAP23, CAP24 has targeted that renewable energy will account for 50% of the energy share by 2025, with this target increasing to 80% by 2030. *'The EPA* [Environmental Protection Agency] *projects that the electricity sector emissions are currently not aligned to Climate Action Plan 2023 (CAP23) pathways and targets. The projections forecast an overshoot of ~5.2 $MtCO_2$eq. in the period 2021 to 2025, and ~8.2 $MtCO_2$eq. in the period 2026 to 2030'.*

1.27 *'Achieving further emissions reductions between now and 2030 requires a major step up across three key measures:*

- *Accelerate and increase the deployment of renewable energy to replace fossil fuels;*
- *Deliver a flexible system to support renewables and demand;*
- *Manage demand'.*

1.28 Increasing the deployment of renewable energy will be achieved through measures such as increasing grant funding for non-utility scale generation and community projects, investment in transmission and distribution systems, deliver streamlined electricity generation grid connection policy and process, and enhancing green hydrogen production from renewable electricity surplus generation.

1.29 Accelerating the delivery of a flexible system will be achieved through new flexible gas-fired power generation, increase deployment of medium to long-term storage technologies, and establish a competitive market needed to deliver zero carbon system services.

1.30 Regarding managing electricity demand, this will be achieved by increasing flexibility of the electricity system, with measures to incentivise Large Energy Users (such as the Project) to increase the flexibility in their electricity demand thereby enabling low/zero carbon demand growth. Power demand by data centres was highlighted within CAP24, which states that there should be a potential focus on managing energy demand from such users.

1.31 The plan details recommendations for decarbonisation of the industrial sector, including through pairing low-carbon power supply with onsite energy storage or renewable self-generation. Together this should contribute to electricity demand response and flexibility. It also sets out how embodied carbon in construction materials, in particular concrete and steel, should be reduced, alongside optimised design and modern methods of construction.

1.32 Industrial energy efficiency is also a key element of the action plan, including development of energy management systems for Large Energy Users.

1.33 The Plan also details recommendations for decarbonisation of the built environment, with focus on the expansion of district heating networks, biomethane production, and increased energy efficiency.

UN Climate Change Conference of Parties (COP27) (2022)

1.34 The CoP are (typically) annual climate summits, attended by world leaders globally, where the effects of measures introduced to limit climate change are discussed.

1.35 At the COP26 summit in November 2021, parties voted to adopt the draft COP26 report (United Nations Framework Convention on Climate Change (UNFCC), 2021), known as the Glasgow Climate Pact. This included commitments to phase down the use of coal and supports a common timeframe and methodology for national commitments on emissions reductions. Countries were tasked to return in 2022 with more ambitious 2030 emissions reductions targets.

1.36 However, the COP27 summit in November 2022 made very little progress on emissions reduction ambitions made at COP26. Global ambition could limit warming 2°C, but targets are not being sufficiently backed by action.

1.37 Instead, COP27 saw progress on agreements to establish a loss and damage fund to assist developing countries that are particularly vulnerable to the adverse effects of climate change to address impacts which cannot or have not been adapted to. Some progress was made with regards to adaptation to climate change, and nature-based solutions.

National Development Plan 2021-2030 (2021)

1.38 The National Development Plan sets out the Government's over-arching investment strategy and budget for the period 2021-2030. Chapter 3 focuses on climate action and the environment, specifically section 3.7: Investing for low carbon, resilient electricity systems, states the following:

- *'The NDP Review commits to increasing the share of renewable electricity up to 80% by 2030. This is an unprecedented commitment to the decarbonisation of electricity supplies. To put this figure in some perspective, onshore wind generation capacity in Ireland stood at 4.1GW at end 2019.'*
- *'In tandem with this grid-scale renewable electricity, the NDP Review commits to the creation of a Microgeneration Support Scheme whose primary aim is to incentivise citizens and businesses to produce and consume their own electricity. It will include a guaranteed payment for the export of excess electricity to the grid.'*

1.39 Chapter 13, Strategic Investment Priorities – Energy states:

- *'The use of energy for the purposes of electricity, heat and transport generates almost 60% of Ireland's greenhouse gas emissions. 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. This will require a fundamental shift in the means by which we supply, store and use energy. We need to plan our energy system as a whole to create greater links between different energy carriers (such as electricity and hydrogen); infrastructures; and consumption sectors (such as transport and heating). The long-term objective is to transition to a net-zero carbon, reliable, secure, flexible and resource-efficient energy services at the least possible cost for society by mid-century.'*
- *'At the same time, rapidly increasing electricity demand from large energy users, as well as the electrification of end user sectors such as transport and heating, presents a significant challenge. Electricity demand from large energy users, including data centres is forecast to grow to up to 27% of total power demand in 2030.'*

Project Ireland 2040 National Planning Framework (2019)

1.40 Project Ireland 2040 is the Government's long-term overarching strategy to build a more resilient and stable future. The strategy is a planning framework to guide development and investment, and ensures the alignment of investment plans with National Strategic Outcomes as stated within the framework.

1.41 With regards to data centres, the Framework details the following: *'Ireland is very attractive in terms of international digital connectivity, climatic factors and current and future renewable energy sources for the development of international digital infrastructures, such as data centres. This sector underpins Ireland's international position as a location for ICT and creates added benefits in relation to establishing a threshold of demand for sustained development of renewable energy sources. There is also greater scope to recycle waste heat from data centres for productive use, which may be off-site.'*

Ireland's Long-term Strategy on Greenhouse Gas Emissions Reduction (2024)

1.42 Ireland's Long-term Strategy on Greenhouse Gas Emissions Reduction (Government of Ireland, 2024b) has been prepared to meet national, European Union, and international law, and is consistent with the Climate Action Plan 2024 (Government of Ireland, 2024a).

1.43 The Strategy sets out indicative pathways, beyond 2030, towards achieving carbon neutrality for Ireland by 2050. The Strategy provides a pathway to a whole-of-society transformation and links shorter-term Climate Action Plans and Carbon Budgets, and the longer-term objective of the European Climate Law and Ireland's National Climate Objective.

1.44 The Strategy states that *"the exact pathways to achieving longer term sectoral targets will evolve over time, as some technologies mature and become more cost-effective in response to innovation and increased investment, or as new technologies emerge,,, reaching climate neutrality will require Ireland's carbon dioxide emissions from fossil fuel energy use in power generation, heating, and transport to reduce effectively to zero".*

1.45 The Strategy details pathways to climate neutrality by sector, building upon the decarbonisation pathways detailed within the Climate Action Plan 2024 (Government of Ireland, 2024a). Key points in relation to the electricity and built environment sectors are detailed below, as these are of most importance to the Project.

1.46 With regards to the electricity sector, the Strategy states that "*the core measures necessary to deliver a net zero emissions electricity sector are to deliver significantly higher renewable power capacity mostly through onshore wind, offshore wind and solar PV".* This should be accompanied with the following measures to enable the grid to function with high levels of intermittent sources of power:

- Power storage: long duration storage technologies such as battery storage and the storage of renewable power as gas (e.g. green hydrogen); and
- Power to gas: conversion of electrical power into renewable gases.

1.47 Data centres *"will be expected to operate within sectoral emissions ceilings"*, and energy storage and flexibility will be a requirement to ensure Ireland is on a pathway to net zero carbon data centres.

1.48 With regards to the built environment, the Strategy highlights the importance of promoting the use of lower carbon alternatives in construction.

1.49 The circular and bioeconomy are detailed within the Strategy, which states that patterns of consumption must change in order to reduce the amount of waste produced as an economy I "*in the circular economy, resources are kept in use for as long as possible, the maximum value is extracted from them while in use before residual resources are then recovered and regenerated into new products and materials at the end of each lifecycle. The circular economy is, therefore, an inherently regenerative system, which minimises or avoids the emissions and other negative environmental impacts associated, by replacing linear lifespan with a closed loop for materials".* The bioeconomy is a component of the circular economy, and relates to the production of renewable biological resources such as bio-energy.

1.50 The Strategy includes detail on climate risk and adaptation, and identifies the most immediate climate risks to Ireland are associated with changes in extremes, such as droughts, floods, precipitation and storms.

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

1.51 The statutory National Adaptation Framework (NAF) sets out a national adaption strategy which aims to reduce the vulnerability of Ireland's economy and society to the impacts of climate change. It outlines how various sectors and local authorities can implement adaptation measures to minimise Ireland's vulnerability to climate change's adverse effects while taking advantage of any beneficial impacts. The NAF emphasises the importance of integrating adaptation strategies into all levels of policy making, infrastructure development, and local planning.

1.52 The Framework highlights that Environmental Impact Assessments (EIA) should integrate the consideration of climate resilience within the design and implementation of a development scheme.

1.53 Key guiding principles included within the NAF regarding adaptive design and planning include the following:

- "*Avoiding Maladaptation: Ensure that adaptation actions do not inadvertently create new vulnerabilities or exacerbate existing ones*";
- "*Sustainability: Ensure that adaptation measures promote long-term sustainability, minimising negative environmental and social impacts*";
- "*Ecosystem-based / nature-based options for adaptation: Employ ecosystem based or nature-based adaptation options, to reflect the biodiversity-rich ambition of the national climate objective*";
- "*Consideration of Climate Mitigation: Ensure that climate mitigation outcomes are considered alongside adaptation planning where appropriate*"; and
- "*Integrated Approach: Adopt a holistic, cooperative, and cross-sectoral approach that considers the interconnectedness of climate change impacts and adaptation measures*".

Sectoral Adaptation Planning (2020)

1.54 The Government of Ireland developed 12 Sectoral Adaption Plans (SAPs) under the National Adaption Framework. The plans outline how the different sectors must prepare for and adapt to the risks associated with climate change. The plans currently available and relevant to the Project are summarised below. It should be noted that revised and/or new SAPs are currently being developed under Ireland's second statutory NAF (Government of Ireland, 2024c).

1.55 The Electricity & Gas Networks Sector Climate Change Adaptation Plan has identified the following risks to electricity and gas networks:

- The main risk to transmission systems will be from flooding and high wind speeds. Temperature rise and extreme high temperatures may also impact asset lifetime and equipment ratings;
- Increased occurrence of storms and high winds may reduce the generation capacity for wind farms;
- The effects of climate change may impact the levels of degradation of critical gas assets that are above ground, thereby reducing the lifetime of assets and increasing the frequency of refurbishment and replacement. The gas transmission network is largely resilient to weather events as it is an underground network. However, an increase in extreme flood events may impact transmission pipelines;
- Conventional electricity generation uses significant amounts of water in their cooling systems, which may become increasingly under pressure due to drought and water shortages; and

- Elevated temperatures are likely to reduce the output capacity of gas-fired combustion turbines.

1.56 The following measures have been identified to adapt to such risks:

- Increased resilience in the electricity network should be achieved through the diversification of generation sources, including the greater deployment of solar PV and increased flexibility of the grid through the installation of battery storage systems;
- Increased production of biomethane to be injected into the natural gas grid;
- Gas networks should have *'on-going adherence to all relevant Irish and European gas standards when designing and planning assets noting that these standards have in-built tolerances which ensure that gas infrastructure is capable of comfortably enduring severe weather events'* that may arise as a result of climate change; and
- Further consideration of weather events in the planning and design of new electricity generation infrastructure should be considered.

1.57 The Communications Sector Climate Change Adaptation Plan also highlights the impacts that extreme weather events may have in the immediate future on the communications sector and the importance of ensuring climate-proofing in strategic emergency planning. The following risks to communications have been identified:

- Overhead copper and fibre lines suspended on poles are the most exposed section of the electronic communications network, as such they are most at risk from extreme storm events and high winds;
- Underground fibre cabling may be at risk from increased incidence of flooding; and
- Extreme weather events may inhibit access to remote infrastructure, delaying possible maintenance or repair work.

1.58 The following measures have been identified to adapt to such risks:

- Consideration of weather events and climate change trends in the planning and design of new infrastructure (i.e. accounting for increased possibility of flooding);
- Where underground network infrastructure is requried to be constructed within flood plains, particular consideration should be given to mitigating any potential damage caused by flooding;
- Detailed identification of vulnerable areas where exiting critical transmission and distribution infrastructure is located; and
- Monitoring and inventory of overhead lines to minimise potential damage caused by extreme weather events.

Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy (2022)

1.59 The Government's statement of the role of data centres in Ireland's enterprise strategy sets out the following 'Principles for Sustainable Data Centre Development' which are intended to be used as a set of national principles that should inform and guide decisions on future data centre development.

- '***Economic Impact*** *-The Government has a preference for data centre developments associated with strong economic activity and employment.*
- ***Grid Capacity and Efficiency*** *- The Government has a preference for data centre developments that make efficient use of our electricity grid, using available capacity and alleviating constraints.*

- ***Renewables Additionality*** *- The Government has a preference for data centre developments that can demonstrate the additionality of their renewable energy use in Ireland.*
- ***Co-Location or Proximity with Future-Proof Energy Supply*** *- The Government has a preference for data centre developments in locations where there is the potential to co-locate a renewable generation facility or advanced storage with the data centre, supported by a Corporate Power Purchase Agreements, private wire or other arrangement.*
- ***Decarbonised Data Centres By Design*** *- The Government has a preference for data centres developments that can demonstrate a clear pathway to decarbonise and ultimately provide net zero data services.*
- ***SME Access and Community Benefits*** *- The Government has a preference for data centre developments that provide opportunities for community engagement and assist SMEs, both at the construction phase and throughout the data centre lifecycle*.'

Irish Academy of Engineering: Electricity Sector Investment for Data Centres in Ireland (2019)

1.60 The note on Electricity Sector Investment for Data Centres in Ireland details the projected growth in Ireland's electricity demand and associated increase in carbon emissions. '*As 30% of the projected data centre electricity demand is assumed to be produced from thermal generation this will result in significant additional carbon emissions. For the purposes of this analysis, it is assumed that this generation will be predominantly supplied from highly efficient gas-fired combined cycle gas turbine units, but emissions could be significantly higher if the use of oil fired open cycle gas turbines is necessary. On the basis of these assumptions data centre development is projected to add at least 1.5 million tonnes to Ireland's carbon emissions by 2030 – about a 13% increase on electricity sector emissions at present*'.

Other Regulations

Climate Neutral Data Centre Pact - Self-Regulatory Initiative Policy Proposal

1.61 The Climate Neutral Data Centre Pact is a pledge in response to the European Green Deal that aims to ensure data centres are an integral part of the sustainable future of Europe. Data centre operators and trade associations can be signatories to the pact, meaning they agree to take the following actions to make data centres climate neutral by 2030:

1.62 **Energy Efficiency:** ***'****Data centres and server rooms in Europe shall meet a high standard for energy efficiency, which will be demonstrated through aggressive power use effectiveness (PUE) targets':*

- '*By January 1, 2025 new data centres operating at full capacity in cool climates will meet an annual PUE target of 1.3, and 1.4 for new data centres operating at full capacity in warm climates*.'

1.63 **Clean Energy:** *'Data centres will match their electricity supply through the purchase of clean energy'*

- '*Data centre electricity demand will be matched by 75% renewable energy or hourly carbon free energy by December 31, 2025 and 100% by December 31, 2030*'.

1.64 **Water:** *'Data centres at full capacity will meet a high standard for water conservation, demonstrated through the application of a location and source sensitive water usage effectiveness (WUE) target.'*

- *'By January 1, 2025 new data centres at full capacity in cool climates that use potable water will be designed to meet a maximum WUE of 0.4 L/kWh in areas with water stress.*
- *The limit for WUE can be modified based on climate, stress and water type to encourage the use of sustainable water sources for cooling'.*

1.65 **Circular Economy: '***The reuse, repair and recycling of servers, electrical equipment and other related electrical components is a priority for data centre operators*'

- *'Data centres will set a high bar for circular economy practices and will assess for reuse, repair, or recycling 100% of their used server equipment.*
- *Data centre operators will increase the quantity of server materials repaired or reused and will create a target percentage for repair and reuse by 2025.'*

1.66 **Circular Energy System:** *'The reuse of data centre heat presents an opportunity for energy conservation that can fit specific circumstances. Data centre operators will explore possibilities to interconnect with district heating systems and other users of heat to determine if opportunities to feed captured heat from new data centres into nearby systems are practical, environmentally sound and cost effective.'*

Towards Nearly Zero Energy Buildings in Ireland - Planning For 2020 And Beyond (2012)

1.67 This outline plan recognises the significant energy use and CO_2 emissions associated with the built environment and the importance in achieving nearly zero energy buildings. Nearly zero-energy building is defined by Directive 2010/31/EU as: *'a building that has a very high energy performance, as determined in accordance with Annex I. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby*'.

Local Energy and Climate Change Policy

Kildare County Development Plan 2023-2029

1.68 This Development Plan sets out an overall strategy for the proper planning and sustainable development of County Kildare. It has been prepared having regard to those matters that must be included in a County Development Plan (i.e. mandatory objectives) as well as those matters that may be included (discretionary objectives) as required by the Planning and Development Acts 2000 (as amended). The main mandatory objective of the Planning Acts that are mentioned in the Plan and relevant to the Project is as follows:

- *'Promotion of sustainable settlement and transportation strategies, including measures to reduce energy demand, greenhouse gas emissions and address the necessity of adaptation to climate change in particular having regard to the location, layout and design of new development.'*

1.69 The key principles for the Development plan which are relevant to the Project are as follows:

- *'To develop a county that is resilient to climate change, plans for and adapts to climate change and flood risk, facilitates a low carbon future, supports energy efficiency and conservation, and enables the decarbonisation of our lifestyles and economy;*
- *To support, facilitate and promote the sustainable development of renewable energy sources in the county.'*

1.70 **Chapter 4 Resilient Economy and Job Creation** has the overarching aim to '*provide for the future well-being of the residents of the county by creating a strong and resilient economic base,*

providing expanded opportunities for employment and facilitating a good quality of life within vibrant and attractive places to live, work, visit and invest'.

1.71 **Objective RE 071** – It is an objective of the Council to '*require data centres to consider the use of sustainable renewable sources of energy to fuel their operations in whole in the first instance or in part (minimum of 30%) where this is not possible and where it has been satisfactorily demonstrated not to be possible, subject to all relevant and cumulative environmental assessments and planning conditions*'.

1.72 **Chapter 7 Energy and Communications** has the overarching arching aim to *'encourage and support energy and communications efficiency and to achieve a reasonable balance between responding to EU and National Policies on climate change, renewable energy and communications and enabling resources to be harnessed in a manner consistent with the proper planning and sustainable development of the county'.*

1.73 **Policy EC P1** - It is the policy of the Council to *'reduce our carbon footprint in line with national targets for climate policy mitigation and adaptation objectives, as well as targets for greenhouse gas emission reductions.'*

1.74 **Objective EC O1** – It is an objective of the Council to *'ensure that energy intensive sectors incorporate significant renewable energy sources to reduce their carbon footprint.'*

1.75 **Objective EC O3** - It is an objective of the Council to *'support initiatives for limiting emissions of greenhouse gases through energy efficiency and the development of renewable energy sources which make use of the natural resources in an environmentally and socially acceptable manner.*'

1.76 **Objective EC O4** – It is an objective of the Council *to 'support infrastructural renewal and development of electricity and gas networks in the county, subject to safety and amenity requirements.'*

1.77 **Objective EC O5** - It is an objective of the Council to *'support and encourage the sustainable development of renewable energy auto production units (the production of energy primarily for on-site usage) for existing and proposed developments in line with relevant design criteria, amenity and heritage considerations and the proper planning and sustainable development of the area.'*

1.78 **Policy EC P18** - It is a Policy of the Council to *'support the accommodation of Data Centres at appropriate locations in line with the objectives of the National Planning Framework and the principles for Sustainable Data Centre Development of the Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy (July 2022) subject to appropriate Transport, Energy and Environmental Assessments and all relevant planning conditions.'*

1.79 **Objective EC O61** – It is an objective of the Council to *'require data centres to include strong energy efficiency measures to reduce their carbon footprint in support of national targets towards a net zero carbon economy, through the use of sustainable sources of energy generation in the first instance and then the use of renewable sources of energy to power their operations, where on site demand cannot be met in this way, to provide evidence of engagement with power purchase agreements (PPA) In Ireland. All data centre developments shall provide evidence of sign up to the Climate Neutral Data Centre Pact.'*

1.80 **Objective EC O62 -** It is an objective of the Council to ensure *'all data centre development applications shall have regard to the DECLG guidance document 'Towards nearly Zero Energy Buildings in Ireland – Planning for 2020 and Beyond', which promotes the increase of near Zero Energy Buildings (nZEB).*'

1.81 **Objective EC O63 -** It is an objective of the Council to *'ensure that all significant development proposals for Data Centres are accompanied by an Energy Analysis that explores the potential for the development of low carbon district heating networks'.*

1.82 **Policy EC P19** – It is a policy of the Council to *'support the development, reinforcement, renewal and expansion of the electricity transmission and distribution grid to provide for the future physical and economic development of Kildare'.*

1.83 **Objective EC O65 -** It is an objective of the Council to ***'****support the reinforcement and strengthening of the electricity transmission and distribution network, including the installation of Battery Energy Storage System plants.'*

1.84 **Policy EC P21** – It is a policy of the council to *'support the infrastructural renewal and development of the gas networks in the county, subject to proper planning, heritage, environmental and amenity requirements'.*

Local Authority Climate Action Plan 2024-2029 (2024)

1.85 The ambition of this Plan is aligned to the Government's National Climate Objective which seeks to achieve the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy by 2050. The Climate Action and Low Carbon Development (Amendment) Act 2021 frames Ireland's legally binding climate ambition to deliver a reduction in greenhouse gas emissions by 51% by 2030. To secure this sustainable future for the citizens of Kildare, the Council has prepared this Climate Action Plan for the period 2024 to 2029 to create a low carbon and climate resilient County, by delivering and promoting best practice in climate action in Kildare.

1.86 The Plan sets out how the Council is responsible for enhancing climate resilience, increasing energy efficiency and reducing GHG emissions across its own assets, services and infrastructure, whilst also demonstrating a broader leadership role of influencing advocating and facilitating other sectors to meet their climate targets.

1.87 The Plan identifies climate hazards that may negatively impact Kildare, including an evaluation of historic climate hazards (i.e. from extreme precipitation, drought, fluvial flooding, pluvial flooding, severe windstorms and above average surface temperatures).

1.88 Future climate risks were also considered to 2060. In summary the results predict increasing average temperatures leading to increased frequency of heatwave and reduced frequency of frost, snow and ice days. Average precipitation is predicted to decrease, however more intense rainfall events and potential flooding are anticipated to increase. Average wind speed and energy are predicted to decrease slightly.

1.89 The Plan also details a baseline emissions inventory for County Kildare, totalling 1,678,583 tCO_2e (2018). The sector that generated the greatest emissions were transport, comprising 38.2% of baseline emissions.

Naas Local Area Plan 2021-2027

1.90 The Naas Local Area Plan sets out an overall local strategy for the proper planning and sustainable development for the town of Naas.

1.91 **Objective EDO 1.12** – It is an objective of the Council to '*(a) Facilitate the location of Data Centre development on land designated P: Data Centre at Caragh Road South and Jigginstown for the identified land use only subject to appropriate environmental assessments, heat mapping, transport impact assessments and consideration of the cumulative impact on the electricity network supply capacity and targeted reductions in greenhouse gas emissions. (b) Any data centre project will be required to include measures to generate energy (sustainable, then renewable in the first instance) on site as part of the overall development proposal.'*

1.92 **Objective WH 1.1** – It is an objective of the Council to '*support developments which deliver energy efficiency and the recovery of energy that would otherwise be wasted through the use of district heating systems, particularly in the Northwest Quadrant and sites designated specifically for Data*

Centres, ensuring such developments will not negatively impact upon the surrounding landscape, environment, biodiversity or local amenities.'

1.93 **Objective WH 1.2** – It is an objective of the Council to *'ensure that all significant development proposals on the sites, designated for Data Centres carry out an Energy Analysis and explore the potential for the development of low carbon district heating networks.'*

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