2. BACKGROUND TO THE PROPOSED DEVELOPMENT

This section of the Environmental Impact Assessment Report (EIAR) presents information on renewable energy and climate change policy and targets, the strategic, regional and local planning context for the Proposed Development, planning history, scoping and consultation, as well as setting out the nature of the cumulative impact assessment process undertaken.

2.1 Renewable Energy Policy and Targets

The details below set out the need for the Proposed Development to aid in Ireland meeting its national targets and European commitments in relation to climate change and decarbonisation. As is discussed throughout this chapter all of the latest projections have shown that Ireland is not set to meet its 2020 targets. Within this chapter the information is presented and assessed under the following:

- Renewable Energy Resources,
- EU Legislation,
- Progress on Targets, and,
- National Energy Projections.

The Proposed Development comprises the provision of wind turbines which will generate renewable energy and provide it for use onto the national grid. The need to decarbonise the economy and reduce emissions has always been imperative, however, in recent years the urgency involved has become clearer to all stakeholders. The Climate Action Plan published by the Government in 2019 has clearly identified the need for and urgency of change, it states:

> *"The accelerating impact of greenhouse gas emissions on climate disruption must be arrested. The window of opportunity to act is fast closing, but Ireland is way off course.... The shift in climate is bringing profound shifts of desertification, rising sea levels, displaced population, profound challenges to the natural world, and economic and social disruption. We are close to a tipping point where these impacts will sharply worsen. Decarbonisation is now a must if the world is to contain the damage and build resilience in the face of such a profound challenge."*

The primary driver behind the Proposed Development is the need to provide additional renewable energy to offset the use of fossil fuels within the electricity generating sector. Increasing electricity generation from wind power represents the most economical renewable option to reduce emissions within the power generation sector and is the most mature technology available to achieve national targets that have been established for decarbonisation. The current proposal represents the provision of a significant wind energy proposal and will contribute towards Irelands energy targets.

2.1.1 Renewable Energy Resources

Renewable energy resources include solar, wind, water (hydropower, wave and tidal), heat (geothermal) and biomass (wood, waste) energy. These sources are constantly replenished through the cycles of nature, unlike fossil fuels, which are finite resources that are becoming increasingly scarce and expensive to extract.

Renewable energy resources offer sustainable alternatives to our dependency on fossil fuels as well as a means of reducing greenhouse gas emissions and opportunities to reduce our reliance on imported fuels. These resources are abundantly available in Ireland, yet only a fraction has been tapped so far (Source: Sustainable Energy Authority of Ireland (SEAI) website, https://www.seai.ie/.

A gradual shift towards increasing our use of renewable energy resources would result in:

- Reduced carbon dioxide emissions;
- Secure and stable energy for the long-term;
- Reduced reliance on fuel imports;

- Investment and employment in our indigenous renewable energy projects; often in rural and underdeveloped areas.

Renewable energy development is recognised as a vital component of Ireland's strategy to tackle the challenges of combating climate change and ensuring a secure supply of energy. Ireland is heavily dependent on the importation of fossil fuels to meet its energy needs, with imported fossil fuels accounting for 66% of Ireland's dependency in 2017 at an estimated cost of €4 billion. This high dependency on energy imports is highly risky and Ireland is currently extremely vulnerable both in terms of meeting future energy needs and ensuring price stability. ('*Energy in Ireland 2018 Report'*, Sustainable Energy Authority of Ireland', December 2018). The "*Energy in Ireland 2019 Report"*, Sustainable Energy Authority of Ireland', (December 2019) has noted that final energy demand grew by 4.5% with increases in all sectors, resulting in a primary energy demand increase of 1.6%. Overall demand for fossil fuels increased by 0.1% in 2018. Furthermore the share of electricity generated from renewable sources increased by 3.1 percentage points in 2018, to 33.2%, the 2020 target is 40%.

2.1.2 EU Policy

The European Union (EU) Directive on the Promotion of the Use of Energy from Renewable Sources (Directive 2009/28/EC) was adopted on 23rd April 2009. This Directive establishes a binding target of a minimum 20% reduction in greenhouse gas emissions based on 1990 levels, 20% of overall EU energy consumption to come from renewable sources by 2020, as well as a binding 10% minimum target for energy from renewable resources in the share of transportation fuels and 20% reduction in primary energy use compared with projected levels by improving energy efficiency. Directive 2009/28/EC legally obliges each Member State to:

- Ensure that its 2020 target is met.
- Introduce "appropriate measures" and outline them in a National Renewable Energy Plan. The "appropriate measures" include ensuring that grid-related measures and administrative and planning procedures are sufficient to achieve the 2020 target. The Draft National Renewable Energy Plan for Ireland was published in June 2010.

These targets represent an important first step towards building a low-carbon economy. They are also headline targets of the Europe 2020 strategy for smart, sustainable and inclusive growth. This recognises that tackling climate and energy challenge contributes to the creation of jobs, the generation of "green" growth and a strengthening of Europe's competitiveness.

The achievement of the above '20-20-20' targets will ultimately require 'safe, secure, sustainable and affordable energy' in order to accommodate the transition to a low-carbon economy. Failure to meet EU targets on the use of energy from renewable sources could result in substantial EU sanctions.

Ireland's mandatory target under Directive is for renewable resources to account for 16% of total energy consumption by 2020. This will be met by 40% from renewable electricity, 12% from renewable heat and 10% from the renewable transport sector.

2.1.3 2030 Climate Change and Energy Framework 2014

The 2030 Climate and Energy Framework was adopted by EU leaders in October 2014 and marks a further development of EU renewable energy policy. The framework defines further EU wide targets and builds on the 2020 climate and energy package.

The Framework set three key targets for the year 2030:

- A binding commitment at EU level of at least 40% domestic Green House Gas reduction by 2030 compared to 1990;
- An EU wide, binding target of at least 27% renewable energy by 2030; and
- An indicative EU level target of at least 27% energy efficiency by 2030.

The European Commission published its proposal for an effort sharing regulation on the allocation of national targets for greenhouse gas emissions for the period 2021-2030 in July 2016. The proposal

implements EU commitments under the Paris agreement on climate change (COP21) which discussed below in Section 2.2.3.2 and marks an important milestone in the allocation to Member States of a package of climate targets that were formally adopted as part of the 2030 Climate and Energy Framework.

On the 27th of June 2018 EU ambassadors endorsed the provisional agreement reached by the Bulgarian Presidency on the revision of the renewable energy directive. The new regulatory framework is expected to pave the way for Europe's transition towards clean energy sources such as wind, solar, hydro, tidal, geothermal, and biomass energy. The agreement sets a headline target of 32% energy from renewable sources at EU level for 2030. Other key elements of the agreement include:

- The design of support schemes will provide for a possibility of technology specific support, aligned with state aid guidelines. The opening of renewable support towards neighbouring member states will be voluntary, at an aspirational pace of at least 5% between 2023 and 2026 and 10% between 2027 and 2030. Except for certain cases, member states will be obliged to issue guarantees of origin.
- Permit granting procedures will be simplified and streamlined with a maximum of two years for regular projects and one year in case of repowering, both extendable for an additional year in case of specific circumstances and notwithstanding environmental and judicial procedures. For small-scale projects below 10.8kW simple notification procedures will apply. Each member state may choose to apply simple notification procedures also to projects up to 50kW.
- The annual increase of energy from renewable sources in heating and cooling will be 1.3 percentage points indicatively, or 1.1 percentage points if waste heat is not taken into account.
- Via obligations on fuel suppliers, renewables will reach a level of at least 14% in transport by 2030, supplemented by a set of facilitative multipliers to boost renewables in different sectors.

The SEAI has acknowledged that:

> *'Meeting Ireland's 2020 renewable energy and energy efficiency targets will put Ireland on a low-carbon pathway to meet future targets in 2030 and 2050. An EU-wide reduction of 40% by 2030 has already been agreed by Member States. The EU, along with several other Member States, have set out ambitions to reduce greenhouse gas emissions by 80% to 95% by 2050, compared with 1990 levels."*

Based on the SEAI National Energy Projections 2019 it was expected that Ireland will fall short of its mandatory European target for an overall 16% renewable energy share by 2020, with overall achievement reaching approximately 13%.

2.1.4 Progress on Targets

The overall share of renewables in primary energy stood at 11.1% in 2018 which is up from the 2017 figure of 7.3%, and 7.9 in 2016. As per the EU Renewable Energy Directive, the target for Ireland is set at 16% share of renewable energy in gross final consumption (GFC) by 2020. As per the report, the contribution from renewables in 2005 was 2.8%, which as of 2017, has risen to 10.6% of the GFC. According to the SEAI's report the share of electricity from renewable energy has increased fourfold between 2005 and 2017 – from 7.2% to 30.1% – an increase of 23 percentage points over 12 years. In absolute terms, there has been a fivefold increase in the volume of renewable electricity generated from 1,873 GWh in 2005 to 8,877 GWh in 2017. Of this, it was noted that Wind energy accounted for 84% of the renewable electricity in 2017.

The June 2018 *'Off Target Report'* published by the Climate Action Network (CAN) Europe, which ranks EU countries ambition and progress in fighting climate change, listed Ireland as the second worst performing EU member state in tackling climate change. It also stated that Ireland is set to miss its 2020 climate and renewable energy targets and is also off course for its unambitious 2030 emissions target. The report states:

"Ireland has failed to prepare effective policies to align near-term climate action with EU and Paris Agreement commitments. Without new, immediate and substantive efforts to cut emissions, Ireland faces annual non-compliance costs of around €500 million."

The Department of Climate Change, Action & Environment (DCCAE) reported in their '*Fourth Progress Report on the National Renewable Energy Action Plan'* December 2017 that Ireland will achieve 13% of its 16% RES target by 2020. SEAI in their report '*Ireland's Energy Targets – Progress, Ambition & Impacts'* (April 2016) estimates that Ireland's inability to achieve its 2020 renewable energy targets will result in fines of between €65 million and €130 million per percentage shortfall on its overall binding target after 2020 until it meets its targets.

The Climate Change Advisory Council similarly notes within their *2019 Annual Review* that while the share of renewable electricity generation, particularly wind, is increasing in Ireland, the pace of decarbonisation of the electricity generation sector is not compatible with a low-carbon transition to 2050. As such, Ireland can continue to 'comply' with EU targets by purchasing emission allowances; however, the expenditure of public funds to do so would not result in any domestic benefit, and furthermore, would result in a more difficult and expensive challenge for the county to meet its future 2030 targets and beyond. The *Review* concludes that continued and additional investment in capacity and technologies in the renewable energy sector is required to reach these said targets.

Figure 2-1 shows the latest data available for the share of renewable energies in gross final energy consumption according to the Eurostat online data and the targets that have been set for 2020. The share of renewables in gross final energy consumption stood at 18.0% in the EU-28 in 2018. The data shows that twelve member states have reached a share equal to or above their 2020 target. This is not the case with Ireland who, as evident in Figure 2-1, are still considerably below meeting its 2020 target. Per the 2018 data Ireland was at 11.1% of its 16% target.

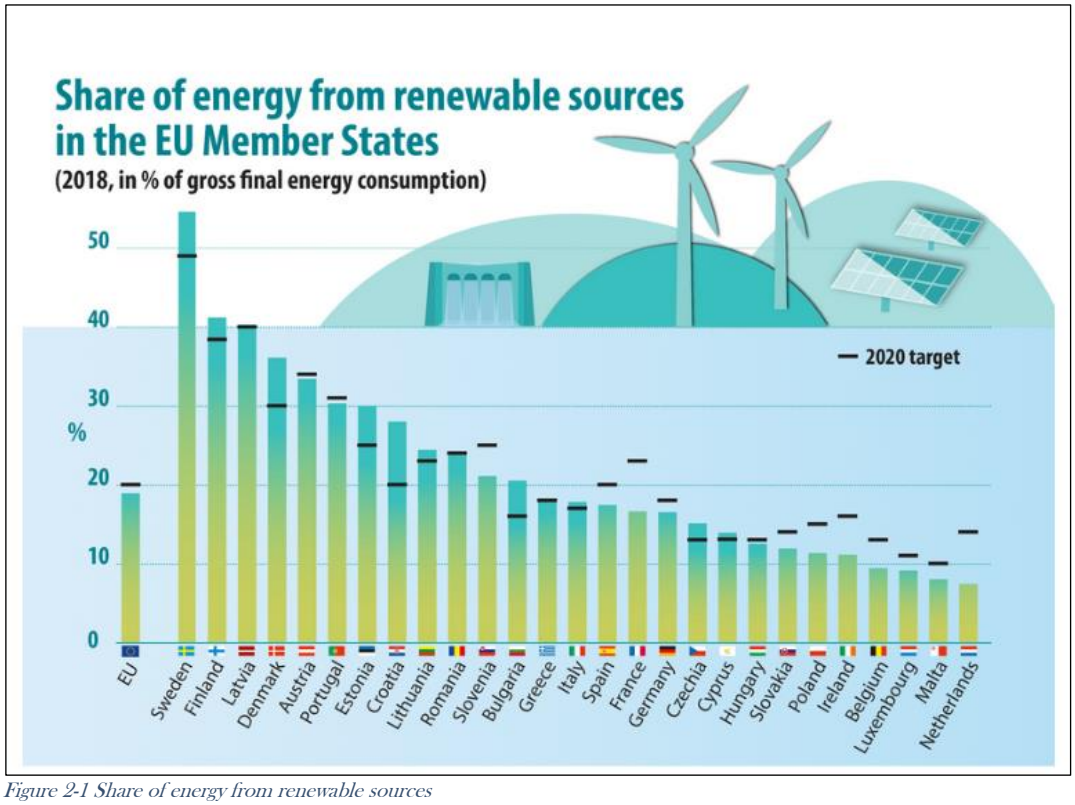


Figure 2-1 Share of energy from renewable sources

EirGrid in their '*All Island Generation Capacity Statement 2019 - 2028'* (September 2019), state that, in the absence of the National Energy and Climate Plan 2021 – 2030, it is assumed that renewable targets will be achieved largely through the deployment of additional wind powered generation in Ireland. New wind farms commissioned in Ireland in 2018 brought the total wind capacity to over 3666 MW, contributing to the increase in overall RES-E percentage to 32.5%, with wind energy accounting for

27.6%. EirGrid estimates that between 3.9 – 4.4 Gigawatts (GW) of wind may be required to meet the 2020 Renewable Energy Supply - Electricity (RES-E) target of 40%.

It is noted by EirGrid within their 2019 – 2028 statement that, at a median demand level, Ireland does not have adequate generation capacity to meet demand from 2026 once Moneypoint closes, and should any other plant close prior to this, earlier deficits may arise. This is especially pertinent with regard to the recent announcement that the Electricity Supply Board intends to close the peat-fired Shannonbridge and Lough Ree Power Stations at the end of 2020. In this context, it is estimated that 1 MW of wind capacity can provide enough electricity to supply approximately 650 homes.

It is noted that the key driver for electricity demand in Ireland for the next number of years is the connection of new large energy users, such as data centres. Specifically, there is currently 1000 MVA demand capacity that is contracted to data centres and other large energy users. This statement notes that *'Large industrial connections normally do not dominate a country's energy demand forecast but this is the case for Ireland at the moment'*. EirGrid analysis shows that demand from data centres could account for 29% of all demand by 2028 in a median demand scenario (accounts for the connection of all 1400MVA of potential demand in the connection process). The median demand scenario is now higher than for last year's forecast for high demand, indicating the progression of many of the data centre projects. It should be noted that each MW of additional data centre load will add at least 1 MW of wind to the 40% RES-E 2020 target[1]. Alternatively, 3 MW of wind could be required per MW of data centre electricity demand, if the data centre wants to commit to being powered by 100% renewable energy. Many data centres have made such commitments and have well-publicised company policies to use only renewable electricity for their power needs.

In October 2015, the Irish Wind Energy Association (IWEA) commissioned a study titled *'Data-Centre Implications for Energy Use in Ireland'* and concluded that an additional 1 GW of electricity demand may be required in Ireland by 2020 due to growth in data centres.

2.1.5 SEAI Energy National Energy Projections 2019

The SEAI National Energy Projections 2019 were published in May 2019 and there has been a significant increase in renewable energy share in Ireland over the past number of years. The report details that in 2005, 5% of Ireland's energy came from renewable sources, in 2019 it is estimated that approximately 13% of Irelands energy will be generated by renewable sources which is below the required 16% target. The report details that there is still a significant way to go to achieving our European target of 16% and Ireland will not meet EU 2020 targets. Compared to other European countries Ireland was 22nd out of the EU-28 for overall renewable energy share and 26th out of the EU-28 for progress towards overall 2020 renewable energy target.

In the context of climate change the report details that:

> *"Climate change is now recognised as the biggest threat to life on earth, and it is now urgent that we take immediate action to reduce anthropogenic emissions of greenhouse gases to limit its damaging effects."*

With regards to the production of electricity it is noted that while Ireland has had considerable success in increasing the share of renewables in electricity generation that there is a need to continue to achieve in this sector and take full advantage of the country's abundant resources. It continues to detail that as per the latest EirGrid Generation Capacity Statement there is a prediction of an increase of demand in the short terms with 3% to 5% per year listed.

The Renewable Energy Support scheme aims to increase the deployment rate, support up to 4,500 megawatts of additional renewable electricity by 2030 and diversify the renewable electricity portfolio. Policy measures that could help to meet the Government increased ambition include:

[1] *Data centres have high load factors of around 80%. Ech 1MW uses 24 x 365 x 80% = 7GWh. EU targets require that 40% or 3GWh of that should come from renewables. A 1MW wind turbine produces roughly 3GWh/yr.*

- Expediting the adoption of clear, and timebound, licensing and consenting procedures for offshore renewable energy development.
- Addressing technical grid challenges to incorporating very high levels of asynchronous renewables, for example via EirGrid's Delivering a Secure, Sustainable Electricity System (DS3) programme.
- Creating a clear, and timely, grid connection access and concession regime for offshore and new onshore renewable energy development, with due regard for methods by which the State can most cost effectively reduce or manage risk.
- Creating markets for grid services such as energy storage and other services supporting high levels of renewables on-grid.
- Supporting onshore wind farms reaching end of life, by providing clarity for re-powering investment decisions intertwined with new wind guidelines.
- Assisting the timely delivery of increased interconnection.
- Establishing corporate power purchase agreements mechanisms with mandated minimum renewable energy purchases or self-generation for large electricity demand users to leverage private investments in renewable electricity.
- Encouraging prosumers by consideration of communication methods, market mechanisms, market rules, frameworks and setting a price for export to the grid from point source generation, in line with the ambitions outlined in the Clean Energy Package.
- Developing community energy and small-scale renewable generation projects to enable a shift to a more distributed generation system with demand response capabilities.

Section 9 of the report details the effort which must be made for closing the gaps to targets. It is detailed that 'given the cumulative nature of emissions, an immediate acceleration of emissions reductions is required to put Ireland on the committed long-term trajectory'. Included as part of this is the country's commitments under the Paris Agreement. Further to this:

> *"Increased ambition and delivery targets supporting a sustainable energy transition are anticipated to be included in the upcoming All of Government Climate Action Plan being produced by DCCAE."*

It is noted under the strategy that to achieve the level of ambition set for 2020 and 2030 the country will be dependent on:

- Increased deployment rates of sustainable energy technologies and practices across the entire economy.
- The development of a national training and skills strategy to support growth of the clean energy technology sector.
- Support for changes in business models, nascent clean energy technology supply chains and the addressing of existing market failures.
- Early resolution of planning and regulatory barriers, including continued public engagement, and the development of appropriate market structures – especially for electrification of heat and transport supported with high levels of renewable electricity.
- Significant mobilization of private investment in renewable energy and energy efficiency –additional spend on efficiency is known to achieve multiple benefits including warmer, healthier and more cost effective buildings.
- The acceleration of innovation and technology adoption, especially in the area of electricity demand response, grid flexibility and storage.
- The exploitation of advances in Information Communications Technology (ICT) and national strengths in this field to advance renewables and energy efficiency, particularly in relation to passenger mobility solutions.
- Aggressively adopting the 'avoid, shift and improve' transport energy policy principles – this involves managing mobility demand to avoid trips or a shift to the most efficient modes, plus improving the energy efficiency of vehicles as well as reducing the carbon intensity of fuels.
- Taking in the ethical cost of carbon consideration in all aspects of public and private enterprise planning, involving the enforcement of the polluter pays principle by including the negative external costs associated with emissions such as healthcare or environmental reparation costs.

- An approach to carbon neutrality in the agriculture and land-use sector, including forestry, that does not compromise capacity for sustainable food production.
- The promotion of an environmentally aware and concerned citizen and community ideology to combat climate change, including recognition of the impact of diet and consumerism on climate change.

2.1.6 SEAI Energy in Ireland 2019 Report

In December 2019 SEAI produced the Energy in Ireland 2019 report, which provides the most up to date figures available (from 2018) in relation to energy production and consumption in Ireland. The report found that despite the increase in energy demand energy-related CO_2 emissions fell slightly mainly due to (a) a reduction in the amount of coal used for electricity generation (arising from a technical fault at Moneypoint – Irelands only coal-fired electricity generation plant) combined with (b) increased contributions from wind generation. In relation to renewable energy targets, the 2019 report found that:

- The share of electricity generated from renewable sources increased by 3.1 percentage points in 2018, to 33.2%. The 2020 target being 40%.
- The share of energy used for transport from renewable energy resources decreased from 7.4% in 2017 to 7.2% 2018. The 2020 target is 10%.
- The share of energy used for heat from renewable resources decreased from 6.7% in 2017 to 6.5% in 2018. The 2020 reduction target is 12%.

Furthermore the 2019 report also found that wind generation accounted for 28.1% (normalised) of all electricity generated. It was the second largest source of electricity generation in 2018 after natural gas. Wind energy accounted for 84% of the renewable energy generated in 2018. At the end of 2018 the installed capacity of wind generation reached 3,676MW, and during 2018 358MW of wind capacity was installed. The SEAI 2019 report also makes the following statements:

> *"EirGrid and ESB Networks note that as of 2019 there is 1,873 MW of additional wind generation planned, either with connection contracts in place or applications for connection underway. Historically, there has been a maximum of just over 500 MW installed in any one year since 2005 and on average the installation rate has been 200 MW."*

> *"In relation to the displacement of fossil fuels by renewable energy, it is estimated that in 2018 approximately €623 million in fossil fuel imports were avoided, of which €432 million was avoided by wind generation."*

In relation to the findings of this December 2019 SEAI report it is clear that wind energy represents the strongest and most deployable renewable energy resource available to reduce dependence on fossil fuels in Ireland. While it is clear that additional deployment is on-going, it is also apparent that it is unlikely that the 2020 targets for renewable electricity generation will be met. Achieving targets becomes even more challenging in the context of increasing electricity demand.

The Proposed Development represents an opportunity to bring forward an additional renewable energy source which will contribute towards achieving further decarbonisation of the electricity generation sector.

2.1.7 Summary of Compliance with Renewable Energy Policy and Targets

Ireland faces significant challenges through efforts to meet its 2020 targets, EU targets for renewable energy by 2030 and its commitment to transition to a low carbon economy by 2050. It is now clear that Ireland is unlikely to meet its 2020 target for renewable energy as well as the longer-term movement away from fossil fuels. The proposed Curraglass development will help Ireland address these challenges as well as addressing the country's over-dependence on imported fossil fuels.

2.2 Climate Change Policy and Targets

2.2.1 Introduction

This section of the EIAR presents the various policies and targets which relate to climate change. The below headings and sub-headings explore climate change in the context of EU and national policy and are broken down into the following sections:

- Impacts on Climate Change
- Water Resource Management
- Agriculture
- Biodiversity and Natural Ecosystems
- International Policy
- United Nations Framework Convention on Climate Change
- Kyoto Protocol Targets
- Doha Amendment to the Kyoto Protocol
- COP21 Paris Agreement
- Progress on Targets
- Emissions Projections
- National Policy
- National Climate Change Adaptation Framework 2012
- National Adaptation Framework - Planning for a Climate Resilient Ireland 2018
- National Policy Position on Climate Action and Low Carbon Development, 2014
- Climate Action and Low Carbon Development Act 2015
- National Mitigation Plan
- Report of the Joint Committee on Climate Action Climate Change: A Cross-Party Consensus for Action, March 2019
- Climate Action Plan, 2019

International and national policy consistently identifies the need to reduce greenhouse gas (GHG) emissions and stresses the importance of reducing global warming. The context of international policy has altered over the last 30 years from being of a warning nature to the current almost universally accepted belief that we are in a climate crisis. The current Proposed Development, as a generator of renewable energy, will contribute to the decarbonisation of the energy sector and reduce harmful emissions. In this regard, it is in broad compliance with national and international climate change policy and targets.

Under a report published by the EPA titled *"Irish Climate Futures: Data for Decision-making"* (June 2019) the following is acknowledged:

> *"That the world has warmed since the 19th century is unequivocal. Evidence for warming includes changes in surface, atmospheric and oceanic temperatures; glaciers; snow cover; sea ice; and sea level and atmospheric water vapour."*

The report continues to note that should business as usual continue the Earth's average temperature is likely to increase by between 2.6°C and 4.8°C above today's levels, for Ireland, the changes listed (extreme events and sea level rise) would probably mean more frequent wet winters, dry summers and hot summers. It is acknowledged that this would pose challenges for water and flood risk management, agriculture and tourism.

2.2.2 International Policy

2.2.2.1 United Nations Framework Convention on Climate Change

In 1992, countries joined an international treaty, the United Nations Framework Convention on Climate Change (UNFCCC), as a framework for international efforts to combat the challenge posed by climate change. The UNFCCC seeks to limit average global temperature increases and the resulting climate change. In addition, the UNFCCC seeks to cope with impacts that are already inevitable. It recognises

that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases. The framework set no binding limits on greenhouse gas emissions for individual countries and contains no enforcement mechanisms. Instead, the framework outlines how specific international treaties (called "protocols" or "Agreements") may be negotiated to set binding limits on greenhouse gases.

2.2.3 Kyoto Protocol Targets

Ireland is a Party to the Kyoto Protocol, an international agreement that sets limitations and reduction targets for greenhouse gases for developed countries. It came into effect in 2005, as a result of which, emission 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.

2.2.3.1 Doha Amendment to the Kyoto Protocol

In Doha, Qatar, on 8th 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; and
- 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.

During the first commitment period, 37 industrialised countries and the European Community committed to reduce GHG emissions to an average of 5% against 1990 levels. During the second commitment period, Parties committed to reduce GHG emissions by at least 18% below 1990 levels in the eight-year period from 2013 to 2020; however, the composition of Parties in the second commitment period is different from the first.

Under the protocol, countries must meet their targets primarily through national measures, although market-based mechanisms (such as international emissions trading) can also be utilised.

2.2.3.2 COP21 Paris Agreement

COP21 was the 21st session of the Conference of the Parties (COP) to the UNFCCC. Every year since 1995, the COP has gathered the 196 Parties (195 countries and the European Union) that have ratified the Convention in a different country, to evaluate its implementation and negotiate new commitments. COP21 was organised by the United Nations in Paris and held from 30th November to 12th December 2015.

COP21 closed on 12th December 2015 with the adoption of the first international climate agreement (concluded by 195 countries and applicable to all). The 12-page text, made up of a preamble and 29 articles, provides for a limitation of the global average temperature rise to well below 2°C above pre-industrial levels and to limit the increase to 1.5°C. It is flexible and takes into account the needs and capacities of each country. It is balanced as regards adaptation and mitigation, and durable, with a periodical ratcheting-up of ambitions.

A recent article published by the IPCC (Intergovernmental Panel on Climate Change) on the 6th October 2018 titled '*Global Warming of 1.5°C*', notes the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways; in the context of mitigation

pathways, strengthening of the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. This special report is part of an invitation contained in the Decision of the 21st Conference of Parties of the United Nations Framework Convention on Climate Change to adopt the Paris Agreement, and provides an update on the impact of climate change if emissions are not reduced.

2.2.3.3 COP25 Madrid- Current Progress

COP25, the 25th session of the COP, was held between the 2nd and 13th of December 2019 in Madrid. The conference was characterised by repeated warnings from civil society (NGOs and corporates) on emerging evidence and scientific consensus on climate change risk. Specifically, it is noted that there are only '10 years left' before the opportunity of limiting global warming to 1.5°C is no longer feasible. As such, the only scenario that makes it possible is a '7.6% reduction of global GHG emissions every year between 2020 and 2030, and to reach net zero emissions by 2050'. However, there was no consensus achieved between States to finalise the operating rules of the Paris Agreement and ensure that it became operational by 2020. Three issues which emerged between States from the COP25 are summarised below:

- There was no uniform consensus between States to raise countries' climate ambitions, e.g. to make increased commitments in light of growing climate change data. Some States were opposed to imposing any obligation on countries to submit enhanced pledges next year, arguing it should be each country's own decision. All states must submit a review of their commitments for COP 26 in 2020. At the current level of climate targets, within a decade, the objective of the Paris Agreement will no longer be achievable;
- There was no agreement on finalising Article 6, the foundations for international cooperation to combat climate change. The aim was to establish the rules for new international mechanisms for financing and transferring GHG emission reductions; and
- There was no agreement on financing (Green Climate Fund); specifically, relating to both loss and damage caused by climate change.

Despite the lack of consensus to the above challenges, the COP25 did achieve more limited success in the introduction of the *"San Jose Principles for High Ambition and Integrity of International Carbon Markets*", which sets out the framework on which a robust carbon market should be built. These 12 no. principles include, but are not limited to:

- Ensures environmental integrity and enables the highest possible mitigation ambition;
- Delivers an overall mitigation in global emissions, moving beyond zero-sum offsetting approaches to help accelerate the reduction of global greenhouse gas emissions;
- Prohibits the use of pre-2020 units, Kyoto units and allowances, and any underlying reductions toward Paris Agreement and other international goals; and
- Ensures that double counting is avoided and that all use of markets toward international climate goals is subject to corresponding adjustments.

These principles were supported by 23 EU, including Ireland, and Latin American countries, 5 pacific islands and 2 countries in the Caribbean.

In addition, the European Union's Green Pact was introduced on the 11th of December with agreement of the European Council and all Member States (except Poland)on the ambition of climate neutrality in 2050, supported by a financing plan of €1,000 billion over 10 years.

2.2.3.4 Progress on Targets

The '*Europe 2020 Strategy'* is the EU's agenda for growth and jobs. The Europe 2020 Strategy targets on climate change and energy include:

- Reducing GHG emissions by at least 20% compared with 1990 levels;
- Increasing the share of renewable energy in final energy consumption to 20%; and

- Moving towards a 20% increase in energy efficiency.

The *'Europe 2020 indicators – climate change and energy'* report provides a summary of recent statistics on climate change and energy in the EU, with reference to the progress of Member States in meeting the required targets. In 2016, EU greenhouse gas emissions, including emissions from international aviation and indirect carbon dioxide (CO_2) emissions, were down by 22.4% when compared with 1990 levels. The EU is therefore expected to exceed its Europe 2020 target of reducing GHG emissions by 20% by 2020. In 2016, renewable energy provided 17.0 % of gross final energy consumption in the EU, up from 9% in 2005.

However, regarding the progress of individual Member States, and Ireland in particular, the Europe 2020 indicators include the following statements:

- 24 countries are on track to meet their GHG targets, except Austria, Belgium, Ireland and Luxembourg;
- Luxembourg emitted the most GHG per capita in the EU in 2014 followed by Estonia, Ireland, the Czech Republic and the Netherlands; and
- All EU countries have increased their renewable energy share between 2005 and 2014. Twelve have more than doubled their share, albeit from a low base. Nine have already met their 2020 targets. In 2014, France, the Netherlands, the United Kingdom and Ireland were farthest from reaching their national targets.

While the EU as a whole is projected to exceed it's 2020 target of reducing GHG emissions by 20%, Ireland is currently one of the countries projected to miss its national targets. The Europe 2020 report emphasises the importance of continued action on climate change:

> *"Despite the EU's shrinking share in global CO2 emissions, recent findings on the potentially catastrophic impacts of climate change confirm the ongoing importance of its climate and energy goals. EU emission cuts alone cannot halt climate change, but if it can show that a low-carbon economy is feasible, and can even increase innovation and employment, it will serve as a role model to other regions. Continuous investment in advanced low-carbon technologies can also help the EU uphold technological leadership and secure export markets. A successful transformation of the energy sector... is pivotal in this respect."*

While official figures for 2020 have not been released to date, the 2019 SEAI National Energy Projections Report, published last year (2019) acknowledges that Ireland will fall short of its 2020 targets, it states "...it is expected that Ireland will fall short of its mandatory European target for an overall 16% renewable energy share by 2020, with overall achievement approximately 13%.", The report goes on to confirm *"Compared with other European Countries Ireland was 22nd out of the EU28 for overall renewable energy share and 26th out of the EU-28 for progress towards overall 2020 renewable energy target."*

2.2.3.5 Emissions Projections

In June 2019, the EPA published an update on Ireland's Greenhouse Gas Emission Projections 2018-2040. The report provides an assessment of Irelands progress towards achieving its emission reduction targets set under the EU Effort Sharing Decision (Decision No 406/2009/EU) – i.e. to achieve a 20% reduction of non-Emission Trading Scheme (non-ETS) sector emissions, i.e. agriculture, transport, residential, commercial, non-energy intensive industry and waste, on 2005 levels, with annual binding limits set for each year over the 2013-2020 period.

Greenhouse gas emissions are projected to 2020 using two scenarios; 'With Existing Measures' and 'With Additional Measures'. The 'With Measures' scenario assumes that no additional policies and measures, beyond those already in place by the end of 2017 are implemented. The 'With Additional Measures' scenario assumes implementation of the 'With Existing Measures' scenario in addition to further implementation of Government renewable and energy efficiency policies and measures, as set out in the NREAP and the National Energy Efficiency Action Plan (NEEAP).

The EPA Emission Projections Update notes the following key trends:

- 2019 greenhouse gas emission projections show total emission increasing from current levels by 1% and 6% by 2020 and 2030, respectively, under 'With Existing Measures' scenario. Under 'With Additional Measures', emissions are estimated to decrease by 0.4% and 10% by 2020 and 2030, respectively;
- Under the 'With Existing Measures', emissions from Energy Industries are projected to increase by 31% between 2018 and 2030 to 15.4 Mt CO2eq. Under the 'With Additional Measures', emissions between 2018 and 2030 are predicted to decrease by 27% to 8.6 Mt CO2eq;
- Under 'With Existing Measures', approximately 41% of electricity generation is projected to come from renewable energy sources by 2030. In the 'With Additional Measures' scenario, it is estimated that renewable energy generation increases to approximately 54% of electricity consumption;
- Agriculture and transport dominate non-ETS sector emissions accounting for 75% and 80% of emissions in 2020 and 2030, respectively. In 2020, the sectors with the largest contribution of emissions are Agriculture, Transport and Energy Industries with 34%, 21% and 20% share in total emissions, respectively, under the With Additional Measures scenario. In 2030 this is projected to change to 38%, 22% and 16% for these sectors, respectively, which reflects the growth in emissions from agriculture and reduction of emissions from power generation; and
- Ireland has exceeded its annual binding limits in 2016 and 2017. However, even using this mechanism, Ireland will still be in non-compliance according to the latest projections.

The 2019 EPA report states that "A significant reduction in emissions over the longer term is projected as a result of the expansion of renewables (e.g. wind), assumed to reach 41-54% by 2030, with a move away from coal and peat". Over the period 2013 – 2020, Ireland is projected to cumulatively exceed its compliance obligations by approximately 10.3 Mt CO2 (metric tonnes of Carbon Dioxide) under the "With Existing Measures" scenario and 9.2 Mt CO2 under the "With Additional Measures" scenario.

2.2.4 National Policy

2.2.4.1 National Climate Change Adaption Framework 2012

Ireland's first National Climate Change Adaptation Framework (NCCAF), which was published in December 2012, aims to ensure that adaptation actions are taken across key sectors and also at local level to reduce Ireland's vulnerability to climate change. The NCCAF requires the development and implementation of sectoral and local adaptation plans which will form part of the national response to the impacts of climate change. Each relevant Government Department (or State Agency, where appropriate) are required to prepare adaptation plans for their sectors. Twelve sectors were identified in total including Transport, Flood Defence, Agriculture and Energy. The Climate Action and Low Carbon Development Act 2015 (No. 46 of 2015) puts the development of National Climate Change Adaptation Frameworks and Sectoral Adaptation Plans on a statutory basis.

The Act states that following Government approval of the first statutory National Climate Change Adaptation Framework it must be reviewed at least every 5 years after that.

2.2.4.2 National Adaption Framework Planning for a Climate Resilient Ireland 2018

Ireland's first statutory National Adaptation Framework (NAF) was published on 19th January 2018. The NAF sets out the national strategy to reduce the vulnerability of the country to the negative effects of climate change and to avail of positive impacts. The NAF was developed under the Climate Action and Low Carbon Development Act 2015. The NAF builds on the work already carried out under the National Climate Change Adaptation Framework (NCCAF, 2012). It is detailed that under the NAF 'a number of Government Departments will be required to prepare sectoral adaptation plans in relation to a priority area that they are responsible for. The NAF can be broken down as follows:

Chapter 1 provides a summary of observed and projected global climate change and the international and European policy drivers for adaptation to climate change. It also contains a summary of observed and projected climate change impacts in Ireland. The following are detailed under the NAF:

- Warming of the global climate system is unequivocal and it is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century.
- Observations show that global average temperatures have increased by 0.85℃ (in the range 0.65 to 1.06°C) since 1850.
- In recent decades, changes in climate have caused impacts on natural and human systems on all continents and across the oceans.
- Increasing magnitudes of warming increase the likelihood of severe, pervasive and irreversible impacts.
- Uncertainties exist in relation to the extent and rate of future climate change. Addressing uncertainties is a challenge, but should not be read as an excuse for inaction as there is overall agreement on the robustness of trends and projections.
- The impacts and risks of climate change can be reduced and managed through mitigation and adaptation actions.
- Adaptation actions must be risk based, informed by the vulnerabilities of exposed societies and systems and an understanding of projected climate change.
- Changes in Ireland's climate are in line with global trends. Temperatures have increased by about 0.8°C since 1900, an average of about 0.07°C per decade over that period, and changes in precipitation regimes, sea level rise and extreme events (storms, flooding, sea surges and flash floods) are also being observed.
- Climate change will have diverse and wide ranging impacts on Ireland's environment, society, economic development, including managed and natural ecosystems, water resources, agriculture and food security, human health and coastal infrastructures and zones.
- The overall trend in Ireland is consistent with global patterns of change, with a high degree of climate variability and associated uncertainties in relation to extreme events.
- Sufficient robust information exists nationally to further progress the process of implementing adaptation actions and increasing social, economic and environmental resilience to climate change.

The framework continues to detail that as per the Intergovernmental Panel on Climate Change (IPCC, 2013) it was concluded that 95% probability that the global warming of the last 50 years is a result of human activities, with the main contribution to this warming coming from the burning of fossil fuels. With regards to climate impacts for 2050 and beyond

Chapter 2 sets out the progress to date on climate change adaptation planning in Ireland, including work undertaken at sectoral and local government level and initiatives involving civil society and the research community.

Chapter 3 provides a number of guiding principles for adaptation at national level. It includes steps for creating an enabling environment for adaptation planning. It sets out the sectors for which adaptation plans under the NAF are to be prepared, along with proposals for local authority or regional level adaptation strategies. Detailed under chapter 3 of the framework are the guiding principles for adaptation, regardless of how successful efforts to mitigate GHG emissions prove to be, the impact of climate change will continue over the coming decades because of the delayed impacts of past and current emissions. There is no choice, therefore, but to take adaptation measures to deal with the unavoidable impacts of climate change and associated economic, environmental and social costs. This is recognised at international, European Union and national level. It is stated that:

> *"Adaptation not only depends on action by all levels of government but also on the active and sustained engagement of all stakeholders, including sectoral interests, the private sector, communities and individuals. Everybody has a role to play in making sure Ireland is taking appropriate adaptation action to achieve a climate resilient future. This is a joint responsibility where "climate proofing" our country is an undertaking for which all of society is responsible and everyone has a role to play."*

Chapter 4 outlines how the Framework will be implemented with revised Governance and reporting arrangements as well as actions and supporting objectives that are to be progressed.

2.2.4.3 National Policy Position on Climate Action and Low Carbon Development 2014

The National Policy Position on Climate Action and Low Carbon Development, published by the Department of Environment, Community and Local Government in April 2014, provides a high-level policy direction for the adoption and implementation by Government of plans to enable the State to move to a low-carbon economy by 2050. The position paper acknowledges that the evolution of climate policy in Ireland will be an iterative process, based on the adoption by Government of a series of national plans over the period to 2050. Statutory authority for the plans is set out in the Climate Action and Low Carbon Development Act 2015.

2.2.4.4 Climate Action and Low Carbon Development Act 2015

The Climate Action and Low Carbon Development Act 2015 was signed into law on 10th December 2015. The Act provides for the establishment of a national framework with the aim of achieving a low carbon, climate resilient, and environmentally sustainable economy by 2050, referred to in the Act as the "national transition objective".

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

- A National Mitigation Plan (to lower Ireland's greenhouse gas emissions levels); - see below
- A National Adaptation Framework (to provide for responses to changes caused by climate change);
- Tailored sectoral plans (to specify the adaptation measures to be taken by each Government ministry); and
- Establishment of the Climate Change Advisory Council to advise Ministers and the Government on climate change matters.

2.2.4.5 National Mitigation Plan

Ireland's first statutory National Mitigation Plan (NMP), published in July 2017, gives effect to the provisions of the Climate Action and Low Carbon Development Act 2015, and represents a landmark national milestone in the evolution of climate change policy in Ireland and provides for the statutory basis for the transition to a low carbon, climate resilient and environmentally sustainable economy by 2050.

The NMP reaffirms Ireland's commitment to concerted and multilateral action to tackle climate change following the adoption of the legally-binding Paris Agreement of which Ireland is a co-signatory. Under the Paris Agreement, the EU is committed to reducing greenhouse gas emissions by at least 40% by 2030, compared with 1990 levels. The Paris Agreement represents a landmark accord in tackling climate change, which is recognised by all parties as the defining global issue of this generation. The NMP outlines a range of measures to lay the foundations for transitioning Ireland to a low-carbon, climate-resilient and environmentally sustainable economy by 2050.

The NMP reiterates that the objective of a low-carbon future will involve radically changing our behaviour as citizens, industry and Government and becoming significantly more energy-efficient. In this regard, the NMP has made it clear that Ireland has abundant, diverse and indigenous renewable energy resources, which will be critical to decarbonising our energy system, including electricity generation. The NMP confirms that *"Onshore wind has, to date, been the most cost-competitive renewable electricity technology in Ireland, accounting for 22.8% of overall electricity generation in 2015."*

The NMP addresses the role of local authorities in facilitating the transition towards a low-carbon economy and recognises that this requires engagement from all levels of Government and that a bottom-

up approach is also essential to promote awareness and engagement within individual communities across Ireland.

The NMP further states that *there "is also recognition within the Local Authority sector of the need for the sector to assume a leadership role within their local communities to encourage appropriate behavioural change".* Moreover, the Plan emphasises that local authorities also have a key role to play *"in addressing climate change mitigation action and are well placed to assess, exploit and support opportunities within their administrative areas, in cooperation with each other and with national bodies, and through the involvement and support of local communities".*

Specifically, in relation to wind energy the National Mitigation Plan notes the following:

> *"To date, wind energy has been the largest driver of growth in renewable electricity. The total amount of renewable generation connected to the grid at December 2016 was 3,120MW, of which wind generation was approximately 2,796MW, hydro was 238MW and biomass was 86MW19. Eirgrid estimates that a total of between 3,900MW and 4,300MW of onshore renewable generation capacity will be required to allow Ireland to achieve 40% renewable electricity by 2020. This leaves a further requirement of between 780MW and 1,180MW to be installed by 2020 if the 2020 electricity target is to be reached, requiring an increased rate of installation."*

2.2.4.6 Report of the Joint Committee on Climate Action Climate Change: A Cross-Party Consensus for Action, March 2019

In March 2019, the Joint Committee on Climate Action Change released a report detailing a cross party consensus for action. The report in its introduction notes that *"Irelands performance in meeting international obligations has to date been poor".* The Committee places concern that predictions of emissions indicate that the state is off track in meeting its 2020 and 2030 targets under the Kyoto protocol and the EU Directives.

The committee recommended that new climate change legislation be enacted by the Oireachtas in 2019. The following recommendations have been listed:

1. A target of net zero economy wide GHG emissions by 2050.
2. A provision for a 2030 target, consistent with the GHG emissions reduction pathway to 2050 to be set by 2020 by Statutory Instrument requiring the formal approval of both Houses of the Oireachtas following receipt of advice from the Climate Action Council.
3. Provision for five-yearly carbon budgets, consistent with the emissions reduction pathway to 2030 and 2050 targets, to be set by Statutory Instrument requiring the formal approval of both Houses of the Oireachtas following receipt of advice from the Climate Action Council.
4. A target for the renewable share of electricity generation of 70% by 2030.

Further to this the committee acknowledge that the measures which are currently in place along with the measures suggested within the report will not be sufficient in meeting Ireland's targets.

Chapter 7 of the report outlines the committee's recommendations for developing Ireland's capacity in renewable energies and renewable electricity in particular. It is noted that the transformation of Ireland's energy system will be required for the country to meet its GHG emission targets. To reach net zero emissions by 2050 the report recognises that the country will be required to fully decarbonize electricity generation. Section 7.5 relates to onshore renewable energy generation, it is acknowledged that onshore wind energy is currently the primary source of renewable electricity within Ireland, accounting for 84% of renewable power generated in 2017, it is also detailed that, 'onshore wind alone will not supply Ireland with sufficient electricity to become self-sufficient, it is evident that it must be used alongside other sources of renewable energy'.

Under its recommendations, the Committee encourages the upgrading of existing onshore wind turbines where this will yield additional potential. While acknowledging that there are challenges in relation to securing additional on-shore wind generated renewable energy the Report fully supports the increased

provision of on-shore wind farm development at appropriate locations (such as that of the current proposal) and acknowledges that on-shore wind has a pivotal role to play in achieving climate action targets.

2.2.4.7 Climate Action Plan 2019

The Climate Action Plan 2019 (CAP) was published on the 1st of August 2019 by the Department of Communications, Climate Action and Environment. The CAP sets out an ambitious course of action over the coming years to address the impacts which climate may have on Irelands environment, society, economic and natural resources. This Plan clearly recognises that Ireland must significantly step up its commitments to tackle climate disruption.

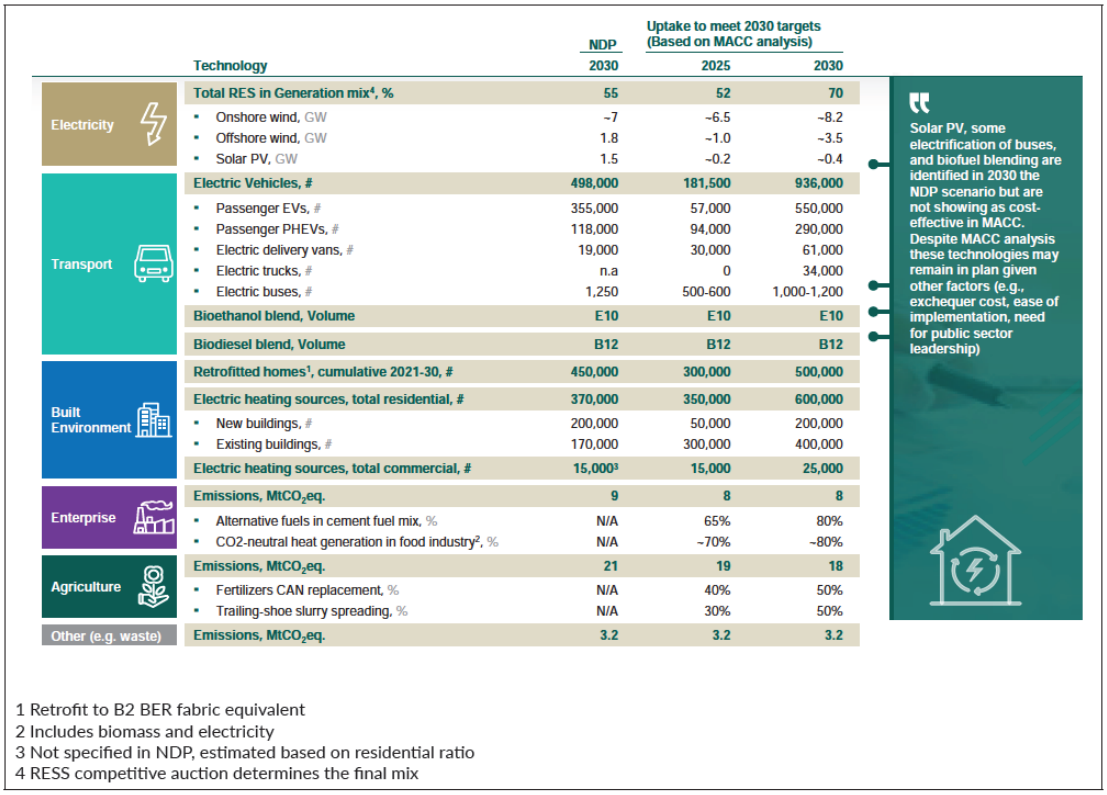
Chapter 1 of the CAP sets out the nature of the challenge which Ireland faces over the coming years. The CAP notes that the evidence for warming if our climate system is beyond dispute with observations showing that global average temperatures having increased by more than 1 °C since pre-industrial times. These changes will cause extensive direct and indirect harm to Ireland and its people, as well as to other countries more exposed and less able than we are to withstand the associated impacts, which are predicted to include:

- Rising sea-levels threatening habitable land and particularly coastal infrastructure,
- Extreme weather, including more intense storms and rainfall affecting our land, coastline and seas,
- Further pressure on our water resources and food production systems with associated impacts on fluvial and coastal ecosystems,
- Increased chance and scale of river and coastal flooding,
- Greater political and security instability,
- Displacement of population and climate refugees,
- Heightened risk of the arrival of new pests and diseases,
- Poorer water quality,
- Changes in the distribution and time of lifecycle events of plant and animal species on land and in the oceans.

It is also recognised within the Plan that in addition to the above many of the pollutants associated with climate change are also damaging to human health.

It is the ambition of the CAP to deliver a step-change in our emissions performance over the coming decade, so that we will not only meet our EU targets for 2030 but will also be well placed to meet our mid-century decarbonisation objectives.

Figure 2-2 below depicts Irelands decarbonisation pathway up to the year 2030. The below will be used to manage Irelands decarbonisation pathway and details the path for the various sectors:



	Technology	NDP 2030	Uptake to meet 2030 targets (Based on MACC analysis) 2025	2030
Electricity	**Total RES in Generation mix[4], %**	**55**	**52**	**70**
	▪ Onshore wind, GW	~7	~6.5	~8.2
	▪ Offshore wind, GW	1.8	~1.0	~3.5
	▪ Solar PV, GW	1.5	~0.2	~0.4
Transport	**Electric Vehicles, #**	**498,000**	**181,500**	**936,000**
	▪ Passenger EVs, #	355,000	57,000	550,000
	▪ Passenger PHEVs, #	118,000	94,000	290,000
	▪ Electric delivery vans, #	19,000	30,000	61,000
	▪ Electric trucks, #	n.a	0	34,000
	▪ Electric buses, #	1,250	500-600	1,000-1,200
	Bioethanol blend, Volume	**E10**	**E10**	**E10**
	Biodiesel blend, Volume	**B12**	**B12**	**B12**
Built Environment	**Retrofitted homes[1], cumulative 2021-30, #**	**450,000**	**300,000**	**500,000**
	Electric heating sources, total residential, #	**370,000**	**350,000**	**600,000**
	▪ New buildings, #	200,000	50,000	200,000
	▪ Existing buildings, #	170,000	300,000	400,000
	Electric heating sources, total commercial, #	**15,000[3]**	**15,000**	**25,000**
Enterprise	**Emissions, $MtCO_2eq.$**	**9**	**8**	**8**
	▪ Alternative fuels in cement fuel mix, %	N/A	65%	80%
	▪ CO2-neutral heat generation in food industry[2], %	N/A	~70%	~80%
Agriculture	**Emissions, $MtCO_2eq.$**	**21**	**19**	**18**
	▪ Fertilizers CAN replacement, %	N/A	40%	50%
	▪ Trailing-shoe slurry spreading, %	N/A	30%	50%
Other (e.g. waste)	**Emissions, $MtCO_2eq.$**	**3.2**	**3.2**	**3.2**

Solar PV, some electrification of buses, and biofuel blending are identified in 2030 the NDP scenario but are not showing as cost-effective in MACC. Despite MACC analysis these technologies may remain in plan given other factors (e.g., exchequer cost, ease of implementation, need for public sector leadership)

1 Retrofit to B2 BER fabric equivalent
2 Includes biomass and electricity
3 Not specified in NDP, estimated based on residential ratio
4 RESS competitive auction determines the final mix

Figure 2-2 Irelands Decarbonisation Pathway Dashboard to 2030

Chapter 7 of the CAP details the plans views surrounding electricity. Within Ireland electricity accounting for 19.3% of Irelands greenhouse gases in 2017, the following is noted:

> *"It is important that we decarbonise the electricity that we consume by harnessing our significant renewable energy resources by doing this we will also become less dependent on imported fossil fuels."*

In 2017 within Ireland a total of 30.1% of electricity produced came from renewable sources, the target to be achieved by 2020 is set at 40%. The CAP goes on to note that 'given our 40% target is based on a percentage of total energy demand, this rising demand makes meeting our 2020 target even more challenging and latest forecasts indicate we may miss this target by 3 to 4 percentage points'. Further to this while decarbonising electricity is a key aspect of the strategy it is noted that this is against the background of rapid projected growth in electricity demand. It is expected that demand for electricity is forecast to increase by 50% above existing capacity in the next decade. Generation electricity builds of a renewable nature rather than fossil fuels has been marked as essential.

The CAP goes on to note that with regards to policy measures to date that they will not achieve the level of decarbonisation required in the electricity sector to meet the 2030 emissions reduction targets, as such it is listed that '*we must 'reduce our electricity sector emissions to 4-5 Mt in 2030'*. In relation to emissions the following is noted:

> *"In 2017, emissions from electricity were 12 Mt and in 2030, despite implementation of Project Ireland 2040 measures, emissions are projected to be 8 Mt. This clearly demonstrates the need for a significant step-up in ambition over existing policy, not only to meet our 2030 targets, but to set us on course to deliver substantive decarbonisation of our economy and society by 2050."*

Key Metrics	2017	2025 Based on MACC	2030 Based on NDP	2030 Based on MACC
Share of Renewable Electricity, %	~30%[20]	52%	55%	70%
Onshore Wind Capacity, GW	~3.3	6.5	N/A	8.2
Offshore Wind Capacity, GW	NA	1.0	N/A	3.5
Solar PV Capacity, GW	NA	0.2	N/A	0.4
CCGT Capacity, GW	~3.6	5.1	N/A	4.7

Figure 2-3 Potential Metrics to Deliver Abatement in Electricity

In the electricity sector, reaching a 70% share of renewable electricity would require 50-55% emissions reduction by 2030. Under section 7.2 the following targets have been set out:

- Reduce CO2 eq. emissions from the sector by 50–55% relative to 2030 Pre-NDP projections
- Deliver an early and complete phase-out of coal- and peat-fired electricity generation
- Increase electricity generated from renewable sources to 70%, indicatively comprised of:
  - at least 3.5 GW of offshore renewable energy
  - at least 3.5 GW of offshore renewable energy
  - up to 1.5 GW of grid-scale solar energy
  - up to 8.2 GW total of increased onshore wind capacity
- Meet 15% of electricity demand by renewable sources contracted under Corporate PPAs

Achieving 70% renewable electricity by 2030 will involve phasing out coal- and peat-fired electricity generation plants, increasing our renewable electricity, reinforcing our grid (including greater interconnection to allow electricity to flow between Ireland and other countries), and putting systems in place to manage intermittent sources of power, especially from wind.

Section 7.2 of the CAP notes the 'Measures to deliver targets' in which efforts to meet the 2030 ambitions which includes increased harnessing of renewable energy. As seen in Figure 2-3 above, **CAP identifies a need for 8.2GW of onshore wind generation and states that in 2017 there was 3.3GW in place, therefore Ireland needs to more than double its installed capacity of wind generation.** Accordingly, the CAP which published earlier this month presents clear and unequivocal support for the provision of additional renewable energy generation and presents yet further policy support for increased wind energy.

2.2.4.8 National Renewable Energy Action Plan

Article 4 of the Renewable Energy Directive on renewable energy required each Member State to adopt a national renewable energy action plan (NREAP) to be submitted to the European Commission. The NREAP sets out the Member State's national targets for the share of energy from renewable sources to be consumed in transport, electricity and heating and cooling in 2020, and demonstrates how the Member State will meet its overall national target established under the Directive.

The NREAP sets out the Government's strategic approach and planned measures to deliver on Ireland's 16% target under the Renewable Energy Directive. In relation to wind energy, the NREAP states:

"..., Ireland has immense potential for the development of renewable energy particularly wind energy, both on and offshore and wave energy. The development and expansion of the use of renewable energy, together with measures aimed at a reduction and more efficient use of energy are important as regards meeting our climate change objectives and priorities, both nationally and at European level. At a high level a significant increase in renewable energy and the protection of the environment are thus mutually reinforcing goals."

2.2.5 Summary of Compliance with Climate Change Policy

The Proposed Development constitutes the provision of a renewable energy development which will generate electricity and make it available to the national grid. The Proposed Development will therefore increase the amount of renewable energy that will be available on the national grid and will therefore contribute to Irelands efforts and stated policy to decarbonise the economy. The proposed renewable energy will help Ireland address the challenge of decarbonising electricity generation as well as addressing the country's over-dependence on imported fossil fuels.

2.3 Strategic Planning Context

2.3.1 Introduction

This section of the EIAR Provides the strategic planning context of the Proposed Development. As is examined below, the Proposed Development is in line with national, regional and local policies, frameworks, guidelines and plans. This section has been broken down into the following:

- National Planning Framework 2018 - 2040,
  - Key Sustainability Elements of National Planning Framework,
- Draft Renewable Electricity Policy and Development Framework, 2016
- Regional Policy,
  - Regional Spatial and Economic Strategy for the Southern Region,
- Local Policy
  - Cork County Development Plan 2014,
- Other Relevant Guidelines,
  - Interim Guidelines for Planning Authorities on Statutory Plans, Renewable Energy and Climate Change 2017,
  - DoEHLG Wind Energy Guidelines 2006,
  - Department Circular PL5/2017,
  - IWEA Best Practice Guidelines for the Irish Wind Energy Industry 2012,
  - IWEA Best Practice Principles in Community Engagement and Community Commitment 2013,
  - IWEA Community Engagement Strategy 2018,
  - Code of Practice for Wind Energy Development in Ireland - Guidelines for Community Engagement 2016,
  - Commission for Regulation of Utilities: Grid Connection Policy,
  - Renewable Energy Support Scheme (RESS), and
  - Forest Service Guidelines
  - Draft Revised Wind Energy Development Guidelines 2019,
- Draft Guidelines
  - DoEHLG Wind Energy Guidelines 2006 (Revisions)
  - Draft Revised Wind Energy Development Guidelines, December 2019

As a renewable energy project the current proposal is broadly consistent with the overall national policy objectives to increase penetration and deployment of renewable energy resources and has been designed in the context of the relevant wind energy and other guidelines. The specific compliance with the County Development Plan provisions are dealt with in detail in the County Development Plan section below.

2.3.2 National Planning Framework 2018-2024

The National Planning Framework (NPF), published in February of 2018, aims to shape and guide the future growth and development of Ireland up to 2040. The NPF will supersede the National Spatial Strategy 2002-2020 (NSS) and will include a focus on economic development and investment in housing, water services, transport, communications, energy, health and education infrastructure. The new framework sets out five strategic actions:

- Developing a new region-focused strategy for managing growth;
- Linking this to a new 10-year investment plan, the Project Ireland 2040 National Development Plan 2018-2027;
- Using state lands for certain strategic purposes;
- Supporting this with strengthened, more environmentally focused planning at local level; and
- Backing the framework up in law with an Independent Office of the Planning Regulator.

The NPF forms the top tier of the national planning policy structure, accordingly, establishing the policy context for the Regional Spatial and Economic Strategies and local level development plans. In an effort to move away from developer led development to one informed by the needs and requirements of society, a number of objectives and policies have been put in place in order for the country to grow and develop in a sustainable manner.

The NPF notes that the population of Ireland is projected to increase by approximately 1 million people by 2040 which will result in a population of roughly 5.7 million. This population growth will place further demand on both the built and natural environment. In order to strengthen and facilitate more environmentally focused planning at the local level, the NPF states that future planning and development will need to:

> *"Tackle Ireland's higher than average carbon-intensity per capita and enable a national transition to a competitive low carbon, climate resilient and environmentally sustainable economy by 2050, through harnessing our country's prodigious renewable energy potential."*

The Framework notes that while the overall quality of the country's environment is good, it is not without challenges. The NPF notes the manner in which we plan is important for the sustainability of our environment and states the following.

> *"While the overall quality of our environment is good, this masks some of the threats we now face. Key national environmental challenges include the need to accelerate action on climate change, health risks to drinking water, treating urban wastewater, protecting important and vulnerable habitats as well as diminishing wild countryside and dealing with air quality problems in urban areas. It is also important to make space for nature into the future, as our population increases."*

The NPF seeks to achieve ten strategic priorities surrounding:

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

Relevant to the Proposed Development, the **National Strategic Outcome 8** (Transition to Sustainable Energy), notes that in creating Ireland's future energy landscape, new energy systems and transmission

grids will be necessary to enable a more distributed energy generation which connects established and emerging energy sources, i.e. renewables, to the major sources of demand. Ireland's national energy policy under **Objective 55** aims to *'promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050'.* Through this, it is noted that there are three pillars of focus which must be considered:

1. Sustainability;
2. Security of supply;
3. Competitiveness.

The NPF highlights the important role which the regions will have in promoting a sustainable renewable energy supply and have been noted as a key future planning and development priority. It notes that *'harnessing the potential of the regions in renewable energy terms across the technology spectrum from wind and solar to biomass and where applicable, wave energy, focusing in particular on the extensive tracts of publicly owned peat extraction areas in order to enable a managed transition of the local economies of such areas in gaining the economic benefits of greener energy'.* The government recognise that they must reduce greenhouse gas emissions which come from the energy sector by at least 80% by 2050 when compared to 1990 levels while ensuring a secure supply of energy.

A key aspect of the NPF surrounds the long-term sustainability of the environment, it aims to ensure that decisions that are made today meet our future needs in a sustainable manner.

> *"The manner in which we plan is important for the sustainability of our environment. Our planning system has influence across a wide range of sectors, both directly and indirectly and interacts with many common issues related to effective environmental management, including water services, landscape, flood risk planning, protection of designated sites and species, coastal and marine management, climate mitigation and adaptation, and land use change."*

The Government will address environmental and climate challenges through the following overarching aims as listed under 'Resource Efficiency and Transition to a Low Carbon Economy':

- Sustainable Land Management and Resource Efficiency;
- Low Carbon Economy;
- Renewable Energy; and
- Managing Waste.

In order to meet legally binding targets agreed at EU level, it is a national objective for Ireland to make a transition and become a competitive low carbon, economy by the year 2050. To aid in meeting these targets the NPF notes that the Government will aim to support the following objectives:

- Integrating climate considerations into statutory plans and guidelines. In order to reduce vulnerability to negative effects and avoid inappropriate forms of development in vulnerable areas.
- More energy efficient development through the location of housing and employment along public transport corridors, where people can choose to use less energy intensive public transport, rather than being dependent on the car.

Accordingly, it is envisioned that the national strategy will be supported, implemented and translated through the planning hierarchy by the local development plans and regional strategies.

2.3.2.1 Key Sustainability Elements of National Planning Framework

A key focus running throughout the NPF is the fostering of a transition toward a low carbon, climate-resilient society. In this regard, one of the stated key elements of the NPF is an Ireland which has a secure and sustainable renewable energy supply and facilitates the ability to diversify and adapt to new energy technologies.

The NPF further references the National Climate Policy Position which established the fundamental national objective of achieving transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050.

In relation to energy production, the NPF emphasises that rural areas have a strong role to play in securing a sustainable renewable energy supply for the country, and acknowledges that *"rural areas have significantly contributed to the energy needs of the country and continue to do so".* In this regard, the NPF states:

> *"In meeting the challenge of transitioning to a low carbon economy, the location of future national renewable energy generation will, for the most part, need to be accommodated on large tracts of land that are located in a rural setting, while also continuing to protect the integrity of the environment".*

Section 9 of the NPF addresses the theme of *"Realising Our Sustainable Future"* and sets out a number of National Policy Objectives under this subject, with a key focus on resource efficiency and the transition towards a low carbon economy. In relation to climate action and planning, the NPF reiterates the commitment of the Government to a long-term climate policy based on the adoption of a series of national plans over the period to 2050, informed by UN and EU policy, and progressed through the National Mitigation Plan and the National Climate Change Adaptation Framework.

Key features identified in the NPF to facilitate the transition towards a low carbon energy future include:

- A shift from predominantly fossil fuels to predominantly renewable energy sources.
- Increasing efficiency and upgrades to appliances, buildings and systems.
- Decisions around development and deployment of new technologies relating to areas such as wind, smartgrids, electric vehicles, buildings, ocean energy and bio energy.
- Legal and regulatory frameworks to meet demands and challenges in transitioning to a low carbon society.

The NPF reiterates that the "transition to a low carbon economy from renewable sources of energy is an integral part of Ireland's climate change strategy and renewable energies are a means for reducing our reliance on fossil fuels". This position is cemented in National Policy Objective 55 of the NPF which seeks to:

> *"Promote renewable energy generation at appropriate locations within the built and natural environment to meet objectives towards a low carbon economy by 2050".*

Section 10 of the NPF sets out a series of desired National Strategic Outcomes, underpinned by the national planning objectives set out in the NPF in combination with governance arrangements and aligned with capital investment. The transition towards a low carbon and climate resilient society is identified as one of the national strategic outcomes to guide the implementation of the NPF.

The NPF further emphasises that new energy systems and transmission grids will be necessary for a more distributed, more renewables focused energy generation system to harness the considerable on-shore and off-shore potential from energy sources such as wind, wave and solar and *"connecting the richest sources of that energy to the major sources of demand".* The NPF recognises that the development of on-shore and off-shore renewable energy is critically dependent on the development of enabling infrastructure including grid facilities to connect to major sources of energy demand.

In achieving this desired National Strategic Outcome of a transition to sustainable energy, the NPF re-emphasises the following national policy target of delivering *"40% of our electricity needs from renewable sources by 2020 with a strategic aim of in excess of 50% by 2030 and more by 2040 and beyond using wind, wave, solar, biomass and hydro sources".*

2.3.3 Draft Renewable Electricity Policy and Development Framework

The Renewable Electricity Policy and Development Framework (REPDF) has been formulated to ensure Ireland meets its future needs for renewable electricity in a sustainable manner compatible with environmental and cultural heritage, landscape and amenity considerations.

The Framework will contribute toward meeting Ireland's future energy needs, particularly up to 2030 and beyond, as informed by national and European policy, and will be reviewed at five-yearly intervals. The Policy and Development Framework will be primarily for the guidance of An Bord Pleanála, planning authorities, other statutory authorities, the general public and persons seeking development consent in relation to large scale projects for the generation of renewable electricity on land. It will set out policy in respect of environmental considerations, community engagement and in relation to potential, future export of renewable electricity. It will seek to broadly identify suitable areas in the State, where large-scale renewable electricity projects can be developed in a sustainable manner. The existing system for planning permission applications to local authorities or An Bord Pleanála will remain unchanged in respect of renewable electricity projects. These will still require planning permission, including environmental impact assessment where appropriate. It is proposed that the Policy and Development Framework will be focused on providing for renewable electricity projects of large scale. It is considered that a threshold of 50 MW and upwards would be appropriate, having regard to the provisions of the strategic infrastructure development legislation.

The most recent publicly circulated documentation in relation to the REPDF has indicated that it will have the following objectives:

- To maximise the sustainable use of renewable electricity resources in order to develop progressively more renewable electricity for the domestic and potentially, for future export markets.
- To assist in the achievement of targets for renewable energy, enhance security of supply and foster economic growth and employment opportunities. It will identify appropriate parts of the country for large renewable electricity projects and will assess the environmental impact of renewable electricity projects at various scales at a national level.
- To identify strategic areas on land for large scale renewable energy generation and this analysis will include a spatial component.
- In addition, the amended scope will include renewable electricity projects below this threshold (including wind and solar PV) at a national level.

The updated scope will also include an assessment of available grid capacity in relation to the location of large and medium-scale renewable electricity generation plants. This analysis will support the strategic planning and location decision making process for Data Centres in Ireland.

2.3.4 Regional and County Policy

2.3.4.1 Regional Spatial and Economic Strategy for the Southern Region

The Regional Spatial and Economic Strategy for the Southern Region (RSES) came into effect on 31st January 2020. The RSES seeks to achieve balanced regional development and full implementation of Project Ireland 2040 – the National Planning Framework. It will be implemented in partnership with local authorities and state agencies to deliver on this vision and build a cohesive and sustainable region. The RSES sets out a vision for the Southern Region to:

- Nurture all our places to realise their full potential
- Protect, and enhance our environment
- Successfully combat climate change
- Achieve economic prosperity and improved quality of life for all our citizens
- Accommodate expanded growth and development in suitable locations

- Make the Southern Region one of Europe's most creative, innovative, greenest and liveable regions

The RSES provides the framework through which the NPF's disruptive vision and the related Government policies and objectives will be delivered for the region.

With regards to climate change the RSES notes that:

> *"Climate Change represents the most serious threat to human life and the environment. If action is not taken on a global scale, global warming will continue to change weather patterns, cause sea levels to rise, threaten the future of entire nations and pose wider risks in terms of degradation of biodiversity, and threaten the planet's ability to provide adequate food and shelter for the human population."*

As noted and recognised by the RSES Ireland and the EU are signatories to the Paris Agreement, a legally binding international agreement to restrict global temperature rises to below 2°C above pre-industrial levels, and to limit any increase to 1.5°C to significantly reduce the risks and impacts of climate change. It is further noted that *'Ireland's international commitments also extend to the UN's Sustainable Development Goal 13, to 'take action to combat climate change and its impacts."*

Chapter 5 of the RSES notes details the regions plans and objectives with regards to the environment. The RSES underlines the need to:

> *"Safeguard and enhance our environment through sustainable development, transitioning to a low carbon and climate resilient society."*

The observed and predicted climate changes for Ireland include the following:

- An increase in average temperatures of 0.8% between 1900 and 2011 with projected increases across all seasons 0.9% -1.7% to 2050;
- Observed increases in rainfall with projected reductions in average levels for 3 seasons, but a substantial increase in frequency of heavy precipitation events;
- A projected increase in the number and intensity of storms in the North Atlantic;
- Sea levels rising at approximately 3.5cm per decade, continuing to rise up to 0.8m per decade;
- An increase in sea surface temperatures by 0.7C since 1850 with a projected warming of 1.9c by the end of the century.

The following objectives have been listed with regards to the decarbonisation of energy:

- **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 88- National Mitigation and National Adaption Framework**
  The RSES is committed to the implementation of the National Mitigation Plan and National Adaptation Framework: Planning for a Climate Resilient Ireland to enable the Region transition to a low carbon, climate resilient and environmentally sustainable economy. It is an objective to ensure effective co-ordination of climate action with the Climate Action Regional Offices and local authorities to implement the National Mitigation Plan and the National Adaptation Framework in the development and implementation of long-term solutions and extensive adaptation measures.

Further the following objectives have been put in place with regards to climate resilience:

- **RPO 89- Building Resilience to Climate Change**

a) 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;
b) Local Authorities and other public agencies shall continue to work with the Office of Public Works to implement the Flood Risk Management Plans and address existing and potential future flood risks arising from coastal, fluvial, pluvial, groundwater and potential sources of flood risk.

In relation to wind energy the RSES recognises and supports the many opportunities for onshore wind as a major source of renewable energy. It is noted that *'opportunities for both commercial and community wind energy projects should be harnessed, having regard to the requirements of DoHPLG Guidelines on Wind Energy'*. It is recognised that wind energy, with current and future developments technology, has an important role in delivering value and clean electricity for Ireland.

The following policies relating to wind energy development have been included in the RSES:

- **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 a 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 97- Power Stations and Renewable Energy**
  It is an objective to support the sustainable technology upgrading and conversion of power stations in the Region to increase capacity for use of energy efficient and renewable energy sources.
- **RPO 98- Regional Renewable Energy Strategy**
  It is an objective to support the development of a Regional Renewable Energy Strategy with relevant stakeholders.
- **RPO 99- Renewable Wind Energy**
  It is an objective to support the sustainable development of renewable wind energy (on shore and offshore) at appropriate locations and related grid infrastructure in the Region in compliance with national Wind Energy Guidelines.
- **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 221- Renewable Energy Generation and Transmission Network**
  a) Local Authority City and County Development Plans shall support the sustainable development of renewable energy generation and demand centres such as data centres which can be serviced with a renewable energy source (subject to appropriate environmental assessment and the planning process) to spatially suitable locations to ensure efficient use of the existing transmission network;
  b) The RSES supports strengthened and sustainable local/community renewable energy networks, micro renewable generation, climate smart countryside projects and connections from such initiatives to the grid. The potential for sustainable local/community energy projects and micro generation to both mitigate climate change and to reduce fuel poverty is also supported;
  c) The RSES supports the Southern Region as a Carbon Neutral Energy Region.

2.3.4.2 Cork County Development Plan 2014

The Proposed Development lies within the functional area of Cork County Council and therefore is subject to the provisions of the Cork County Development Plan 2014 – 2020. The Cork County Development Plan 2014 (CCDP) was adopted on 8th December 2014 and came into effect on 15th January 2015. Cork County Council is commencing the preparation of a new County Development Plan (2022-2028), this process remains in the pre-draft stage at time of writing, with various background documents having been released to inform the public discourse. Energy is dealt within in background document no. 9, in which the importance of on-shore wind energy is acknowledged, as is the valuable contribution wind farms are making towards decarbonising the economy. The published background document also notes that at this stage it is not envisaged that any significant changes are required to the county's wind energy policy.

The principal aim of the 2014 CCDP is to provide a blueprint for the development of County Cork for the latter part of this decade and the early years of the next, with its visions and main aims underpinned by the core principles of sustainability, social inclusion, quality of design and climate change adaptation.

A key aim of the CCDP is to ensure that sufficient energy and related infrastructure is available to meet the existing and future needs of County Cork, recognising the importance of exploiting the renewable energy resources of the County in order to reduce dependence on fossil fuels, improve security of supply, reduce greenhouse gas emissions helping to address the climate change challenge and creating environmental benefits while taking full advantage of the opportunities that will arise from the emerging renewable energy sector in terms of sustainable jobs and making a positive contribution towards the move to a competitive, low carbon green economy and enhancing national competitiveness.

The Cork County Development Plan also contains a Wind Energy Strategy (WES) which includes provisions relating to wind deployment areas, development management standards, site selection, visibility and visual amenity.

The CCDP acknowledges the key strategic role Cork plays in energy provision in Ireland and recognises that energy generation and energy-related activity in Cork is likely to change significantly over the coming years, including the continuing movement towards a low carbon-based economy. The Plan further emphasises that the development of renewable energy sources is central to overall energy policy in Ireland and a key aim of the CCDP is to support the sustainable development of renewable energy sources. Accordingly, the following objectives are seen as key in aiding this transition whilst ensuring that energy demands are also met to sustain existing and future requirements, attracting inward investment and reinforce County Cork's position to becoming self-sufficient in renewable energy:

- **County Development Plan Objective ED 1-1:**
  "Ensure that through sustainable development County Cork fulfils its optimum role in contributing to the diversity and security of energy supply and to harness the potential of the county to assist in meeting renewable energy targets".
- **County Development Plan Objective ED 3-2:**
  "Wind Energy Projects On-shore wind energy projects should focus on areas considered 'Acceptable in Principle' and Areas 'Open to Consideration' and generally avoid "Normally Discouraged" areas in this Plan".
- **County Development Plan Objective ED 3-3:**
  "Wind Energy Generation Support a plan led approach to wind energy development in County Cork and identify areas for wind energy development. The aim in identifying these areas is to ensure that there are no significant environmental constraints, which could be foreseen to arise in advance of the planning process".

The development of renewable energy sources is central to overall energy policy in Ireland. It is noted that *'renewable energy reduces dependence on fossil fuels, improves security of supply, and reduces greenhouse gas emissions, protection against climate change while delivering new jobs to the economy'*. The Plan aims to support the sustainable development of renewable energy sources. Section 9.3 of the Cork County Development Plan 2014 sets out the councils On-Shore Energy strategy.

The Plan identifies, in broad strategic terms, three categories of 'Wind Deployment Area' for large scale commercial wind energy developments as shown in Figure 2-4. These categories are as follows:

- **'Acceptable in Principle':** These areas (River Ilen basin north of Skibbereen and an area south of Macroom) are in optimal locations for wind farm development without significant environmental impacts. They have viable wind speeds (>7.5m/s) and good proximity and access to the grid. These areas exclude urban areas and town green belts, avoid Natura 2000 Sites, high value landscapes and Natural Heritage Areas.
- **'Open to Consideration':** This area comprises almost 50% of the County area. Within these areas there are locations that may have the potential for wind farm developments but there are also some environmental issues to be considered. This area has variable wind speeds and some access to the grid.
- **'Normally Discouraged'**: These areas (coastal areas, some areas in North Cork, Cork Harbour and the Lee Valley) are normally not suitable for commercial wind farm developments due to their overall sensitivity arising from ecological, landscape, amenity, recreational and settlement considerations.

Contained within the Cork County Development Plan 2014-2020 are Plan Objectives corresponding to each of the above categories. These are as follows:

County Development Plan ED 3-4: Acceptable in Principle – Commercial wind energy development is normally encouraged in these areas subject to protection of residential amenity particularly in respect of noise, shadow flicker, visual impact and the requirements of the Habitats, Birds, Water Framework, Floods and EIA Directives.

County Development Plan ED 3-5: Open to Consideration – Commercial wind energy development is open to consideration in these areas where proposals can avoid adverse impacts on:

- Residential amenity particularly in respect of noise, shadow flicker and visual impact
- Urban areas and Metropolitan/Town Green Belts;
- Natura 2000 Sites (SPA and SAC), Natural Heritage Areas (NHAs) or adjoining areas affecting their integrity;
- Architectural and archaeological heritage;
- Visual quality of the landscape and the degree to which impacts are highly visible over wider areas.

County Development Plan ED 3-6: Normally Discouraged – Commercial wind energy developments will be discouraged in these areas which are considered to be sensitive to adverse impacts associated with this form of development (either individually or in combination with other developments).

The study area for the Proposed Development is highlighted in green on Figure 2-4. As can be seen from this figure, the site of the Proposed Development is located in an area designated 'Open to Consideration'. Accordingly, in relation to the provisions of ED 3-5 above, any Proposed Development must demonstrate that it can avoid adverse impacts on five listed criteria. The current proposed renewable energy development is on a site that has previously been considered appropriate for the provision of wind farm infrastructure as evidenced in the grant of permission which issued for 10 no. turbines at this location under the provisions of pl. ref. 00/6590 ABP ref 04.127297. Notwithstanding this the Proposed Development satisfies the requirements of ED 3-5 as follows:

Residential amenity particularly in respect of noise, shadow flicker and visual impact

With regards to noise a full assessment of the potential impacts arising has been undertaken and is provided in Chapter 11 of this EIAR. There are 83 no. noise sensitive locations (NSL) within 3.5 km of the proposed turbine locations. The nearest noise sensitive location is located approximately 760 meters from the nearest proposed turbine location. The predicted noise levels associated with the Proposed Development will be within best practice noise criteria curves recommended in Irish guidance 'Wind Energy Development Guidelines for Planning Authorities' therefore, it is not considered that a significant effect is associated with the Proposed Development.

A shadow flicker assessment was carried out and presented under Chapter 5 of this EIAR. Of the properties modelled it is predicted that six may potentially experience daily shadow flicker in excess of

the DoEHLG guideline threshold of 30 minutes per day. This prediction is assuming worst-case conditions and in the absence of any turbine control measures. Of the 6 No. properties where shadow flicker is predicted to occur, when the regional sunshine average (i.e. the mean number of sunshine hours throughout the year) of 32.5% is taken into account, the DoEHLG total annual guideline limit of 30 hours is predicted as not being exceeded at any of the modelled properties. Based on the shadow flicker assessment and the mitigation measures proposed under Chapter 5 it is concluded that there will be no significant effects related to shadow flicker.

Noise and shadow flicker arising from any Proposed Development are identifiable and controllable phenomena that are, as standard practice, mitigated and monitored by condition throughout the operational phase of any permitted development.

In relation to landscape and visual impact as per Chapter 12 of this report it is noted that there are no areas of High Value Landscape which fall within the Proposed Development site. Further it should be noted that the Proposed Development site is not included in any of these important landscape or heritage areas. The Proposed Development also provides appropriate separation distances between turbines and residential properties to ensure that amenities will not be adversely affected. It should be further noted that a wind farm development of 10 turbines has previously existed at this site and as such the current proposal will not be introducing a new element/feature within this landscape. While the 10 turbines have been removed from the site the principle of the development type in the area is evident. Accordingly it is considered that the Proposed Development will not have an adverse impact on residential amenities in the context of visual impact.

Urban areas and Metropolitan/Town Green Belts;

The Proposed Development will not give rise to any adverse effects on any urban areas or metropolitan/town green belts. The Proposed Development is located approximately 9km from the rural village of Ballingeary, approximately 12km from Ballylickey and approximately 16km from Bantry which is the largest town in the general area. The separation distance between the Proposed Development and urban, metropolitan and greenbelt areas are such that the Proposed Development will not give rise to adverse impact.

Natura 2000 Sites (SPA and SAC), Natural Heritage Areas (NHAs) or adjoining areas affecting their integrity;

A Natura Impact Statement (NIS) has been prepared to accompany the proposed planning application. In assessing the Proposed Development, it was the conclusion of the NIS that:

> *"Following an examination, evaluation and analysis, in light of best scientific knowledge and the conservation objectives of the site, and, on the basis of objective information, having taken into account the relevant mitigation measures, it can be concluded that the Proposed Development will not have an adverse impact on any European Sites, either alone or in combination with other plans or projects."*

With regards to NHA's and pNHA's the closest site to the Proposed Development is located 5.0m to the north-west of the EIAR Site Boundary. As assessed under Chapter 6 there are no significant effects anticipated, any potential effects associated with the construction and operational phase drainage in this regard has been fully mitigated through appropriate design and mitigation.

Architectural and Archaeological Heritage;

Chapter 13 of this EIAR presents an assessment of the potential impacts of the Proposed Development on cultural heritage. There were five recorded monuments within the EIAR site boundary. The wind farm layout and proposed infrastructure has been fully informed by, and avoided, their locations. As such no direct impacts to any of the aforementioned sites will occur. The sub-surface archaeological potential of the Proposed Development area is considered to be low taking into account that the previously constructed wind farm site at Curraglass was subject to full time archaeological monitoring during which time no features were uncovered. In relation to the current proposal, Archaeological monitoring will take place during construction of areas in undisturbed ground. In relation to the setting of national monuments in the wider area, Chapter 13 acknowledges that there could be potential for impacts to arise,

however, following assessment the potential for such impacts are considered to be slight predominantly due to the intervening distance and the varying degrees of visibility.

Visual quality of the landscape and the degree to which impacts are highly visible over wider areas

Through the iterative project design process, informed by early-stage visual impact assessment work, landscape modelling, Zone of Theoretical Visibility (ZTV) mapping and photomontage preparation, the proposed layout has been developed to bring forward the optimum design for the Proposed Development with respect to landscape and visual factors. The landscape study area has been chosen as 25 kilometres for visual and landscape effects. As demonstrated in Section 12.5 of this EIAR the ZTV shows the potential range of visual effect that could arise. The ZTV shows a worse case "bare earth" scenario and therefore does not account for smaller topographical features, planting and screening arising from natural hedgerows and elements of the built environment. On review the ZTV of this project demonstrates that there will be no significant adverse impacts arising on any viewpoints, scenic routes or areas that have been designated as being of "High Landscape Value" within the County Development Plan.

Landscape Policy

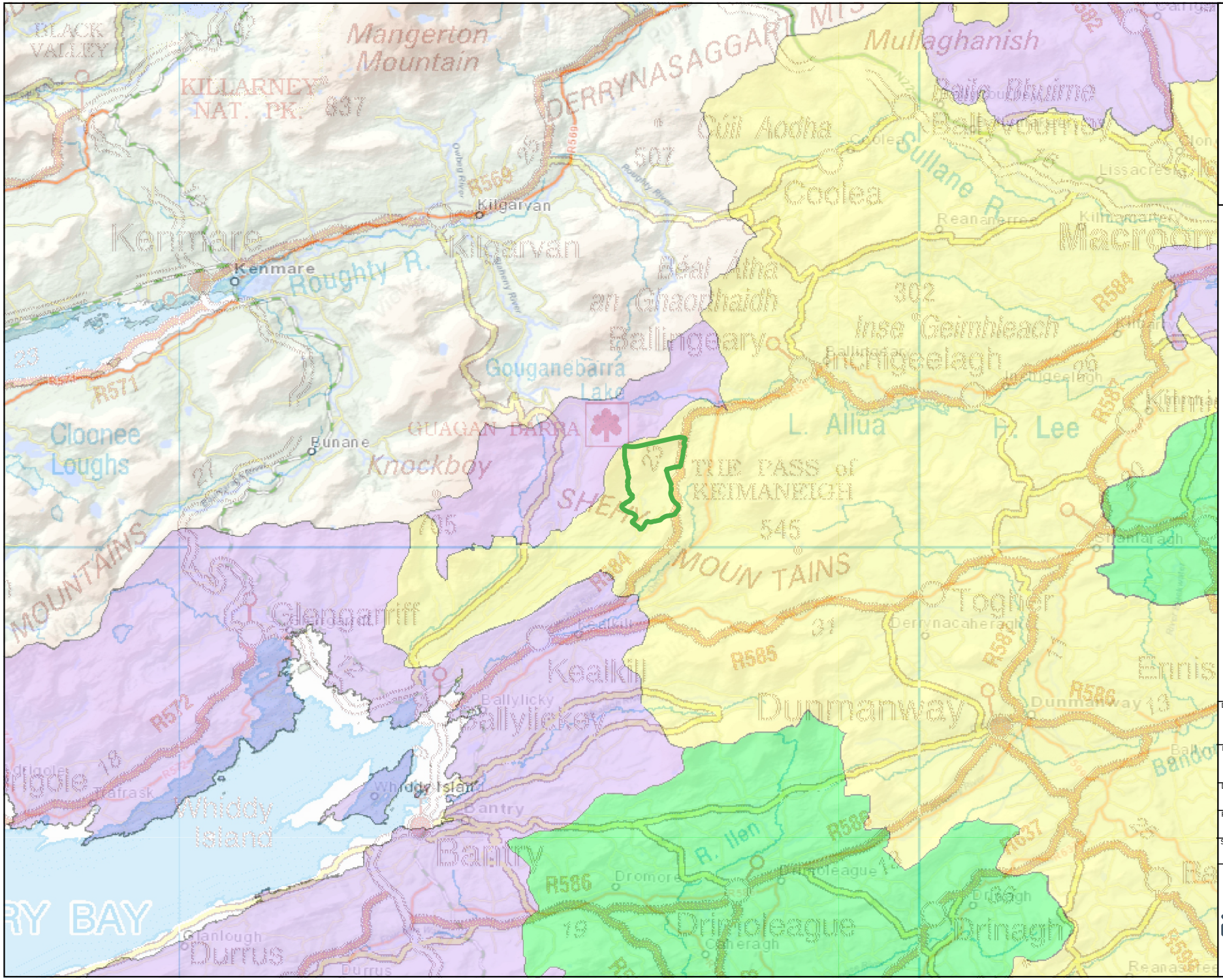
General policy on landscape is covered in the CDP by the following objectives:

> ***Objective GI 6-1: Landscape***
> *(a) Protect the visual and scenic amenities of County Cork's built and natural environment.*
> *(b) Landscape issues will be an important factor in all landuse proposals, ensuring that a proactive view of development is undertaken while maintaining respect for the environment and heritage generally in line with the principle of sustainability.*
> *(c) Ensure that new development meets high standards of siting and design.*
> *(d) Protect skylines and ridgelines from development.*
> *(e) Discourage proposals necessitating the removal of extensive amounts of trees, hedgerows and historic walls or other distinctive boundary treatments.*
>
> ***Objective GI 6-2: Draft Landscape Strategy***
> *Ensure that the management of development throughout the County will have regard for the value of the landscape, its character, distinctiveness and sensitivity as recognised in the Cork County Draft Landscape Strategy and its recommendations, in order to minimise the visual and environmental impact of development, particularly in areas designated as High Value Landscapes, where higher development standards (layout, design, landscaping, materials used) will be required.*

Chapter 12 of this EIAR presents a detailed and comprehensive analysis of the Proposed Development in the context of its landscape setting. In summary it finds the landscape character of the proposed development site will undergo a change in character by the introduction of vertical structures just below the ridgeline from its present condition. It is further noted that the site has previously been used for wind energy generation until the previous turbines were dismantled in 2018. As such it was assessed that there is a previous precedent to introducing vertical structures to this site.

2.3.4.2.1 *Summary Conclusion on Compliance with Development Plan*

In summary the County Development Plan fully recognises the importance of combating climate change and deriving more energy from renewable sources. The Proposed Development which constitutes the provision of wind turbines within an area that previously accommodated a ten turbine wind farm and which has been designated as being an area "Open to Consideration" for the provision of wind energy infrastructure is compliant with the relevant County Development Plan provisions. Furthermore, the Biodiversity and Landscape sections of this EIAR demonstrate that the proposal will not give rise to significant adverse impacts on natural heritage, landscape or visual amenity. The Noise and Shadow flicker assessments also show that the Proposed Development will not give rise to significant adverse impacts on residential amenity. The County Development Plan makes it clear that with regards to planning policy context and the Wind Energy Strategy, appropriate wind energy developments are supported at this location. Accordingly, the Proposed Development is compliant with the relevant provisions of the Cork County Development Plan 2014 - 2020.



Map Legend

- EIAR Site Boundary

Cork Wind Energy Strategy 2014

- Acceptable in Principle
- Open to Consideration
- Normally Discouraged

N

Drawing Title: Wind Energy Strategy 2014

Project Title: Curraglass Renewable Energy Development, Co. Cork

Drawn By	Checked By
Órla Murphy	Michael Watson
Project No.	Figure No.
190301	Figure 2-4
Scale	Date
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2.3.5 Other Relevant Guidelines

2.3.5.1 Interim Guidelines for Planning Authorities on Statutory Plans, Renewable Energy and Climate Change 2017

In July 2017, the Department of Housing, Planning, Community and Local Government (DoHPCLG) published '*Interim Guidelines for Planning Authorities on Statutory Plans, Renewable Energy and Climate Change'* under Section 28 of the Planning and Development Act 2000. Planning authorities are obliged to have regard to guidelines issued pursuant to Section 28 in the performance of their functions under the Planning and Development Act 2000 (as amended).

The guidelines state that it is a specific planning policy requirement under Section 28(1C) of the Act, that in making a development plan with policies or objectives that relate to wind energy developments that a Planning Authority must:

1. "Ensure that overall national policy on renewable energy as contained in documents such as the Government's 'White Paper on Energy Policy - Ireland's Transition to a Low Carbon Future', as well as the 'National Renewable Energy Action Plan', the 'Strategy for Renewable Energy' and the 'National Mitigation Plan', is acknowledged and documented in the relevant development plan or local area plan;
2. Indicate how the implementation of the relevant development plan or local area plan over its effective period will contribute to realising overall national targets on renewable energy and climate change mitigation, and in particular wind energy production and the potential wind energy resource (in megawatts); and
3. Demonstrate detailed compliance with item number (2) above in any proposal by them to introduce or vary a mandatory setback distance or distances for wind turbines from specified land uses or classes of land use into their development plan or local area plan. Such a proposal shall be subject to environmental assessment requirements, for example under the SEA and Habitats Directives. It shall also be a material consideration in SEA, when taking into account likely significant effects on climatic factors, in addition to other factors such as landscape and air, if a mandatory setback or variation to a mandatory setback proposed by a planning authority in a development plan or local area plan would create a significant limitation or constraint on renewable energy projects, including wind turbines, within the administrative area of the plan."

2.3.5.2 DoEHLG Wind Energy Guidelines 2006

In June 2006, the then Department of Environment, Heritage and Local Government (DoEHLG) published '*Wind Energy Development Guidelines for Planning Authorities'* (the Guidelines) under Section 28 of the Planning and Development Act, 2000. The aim of these guidelines was to assist the proper planning of wind power projects in appropriate locations around Ireland. The Guidelines highlight general considerations in the assessment of all planning applications for wind energy. They set out advice to planning authorities on planning for wind energy through the development plan process and in determining applications for planning permission. They contain guidelines to ensure consistency of approach throughout the country in the identification of suitable locations for wind energy development.

Each wind project has its own characteristics and defining features, and it is therefore impossible to write specifications for universal use. Guidelines should be applied practically and do not replace existing national energy, environmental and planning policy.

2.3.5.3 Department Circular PL5/2017

On the 3rd of August 2017, the Department of Housing, Planning and Local Government issued Circular PL5/2017 to provide an update on the review of the wind energy and renewable policies in development plans, and the advice contained within a previous Departmental Circular PL20-13. Circular PL20-13 advised that local authorities should defer amending their existing Development Plan policies in relation to wind energy and renewable energy generally as part of either the normal cyclical six-yearly review or plan variation processes and should instead operate their existing development plan policies

and objectives until the completion of a focused review of the Wind Energy Development Guidelines 2006. The new circular (PL05/2017) reconfirms that this continues to be the advice of the Department.

The Department circular also sets out the four key aspects of the *preferred draft approach* being developed to address the key aspects of the review of the 2006 Wind Energy guidelines as follows:

- The application of a more stringent noise limit, consistent with World Health Organisation noise standards, in tandem with a new robust noise monitoring regime, to ensure compliance with noise standards;
- A visual amenity setback of 4 times the turbine height between a wind turbine and the nearest residential property, subject to a mandatory minimum distance of 500 metres between a wind turbine and the nearest residential property;
- The elimination of shadow flicker; and
- The introduction of new obligations in relation to engagement with local communities by wind farm developers along with the provision of community benefit measures.

2.3.5.4 IWEA Best Practice Guidelines for the Irish Wind Energy Industry 2012

The Irish Wind Energy Association (IWEA) published updated Wind Energy Best Practice Guidelines for the Irish Wind Industry in 2012. The guidelines aim to encourage and define best practice development in the wind energy industry, acting as a reference document and guide to the main issues relating to wind energy developments. The purpose of the guidelines is to encourage responsible and sensitive wind energy development, which takes into consideration the concerns of local communities, planners, and other interested groups. The guidelines outline the main aspects of wind energy development with emphasis on responsible and sustainable design and environmental practices, on aspects of development which affect external stakeholders, and on good community engagement practices. In approaching the development of IWEA's guidelines the aim was to be complementary to the Department of the Environment Heritage and Local Government's 'Wind Energy Development Guidelines' (2006).

2.3.5.5 IWEA Best Practice Principles in Community Engagement and Community Commitment 2013

Following on from the IWEA published Best Practice Guidelines in March 2012, the Association extended its guidance with the publication of this Best Practice in Community Engagement and Commitment. IWEA and its members support the provision of financial contributions by wind farm operators to local communities and have sought to formulate best practice principles for the provision of a community commitment. The document sets out IWEA's best practice principles for delivering extended benefits to local communities for wind farm developments of 5 Megawatts (MW) or above. Best Practice Principles of community engagement when planning the engagement strategy and preparing associated literature are also outlined in the document. The aim of these guidelines is to ensure that the views of local communities are taken into account at all stages of a development and that local communities can share in the benefits.

Further details on the community engagement that has been undertaken as part of the Proposed Development are presented in Section 2.6 below.

2.3.5.6 Code of Practice for Wind Energy Development in Ireland- Guidelines for Community Engagement 2016

In December 2016, the Department of Communications, Climate Action and Environment (DCCAE) issued a Code of Practice for wind energy development in relation to community engagement. The Code of Good Practice is intended to ensure that wind energy development in Ireland is undertaken in adherence with the best industry practices, and with the full engagement of local communities. Community engagement is required through the different stages of a project, from the initial scoping, feasibility and concept stages, right through construction to the operational phase. The methods of engagement should reflect the nature of the project and the potential level of impact that it could have on a community. The guidelines advise that ignoring or poorly managing community concerns can have

long-term negative impacts on a community's economic, environmental or social situation. Not involving communities in the project development process has the potential to impose costly time and financial delays for projects, or prevent the realisation of projects in their entirety. Community engagement in relation to the Proposed Development is discussed in full in Section 2.6 below.

2.3.5.7 Commission for Regulation of Utilities: Grid Connection Policy

The Commission for Regulation of Utilities (CRU) (previously the Commission for Energy Regulation (CER)) launched a new grid connection policy in March 2018 for renewable and other generators, known as ECP-1, which seeks to allow *"shovel ready"* projects that already have a valid planning permission, connect to the electricity networks. The principal objective which guides this decision is to allow those projects to have an opportunity to connect to the network, along with laying the foundations for future, more regular batches for connection. In August 2018, the applicants for new connection capacity under ECP-1 were published. The CRU is expected to launch the second round of grid connection offers knows an ECP-2 in the middle of 2020.

The enduring connection policy regime replaces the previous 'Gate' system of grid connection applications. The grid connection application window under ECP-1 is the first time since 2007 that certain renewable energy projects including wind farms have an opportunity to secure a new grid connection offer.

2.3.5.8 Renewable Energy Support Scheme (RESS)

The Climate Action Plan, published in June 2019, is the Government's plan to give Irish people a cleaner, safer and more sustainable future. The Plan sets out actions across every sector which will ensure we meet our future climate commitments. A key part of the Plan is a move to 70% renewable electricity by 2030, a measure which will be driven by the introduction of the Renewable Electricity Support Scheme ('RESS').

The RESS is an auction-based scheme which invites renewable electricity projects to bid for capacity and receive a guaranteed price for the electricity they generate. The Terms and Conditions for the first competition (RESS 1:2020) was published in February 2020 and will provide support to renewable electricity projects in Ireland. The RESS will deliver, amongst other policy objectives:

> *"An ambitious renewable electricity policy to 2030 increasing energy security, energy sustainability and ensuring the cost effectiveness of energy policy"*

The Scheme will provide for a renewable electricity (RES-E) ambition of up to 70% by 2030, subject to determining the cost-effective level which will be set out in the draft National Energy and Climate Plan (NECP). The first RESS-1 auction will take place within the timelines set out in the Climate Action Plan. All projects looking for support under the new RESS will need to meet pre-qualification criteria.

The RESS 1 Auction will be administered in accordance with, inter alia, the following high-level steps:

> *"(a) the TSO[2] will accept Applications for Qualification;*
>
> *(b) Applicants (other than Applicants in respect of Community Zero-Bond Projects) will post their Bid Bonds no later than the Bid Bond Posting Date;*
>
> *(c) the eligibility criteria set out in Section 6.4 of these Terms and Conditions will be assessed by the TSO for each Application for Qualification received;*
>
> *(d) a Provisional Qualification Decision will be made by the TSO;*
>
> *(e) Final Qualification Results are prepared and notified to Applicants and an Offer Price is submitted by each Qualified Applicant to the TSO; and*

[2] *Transmission System Operator as defined in the Terms and Conditions*

(f) the RESS 1 Auction will be conducted and Awards will then be notified to Successful Applicants."

Qualified Applicants that submit eligible Offers will compete against each other on the basis of three Preference Categories, namely: (i) the Community Preference Category; (ii) the Solar Preference Category; and (iii) the All Projects Preference Category.

The RESS 1 Auction will be open to New Projects which rely on the following equipment to produce electricity:

- Onshore wind
- Offshore wind
- Onshore energy projects using solar thermal or solar photovoltaic technology
- Hydro
- High efficiency CHP boilers (fueled by waste, biomass or biogas

In terms of eligibility requirements, the following are noted in the Terms and Conditions:

- *"RESS 1 Projects are required to have full planning permission for the construction of the electricity generating plant at the Site as described in the Application for Qualification.*
- *The RESS 1 Project must be (i) a Grid Contracted Project or (ii) an ECP-1 Project that is eligible to be processed to receive a valid connection offer, in both cases with a capacity at least equal to the Offer Quantity of the relevant RESS 1 Project.*
- *The Site of the RESS 1 Project must be specified using Irish Transverse Mercator and Applicants must possess and demonstrate control of this Site and the right to access this Site for the purposes of developing and operating the RESS 1 Project.*
- *The RESS 1 Project must be financeable under the Terms and Conditions and at the Offer Price to be submitted by the Qualified Applicant.*
- *The RESS 1 Project must meet the requirements of a New Project. Compliance with this requirement must be evidenced by a director declaration ("Declaration of New Project") that the RESS 1 Project meets the New Project criteria.*
- *An Applicant must specify the Preference Category or Categories for which it is applying in its Application for Qualification"*

Applicants will also be required to provide other additional information in the Application for Qualification such as but not limited to a description of the renewable energy technology and equipment to be utilised for the RESS 1 project; the maximum export capacity of the plan; a list of all entities with an ownerships or equity interests in the Project.)

The Scheme will provide for a renewable electricity (RES-E) ambition of up to 70% by 2030, subject to determining the cost-effective level which will be set out in the draft National Energy and Climate Plan (NECP). The first RESS-1 auction will take place within the timelines set out in the Climate Action Plan. All projects looking for support under the new RESS will need to meet pre-qualification criteria.

2.3.5.9 Forest Service Guidelines

The Forest Service is responsible for ensuring the development of Forestry within Ireland in a manner and to a scale that maximises its contribution to national socio-economic well-being on a sustainable basis that is compatible with the protection of the environment. The forestry works (felling/planting) associated with the Proposed Development will be carried out under the relevant guidance from the Forestry Service.

2.3.5.10 Draft Guidelines

2.3.5.10.1 *DoEHLG Wind Energy Guidelines 2006 (Revisions)*

Further to the noted in Section 2.3.5.2 it should be acknowledged that the Department of the Environment, Community and Local Government published proposed revisions to the guidelines in December 2013 as part of a targeted review relating to Noise, Proximity and Shadow Flicker for discussion. Revisions to the Wind Energy Guidelines continue to be considered and draft revisions were published in December 2019, these are further discussed below.

2.3.5.10.2 *Draft Revised Wind Energy Development Guidelines, December 2019*

The Department of Housing, Planning and Local Government published the *Draft Wind Energy Guidelines* (referred to as the Draft Revised Guidelines) in December 2019 and these Draft Guidelines were under public consultation until 19th February 2020. Following the previous 2013 consultation and subsequent detailed engagement between the relevant Government Departments, a "preferred draft approach" to inform and advance the conclusion of the review of the 2006 guidelines was announced in June 2017.

In line with the previously stated "preferred draft approach", the 2019 Draft Guidelines primarily focus on addressing a number of key aspects including, but not limited to:

- Acceptable noise thresholds and monitoring frameworks;
- Visual amenity setback and spacing;
- Control of shadow flicker;
- Compliance with Community consultation and dividend requirements, as included within the obligatory Community Report; and
- Consideration of the siting, route and design of the proposed grid connection as part of the whole project.

The design of the proposed project has taken account of the "preferred draft approach" as articulated by the Department in June 2017, and accordingly, has been developed with the provisions of the current Draft guidelines in mind. At time of writing the Draft Guidelines are not yet in force, and the various public submissions to the Draft remain under the review of the Department. It is therefore not known what the final version of the updated Guidelines will be and the relevant guidelines remain those published in 2006. Notwithstanding this, however, where possible the Draft Guidelines have been used to inform the design of the Proposed Development. In this regard it should be noted that no turbine is proposed within 4-times tip height of any third party dwelling, furthermore both potential shadow flicker and noise impacts have been assessed in detail within this EIAR, and both these phenomena can be controlled through the operational stages to ensure compliance with any relevant standards.

2.4 Planning History

This Section of the EIAR sets out the relevant planning history of the Proposed Development site, planning applications in the vicinity of the site and other wind energy applications within the wider area.

2.4.1 Proposed Development Site

The following planning applications relate to the previous wind farm proposal approved on the site of the current Proposed Development.

Pl.Ref.00/6590- South Western Services Co-Op Ltd. applied to Cork County Council for a windfarm to include 10 no. turbines, 2 no. meteorological masts, substation with control building, site tracks, upgrading of site access & assoc. works. The Planning Authority granted permission which was upheld by An Bord Pleanála. This wind farm was commissioned in 2006, however, the turbines were removed by the operator in June2018, due to issues arising from the maintenance of the turbine technology that had

been deployed on site.. Therefore, giving the opportunity to provide more modern renewable generating technology more suited to the site conditions.

The wind farm that was in place at this location was constructed under the provisions of this permission and accordingly the conditions attached to this previously permitted and constructed wind farm are set out in Appendix 2-1-along with relevant commentary.

Pl.Ref.03/3773- The Electricity Supply Board applied to Cork County Council for construction of two overhead 38kv lines. The application was lodged with Cork County Council on the 28th of July 2003, the application was granted by the Planning Authority on the 28th of October 2003. The overhead 38kv lines have been constructed and are currently in place. The existing lines connect into the substation that was permitted and constructed under Pl.Ref.00/6590. It is the intention of the current application to, where possible, utilise the existing infrastructure within the area including the permitted substation under 00/6590 and the 38kv lines under 03/3773.

Pl.Ref.03/6910: Gaoithe Glas Teo applied to Cork County Council for modifications to a previously permitted 10 no. turbine windfarm to include increase in hub height from 47m to 65m, increase in blade tip height from 75m to 91m and the movement of a number of turbines to new locations. The Planning Authority granted permission, An Bord Pleanála subsequently refused permission.

Pl.Ref.19/519: Redfaze Limited applied to Cork County Council for retention of the existing electricity substation and associated facilities at Curraglass, and permission for the construction of an extension to the existing electricity substation, comprising up to 4 no. battery storage units, palisade fencing, bunded concrete plinths, associated electrical equipment, transformers and all ancillary site works. The Planning Authority refused permission, and following appeal An Bord Pleanála (ABP-306263-19) also refused permission. The refusal reason issued was on the basis that the subject works were inappropriate as they had not been justified as facilitating renewable energy development at this location.

2.4.1.1 Other Wind Farm Developments

The planning history of other relevant wind farm developments in the general vicinity of the Proposed Development are listed below, where there are ancillary applications related to renewable energy, details of these have also been provided in the interests of completeness. The wind farm developments listed below are all within a 20-kilometre radius of the site of the current proposal.

Inchee Wind Farm

Pl.Ref.05/9528: Gearoid Twomey applied for the erection of 1 no. 80m high wind turbine, 90m rotor blade diameter, on site tracks and cabling. The Planning Authority granted permission.

Pl.Ref.05/9488: Sean Twomey applied for the erection of 1 no. 80m high wind turbine, 90m rotor blade diameter, on site tracks and cabling. The Planning Authority granted permission.

Pl.Ref.06/8272: Gearoid Twomey applied for the erection of 1 no. wind turbine of 80m hub height and 90m diameter rotor blade and on site tracks, cabling and hard standing. The Planning Authority refused permission.

Pl.Ref.06/8273: Sean Twomey applied for the erection of 1 no. wind turbine of 80m hub height and 90m diameter rotor blade, on site tracks, cabling and hardstanding. The Planning Authority granted permission on the 21/11/2006.

The permission for the Inchee Wind Farm has expired

Cleanrath Wind Farm

Pl.Ref.15/6966: Cleanrath Windfarm Ltd applied for 11 no. wind turbines with a maximum ground to blade tip height of up to 150m, and all associated site works including grid connection The Planning Authority granted permission, whose decision was upheld by An Bord Pleanála(Ref no 246742.) on the 19/05/2017. Permission for the grid connection route was also incorporated within this permission, with a

separate application for that part of the grid connection within County Kerry being granted under a separate permission.

Cleanrath Wind Farm has been recently constructed.

Derragh Wind Farm

Pl.Ref.12/5270: Framore Ltd applied to Cork County Council for the development of 6 turbines (each with a total tip height of 150m), and all associated works. The Planning Authority granted permission which was upheld by An Bord Pleanála (Ref No.04.242223) on the 15/11/2013.

Derragh Wind Farm has been recently constructed.

Shehy More Wind Farm

Pl.Ref.13/551: Shehy More Windfarm Ltd applied for a wind farm of 12 no. turbines, with a maximum overall blade tip height of up to 131m, and all associated works The Planning Authority granted permission which was upheld by An Bord Pleanála (Ref no. 04.243486)on 23/12/2016.

Pl.Ref.16/256: Shehy More Windfarm Ltd applied to Cork County Council for a ten year permission to construct an underground electricity cable. The proposed underground electricity cable will be 38kV, will run predominantly within the public road corridor and is intended to connect the proposed Shehy More Wind Farm (Pl. Ref. 13/551, An Bord Pleanála PL04. 243486) to the National Grid via either the permitted substation at Garranareagh (Pl. Ref. 11/6605, An Bord Pleanála PL04.219620) or the currently proposed substation at Barnadivane (Kneeves) (Pl. Ref. 14/557, An Bord Pleanála PL04.244439). The Planning Authority granted permission which was upheld by An Bord Pleanála (Ref. No.88.246915) on 23/12/2016.

Shehy More wind farm at the time of lodgement was under construction.

Carrigarierk Wind Farm

Pl.Ref.15/730: Keel Energy Limited applied for planning permission for the construction of a 5 turbine wind farm , with a maximum ground to blade tip height of up to 140m, and all associated services. The Planning Authority refused permission, An Bord Pleanála (Ref. no. 04.246353)overturned the decision and granted permission on the 28/10/2016.

Pl.Ref.17/431: Keel Energy Limited applied for planning permission for the (1) A 110kV electricity substation including 2 no. control buildings associated electrical plant and equipment, underground electricity cabling, fencing, alterations to a previously permitted borrow pit and temporary construction compound at the Carrigarierk Wind Farm (An Bord Pleanala Ref. PL04.246353, Cork County Council Ref. 15/730) in the townland of Carrigdangan; (2) 110kV underground electricity cabling connecting the proposed substation to the existing Dunmanway ESB substation; (3) 33kV underground electricity cabling connecting the proposed substation to the permitted Carrigarierk Wind Farm through the townlands of Carrigdangan and Gortatanavally and the permitted Shehy More Wind Farm (ABP Ref. PL04.243486; Cork County Council Ref. 13/551). The Planning Authority granted permission which was upheld by An Bord Pleanála (301563-18) on the 21/06/2019.

Carrigarierk Wind Farm at the time of lodgement was under construction.

Derreenacrinnig West Wind Farm

Pl.Ref.10/857: George O'Mahony applied for a seven turbine wind farm with a hub height of 55 metres and a rotor diameter of 52 metres, and all associated The Planning Authority granted permission which was upheld by An Bord Pleanála (Ref no.88.239767) on the 05/12/2012.

Pl.Ref.19/10: The Electricity Supply Board applied for the installation of approximately 3.2km of underground cable ducting and associated electrical cabling, approximately 1.2km of overhead line supported on wood polesets, and all other ancillary works. The remainder of the cable is subject to an application for leave to apply for substitute consent to An Bord Pleanála Reference 302837-18. The

Planning Authority granted permission which is at present on appeal with An Bord Pleanála under 305790-19.

ABP.Ref.04.302837: ESB Networks/ Brendan Allen applied for leave to apply for substitute consent for a grid connection circuit between Derreenacrinnig West Windfarm and Ballylickey ESB sub-station. An Bord Pleanála granted leave to apply on the 23/05/2019.

ABP.Ref.04.304999: ESB Networks applied to An Bord Pleanála for an extension of time to apply for substitute consent for a grid connection circuit between Derreenacrinnig West Windfarm and Ballylickey ESB sub-station. An Bord Pleanála granted the extension on the 06/08/2019.

ABP.Ref. 04 305609: The Electricity Supply Board applied for substitute consent to An Bord Pleanála for the Dreenacrinning West Windfarm grid connection. The application for leave to apply was granted by An Bord Pleanála on the 23/05/2019.

ABP.Ref.04.305609: The Electricity Supply Board have applied to An Bord Pleanála for substitute consent for a grid connection for the Dreenacrinning West Windfarm. An Bord Pleanála granted permission on the 09/06/2020.

Derreenacrinnig West Wind Farm at the time of lodgement is not constructed.

Millane Hill Wind Farm

Pl.Ref.98/1482: B9 Energy Services Ltd applied for construction of a wind farm comprising of 10 no.turbines and all associated works. The Planning Authority granted permission which was upheld by An Bord Pleanála (Ref no. 04/108950) on the 25/05/1999.

Millane Hill Wind Farm at the time of lodgement is operational.

Currabwee Wind Farm

Pl.Ref.98/680: Patrick Kingston applied to Cork County Council for construction and operation of a wind farm consisting of 8 no. 600 kW wind turbines and associated buildings. The Planning Authority granted permission on the 01/10/1998.

Currabwee Wind Farm at the time of lodgement is constructed.

Knockeenboy Wind Farm

Pl.Ref.11/59: James O'Regan applied for development of seven wind turbines with a hub height of up to 70 metres and a rotor diameter of up to 71 metres, and all associated works. The Planning Authority granted permission which was upheld by An Bord Pleanála (Ref no. 88.240070) on the 25/05/1999. 24/08/2012.

Knockeenboy Wind Farm at the time of lodgement is not constructed.

Ballybane/Glanta Commons Wind Farm

Pl.Ref.02/3281: Ballybane Windfarms Ltd applied to Cork County Council for windfarm consisting of 21 no. turbines, 60m high and all associated site works . The Planning Authority granted permission on the 25/02/2003.

Pl.Ref.02/3280: Ballybane Windfarms Ltd applied to Cork County Council for erection of 40m high wind monitoring mast. The Planning Authority granted permission on the 17/09/2002.

Pl.Ref.04/2211: Ballybane Windfarms Ltd applied to Cork County Council for relocation of substation and provision of site tracks in relation to grant of planning W/02/3281. The Planning Authority granted permission on the 27/05/2004.

Pl.Ref.09/849: Ballybane Windfarms Ltd applied to Cork County Council for ten year planning permission for a wind farm of up to 6 wind turbines (hub height 64m and rotor diameter of 71m - tip height of 99.5m), and all ancillary site works - forming an extension to the existing Glanta Commons Windfarm. The Planning Authority granted permission which was upheld by An Bord Pleanála (Ref no. 88.235028) on the 05/08/2010

Pl.Ref.13/76: Ballybane Windfarms Ltd applied for modification to the ten year planning permission for up to six turbines forming an extension to the Glanta Commons Wind Farm granted under An Bord Pleanala reference number PL 88.235028 (County Council number 09/849). The modification is to increase the turbine hub heights from 64m to 74.5m. Turbine locations and wind farm access roads to remain the same as granted by An Bord Pleanala. The Planning Authority granted permission on the 05/04/2013.

Pl.Ref.15/320: Ballybane Windfarms Ltd for planning permission for up to two wind turbines with a tip height of up to 110 metres, site access roads, hardstanding areas, underground cabling and all ancillary site works - forming an extension to the existing Glanta Commons Wind Farm, consisting of nineteen wind turbines. The Planning Authority granted permission on the 06/08/2015.

Pl.Ref.16/6: Ballybane Windfarms Ltd. applied for permission for the upgrade of the existing site entrance and amendment of Condition 1 of An Bord Pleanala Reference PL 04.216875 (a permission for 13 no. turbines) to specify that the structures should be removed at the expiration of a 25 year period instead of the 20 years permitted. Permission is also sought for the amendment of Condition 4 of An Bord Pleanala Reference PL 88. 235028, (a permission for 6 no. turbines) to specify that the permission is for a period of 25 years from the date of commissioning instead of the 20 years specified in the condition. The Planning Authority granted permission on the 01/03/2016.

The Ballybane/Glanta Wind Farm is at the time of lodgement operational.

Knocknamork Wind Farm

Pl.Ref.19/4972: Knocknamork Ltd. applied for planning permission for a renewable energy development consisting of the provision of a 7 turbine wind farm, solar photovoltaic array, electricity substation, battery storage compound and all associated works. The wind turbines had an overall blade tip height of up to 150 metres The Planning Authority granted permission on the 18/11/2019.

Knocknamork at the time of lodgement is not constructed.

Killaveenoge Windfarm Ltd

Pl.Ref.11/50: Environ Renewables Ltd applied for planning permission for a wind farm of up to 8 no. turbines with tip height of up to 110m, site substation with compound (to include grid transformer, end mast and electrical equipment), upgrade of existing entrance and existing forestry road, construction of new access roads, hardstandings, rock borrow pit, meteorological mast (74.5m high), underground cabling and all ancillary site works. The Planning Authority granted permission on the 14/09/2011.

Pl.Ref.13/635: Environ Renewables Ltd applied for planning permission for permission to construct a windfarm and all associated infrastructure. The proposed windfarm will comprise the provision of a total of up to 10 No. wind turbines, with a maximum overall blade tip height of up to 131m. The current Proposed Development is intended to replace the wind farm development previously permitted at this location under planning ref 11/50. The Planning Authority refused permission which was overturned by An Bord Pleanála (Ref No. 88.242998) on the 17/06/2014.

Pl.Ref.18/242: Killaveenoge Windfarm Ltd applied for planning permission for permission to construct a battery storage compound adjacent to the existing Killaveenoge electricity substation. The Planning Authority granted permission, this was upheld by An Bord Pleanála (Ref. No. 302579-18)

Killaveenoge Windfarm Ltd at the time of lodgement was operational.

2.4.1.2 County Kerry

Inchee Wind Farm

Pl.Ref.08/120: Inchee Energy applied to Kerry County Council to erect 2 wind turbines of 80 metres hub height and 90 metres rotor blade diameter on site tracks and all necessary cabling. The Planning Authority granted permission on the 11/03/2008.

Pl.Ref.08/9120: Inchee Energy applied to Kerry County Council for an extension of duration to erect 2 wind turbines permitted under Pl.Ref.08/120. The Planning Authority granted permission.

The permission for the Inchee Wind Farm has expired

Sillahertane/Coomagearlaghy II Wind Farm

Pl.Ref.03/1359- Morgan Roche applied to Kerry County Council to erect 10 no. 1 mw wind turbines,and all associated works. The Planning Authority granted permission on the 18/12/2003.

Pl.Ref.03/91359- SWS Natural Resources applied to Kerry County Council for an extension of duration to erect 10 no. 1mw The Planning Authority granted permission on the 22/04/2008.

Pl.Ref.12/380- Bord Gais Eireann Ltd. applied to Kerry County Council to carry out upgrading and modifications to sections of an existing site access road to facilitate on-going operational and maintenance works to permitted Sillahertane wind farm (ref 03/1359). The Planning Authority granted permission on the 22/08/2012.

Sillahertane/Coomagearlaghy II Wind Farm at the time of lodgement is operational.

Coomagearlaghy-Kilgarvan Wind Farm

Pl.Ref.02/1241- Coillte Teoranta and SWS Services applied for permission for a wind farm consisting of 17 no. wind turbines, and all associated works. The Planning Authority granted permission on the 27/12/2002.

Coomagearlaghy-Kilgarvan Wind Farm at the time of lodgement is operational.

Midas Wind Farm

Pl. Ref. 03/1188: Application by Midas Energy Ltd. for a wind farm comprising 9 no. turbines and associated works. The Planning Authority granted planning permission.

Inchicoosh Wind Farm

Pl. Ref. 07/1605: Application by John O'Donoghue, Helen O'Sullivan and Daniel Quill for a wind farm consisting of 6 no. turbines and all associated works. The Planning Authority granted planning permission and this wind farm is currently operational.

Pl. Ref. 07/4364: Application by John O'Donoghue, Helen O'Sullivan and Daniel Quill for a wind farm consisting of 1 no. Turbines and all associated works. The Planning Authority granted planning permission in February 2008.

Lettercannon Wind Farm

Pl.Ref.03/2508- John Dineen applied to Kerry County Council for the development of 4 no. 1MW wind turbines service roadways and all associated works . During further information the applicant revised the layout to include 8 no. turbines. The Planning Authority granted permission, on appeal An Bord Pleanála (Ref no. 08/209629) granted permission however this was for 6 no. turbines on the 27/04/2005.

Pl. Ref. 07/4515- SWS Natural Resources LTD applied to Kerry County Council to move one wind turbine as an alteration to the six wind turbine development granted planning permission by An Bord Pleanala (ABP ref pl. 08.209629 and Kerry County Council planning register ref 03/2508). The Planning Authority granted permission on the 19/03/2008.

Pl. Ref. 07/4701- SWS Natural Resources LTD applied to Kerry County Council to erect one wind turbine (T9), hub height 80m, blade diameter 90m, as an addition to a six wind turbine development granted planning permission by An Bord Pleanála (ABP ref: pl.08.209629 and Kerry County Council planning register ref. 03/2508) and associated works. The Planning Authority granted permission on the 22/02/2008.

Lettercannon Wind Farm at the time of lodgement is operational.

2.4.1.3 An Bord Pleanála

Grousemount Wind Farm

PA0044: E.S.B. Wind Development Limited applied to An Bord Pleanála for construction of Grousemount Wind Farm, comprising 38 no. Wind Turbines and all associated works in townlands in County Kerry and County Cork. An Bord Pleanála granted permission on 21/07/2016. This is an amalgamation of Grousemount (Pl.Ref.03/3524, Pl.Ref.10/1333 and 15/0262) and Barnastooka (10/0197, 14/0412 and 15/0327)

Grousemount Wind Farm has been recently constructed.

2.4.1.4 Applications in the Vicinity of the Proposed Development Site

Table 2-1 below provides a review of the planning applications which have been made to Cork County Council in the immediate vicinity of the Proposed Development site. These applications predominantly relate to agricultural and domestic dwelling forms of development, and are all located within a distance of approximately 2km of the Proposed Development site:

Table 2-1 Planning Applications Within 2km of the Development Site

Planning Reference	Development Description	Decision
99/72	Construction of run-of-river hydro electric power scheme comprising river intake, buried pipeline & turbine building	Grant
99/201	Dwelling house	Grant
99/1387	Construction of two storey extension to dwelling house	Grant
99/2235	Erection of 30m steel lattice telecommunications structure, ancillary equipment container & fencing	Grant
00/5200	Dwelling & wastewater treatment plant	Grant
00/6133	Erection of 23 link dish/drum antennas & retention of base station incl. 24m high tower, GSM antennas,28 link dish/drum antennas, containers & ancillary work	Grant
00/7523	Erection of "Metra" garage for storage of vintage car & glider	Grant
01/2114	Dressing rooms (change of plan)	Grant
01/2335	Construction of new entrance walls to 2 no. entrances (entrance no.1 & no. 2)	Grant

Planning Reference	Development Description	Decision
01/2460	Retention and completion of domestic garage	Grant
01/5288	Construction of detached domestic garage	Grant
02/861	Dwelling	Grant
05/1726	Dwelling house and garage	Grant
05/2347	Dwelling house and garage	Grant
05/2796	Construction of prefabricated resource room and toilet together with ancillary site works	Grant
06/1241	2no. detached cattery units of single storey construction	Grant
06/2017	Erect livestock buildings, associated effluent tanks and clean yards	Grant
06/2899	Convert existing dairy unit to cubicle unit with slatted tank and associated site works	Grant
07/1658	Construction of slatted shed	Grant
07/2460	Extension to dwelling to serve as self contained dwelling unit	Grant
07/2731	Dwelling house, detached domestic garage and associated site works	Refused
07/2884	Construction of extension of dwelling	Grant
08/965	Demolition of existing dwelling house, adjacent shed and for construction of a dwelling house, separate garage, separate sauna room and all associated site works	Grant
08/1227	Dwelling house, detached domestic garage and all associated site works	Refused
08/1934	Dwelling house and garage	Grant
08/2054	Demolition of existing 2no. extensions to dwelling, reconstruction of 2no. new extensions, installation of treatment plant system in lieu of existing septic tank system and all associated site works	Grant
08/2143	Dwelling house and detached garage	Grant
12/484	Dwelling house, domestic store and waste treatment system	Grant
14/11	Dwelling house and garage extension of duration.	Grant
19/494	Construction of a slatted farm shed for the purpose of housing cattle and for all associated site works	Grant
19/534	To remove temporary classroom and construct stand alone classroom and to construct an extension to existing school comprising of an accessible bathroom and associated site works	Grant

Planning Reference	Development Description	Decision
19/715	Construction of dwellinghouse, installation of a wastewater treatment unit, percolation area and all associated site work	Grant

2.5 Scoping and Consultations

2.5.1 Scoping

Scoping is the process of determining the content, depth and extent of topics to be covered in the environmental information to be submitted to a competent authority for projects that are subject to an Environmental Impact Assessment (EIA). This process is conducted by contacting the relevant authorities and Non-Governmental Organisations (NGOs) with interest in the specific aspects of the environment with the potential to be affected by the proposal. These organisations are invited to submit comments on the scope of the EIAR and the specific standards of information they require. Comprehensive and timely scoping helps ensure that the EIAR refers to all relevant aspects of the Proposed Development and its potential effects on the environment and provides initial feedback in the early stages of the project, when alterations are still easily incorporated into the design. In this way scoping not only informs the content and scope of the EIAR, it also provides a feedback mechanism for the proposal design itself.

A scoping report, providing details of the application site and the Proposed Development, was prepared by McCarthy Keville O'Sullivan Ltd. (MKO) and circulated in December 2019. MKO requested the comments of the relevant personnel/bodies in their respective capacities as consultees with regards to the scope and preparation of the EIAR.

2.5.2 Scoping Responses

Table 2-2 lists the responses received from the bodies to the scoping document circulated in December 2019. Copies of all scoping responses received by 19th June 2020 are included in Appendix 2-2 of this EIAR. If further responses are received, the comments of the consultees will be considered in the construction and operation of the Proposed Development in the event of a grant of planning permission. The recommendations of the consultees have informed the scope of the assessments undertaken and the contents of the EIAR.

Table 2-2 Scoping Responses

No.	Consultee	Response
1	An Taisce	No response received to date
2	Bat Conservation Ireland	No response received to date
3	BirdWatch Ireland	Acknowledgement received 3rd December 2019
4	Broadcasting Authority of Ireland	Response received 3rd December 2019
5	Commission for Regulation of Utilities Water and Energy	No response received to date
6	Cork Airport	No response received to date
7	Cork County Council – Environment Section	No response received to date

No.	Consultee	Response
8	Cork County Council – Economic Section	No response received to date
9	Cork County Council – Water Section	No response received to date
10	Cork County Council – Roads Section	Response received 14th January 2020
11	Cork County Council – Heritage Officer	No response received to date
12	Department of Agriculture, Food and the Marine	Response received 31st January 2020
13	Department of Communications, Climate Action and the Environment	No response received to date
14	Department of Culture, Heritage and the Gaeltacht	Response received 4th February 2020
15	Department of Defence	Response received 12th December 2019
16	Department of Transport, Tourism & Sport	No response received to date
17	EirGrid	No response received to date
18	ESB Telecoms	No response received to date
19	Fáilte Ireland	Response received 23rd December 2019
20	Forest Service	No response received to date
21	Geological Survey of Ireland	Response received 10th December 2019
22	Health Service Executive South	No response received to date
23	Iarnród Éireann	Response received 24th December 2019
24	Inland Fisheries Ireland	Response received 2nd January 2020
25	Irish Aviation Authority	Response received 22nd January 2020
26	Irish Peatland Conservation Council	No response received to date
27	Irish Raptor Study Group	No response received to date
28	Irish Red Grouse Association	No response received to date
29	Irish Sports Council	No response received to date
30	Irish Water	Response received 16th January 2020
31	Irish Wildlife Trust	No response received to date
32	Office of Public Works	No response received to date

No.	Consultee	Response
33	South Western IRBD	No response received to date
34	Sustainable Energy Authority of Ireland	No response received to date
35	The Heritage Council	No response received to date
36	Transport Infrastructure Ireland	Response received 23rd December 2019
37	Virgin Media (previously TV3)	No response received to date

Table 2-4 overleaf presents the key points from the scoping responses and identifies where such points have been addressed in this EIAR.

2.5.3 Telecommunications

As part of the early constraints study undertaken in the early design stages, telecommunications bodies were contacted, and the responses set out in Table 2-3 below received.

Table 2-3 Telecommunications Responses

No.	Consultee	Date of response	Response received and further action
1	Airspeed Communications	None received	No response
2	BT Communications Ireland	5th May 2019	No impacts noted therefore no potential for adverse impacts to arise.
3	Commission for Communications Regulation	None received	No response
4	Eir	2nd May 2019	No links in the area therefore no potential for adverse impacts to arise.
5	ESB Telecoms	7th May 2019 2nd March 2020	ESB initially noted no issues and confirmed that the Proposed Development did not affect any of their current microwave links as well as noting satellite infrastructure on the existing substation within the site. ESB were provided with coordinates for the Proposed Development in February 2020. At this stage, it was noted that there could be a potential impact on this satellite and a future proposed radio link from Kealkill 38kV to Nowen Hill. The applicant discussed a telecommunications solution for the above noted infrastructure with EMR Solutions. Further details can be found in Chapter 14, Section 14.2.3.2.
6	Imagine Group	5th May 2019	No links in the area therefore no potential for adverse impacts to arise.

No.	Consultee	Date of response	Response received and further action
7	Ripplecom	3rd May 2019	No impacts noted therefore no potential for adverse impacts to arise.
8	RTE Transmission Network Ltd	2nd May 2019 4th March 2020	RTE 2rn initially noted no issues with the Proposed Development. On providing RTE with an initial turbine layout, the location of T7 was noted as being directly in the pathway of the Mullaganish and Bantry sites. Further discussions with resulted in a movement of turbines out of the 200m Fresnel Zone associated with that link. Further details can be found in Chapter 14, Section 14.2.3.2. Potential impacts on television viewers to the southwest of the site was also noted. This is a standard requirement, and should a favourable planning decision be made, the relevant protocol agreement will be provided. A protocol agreement was also requested, and the signed agreement can be found in Appendix 14-1.
9	Tetra Ireland Communications Ltd.	9th May 2020	No impacts noted therefore no potential for adverse impacts to arise.
10	Three Ireland	1st May 2019	No links in the area therefore no potential for adverse impacts to arise.
11	Towercom	7th May 2019	No significant impact anticipated therefore no potential for adverse impacts to arise.
12	Viatel Ireland Ltd	2nd May 2019	No links in the area therefore no potential for adverse impacts to arise.
13	Virgin Ireland Ltd	None received	No response
14	Vodafone Ireland Ltd	None received	No response
15	MP&E Trading Company Ltd	2nd May 2019	No links in the area therefore no potential for adverse impacts to arise.

Table 2-4 Review of Scoping Responses

No.	Consultee	Key Scoping Response Points	Addressed in EIAR
1	Broadcasting Authority of Ireland	Not aware of any issues from existing wind farms into existing FM networks. Proposed Development is not located close to any existing or planned FM transmission sites.	N/A
2	Cork County Council – Roads Section	Response from CCC Roads Department details documentation that should be referenced within the traffic assessment. The assessment should focus on effects of increased traffic on the regional road network during construction and post construction. A Construction Traffic Management Plan should be submitted as part of the application and should consider abnormal loads and their impact on the road network. The department also notes that the Chapter will be reviewed by the Roads Department on receival of application.	Chapter 14 – Material Assets – Traffic and Transport Assessment
3	Department of Agriculture, Food and the Marine	If the Proposed Development will involve the felling or removal of any trees, the developer must obtain a Felling License from this Department before trees are felled or removed.	Chapter 4, Section 4.3.10 A Felling Licence will be obtained prior to any tree felling.
4	Department of Culture, Heritage and the Gaeltacht	Response received in regard to archaeological and heritage related observations and recommendations. The Department would like to advise that, the Proposed Development site (PDS) appears to contain within it a number of known Recorded Monuments and/or Archaeological sites that shall be assessed as part of the overall AACHIA. However the PDS itself is located within a wider area of known archaeological settlement and activity. The Department recommends that the AACHIA also include an assessment of the Proposed Development on the wider archaeological landscape – with particular reference to the proposed increased hub-height of the turbines and their visual impact on the wider archaeological landscape. In this regard it should be noted that prehistoric monuments such as Standing Stone Alignments, Standing Stone Rows, Single Standing Stones, as well as some megalithic tombs, are often aligned with physical features in the landscape and/or solar or lunar events. The Department considers the Proposed Development to be large-in-scale and as such it is possible that hitherto previously unrecorded subsurface archaeological features may be encountered during the course of the groundworks required for turbine construction, cable trenches and associated works. Therefore, the Department recommends that a programme of Archaeological Testing be carried out as part of the overall AACHIA – in advance of a planning submission – as this will facilitate the formulation of an appropriate archaeological mitigation strategy should the need arise.	Chapter 13 - Archaeology and Cultural Heritage Section 13.3 notes all Recorded Monuments within the EIAR Site Boundary and within the vicinity of the site Section 13.4.5 carries out an assessment of the visual impact of the proposed turbines on the wider archaeological landscape. Section 13.1.3.3 details the response to the Department in respect to the potential for unrecorded subsurface archaeological features at the site.

No.	Consultee	Key Scoping Response Points	Addressed in EIAR
5	Department of Defence	The Air Corp provided comments in regard to lighting: › *Single turbines or turbines delineating corners of a windfarm should be illuminated by high intensity obstacle strobe lights (Red).* › *Obstruction lighting elsewhere in a windfarm will be of a pattern that will allow the hazard be identified and avoided by aircraft in flight.* › *Obstruction lights used should be incandescent or of a type visible to Night Vision Equipment. Obstruction lighting fitted to obstacles must emit light at the near Infra-Red (IR) range of the electromagnetic spectrum specifically at or near 850nanometres (nm) of wavelength. Light intensity to be of similar value to that emitted in the visible spectrum of light. Obstruction lights used should be incandescent or of a type visible to Night Vision Equipment.*	In response to the lighting requirements requested by the Department of Defence, the turbines will be marked on maps, lit at night and entered into aircraft navigation databases and therefore can be avoided during flight. Chapter 14, Section 14.2.3.2.3 and Section 14.2.3.5.2
6	Fáilte Ireland	Provided a copy of Fáilte Ireland standard *Guidelines for the Treatment of Tourism in an EIS* which should be taken into account during preparation of the EIAR. The document highlights how tourism can be incorporated into different assessments throughout the EIAR.	Chapter 5, Section 5.3 Chapter 5, Section 5.9.2.5 and Section 5.9.3.3
7	Geological Survey of Ireland	GSI provided details on their datasets which should be utilised as part of the assessment, <u>Geoheritage</u> The response notes that County Geological Sites (CGS) are being recognised and adopted under the National Heritage Plan and are now included in County Development Plans to ensure the recognition and appropriate protection of geological heritage within the planning system. The records show that there is a CGS located within the townland of Derreendonnee: Pass of Keimaneigh. <u>Groundwater</u> Groundwater and Flood Risk Management need to be considered as part of the assessment. <u>Geohazards</u> GSI note that landslides are possible in areas of peat land which cover the townlands of Cappaboy Beg, Derreendonee and Curraglass. The response also makes reference to geothermal energy and use of natural resources, and where relevant, should be discussed within the assessment.	Chapter 8, Section 8.3.6 Chapter 9, Section 9.3 Chapter 8, Section 8.3.7 Appendix 8-1 – Peat Stability Risk Assessment

No.	Consultee	Key Scoping Response Points	Addressed in EIAR
8	Iarnród Éireann	Iarnród Éireann are not aware of any discussed or abandoned railway line within the Proposed Development area	N/A
9	Inland Fisheries Ireland	With respect to the Proposed Development IFI would ask: (a) There be no drainage or other physical interference with the bed or bank of any watercourse without prior consultation with IFI. (b) Suspended solids and or hydrocarbon contaminated site run-off waters are controlled adequately so that no pollution of surface waters can occur. More specifically IFI feels the following issues should be addressed (i) Identifying and zoning the project for environmental impact should a peat slip occur (ii) Setting out contingency plan should a peat movement occur. (iii) Setting out a plan for the control of silt in such a scenario, including measures to be put in place at the initial stages of construction. (c) In the event of any watercourse crossings being bridged or culverted the following general criteria should apply, (i) The free passage of fish must not be obstructed. (ii)The original slope of the riverbed should be maintained with no sudden drops on the downstream side. (iii) Bridges are preferable to culverts. (iv) In the event of a crossing being in excess of 1ft in width IFI should be consulted prior to works commencing. (v) All instream works should be carried out only in the April-September period.	Chapter 6, Section 6.5.2 and Chapter 6, Section 6.6.3.1 and 6.6.4.1 Chapter 9, Section 9.5.2 and 9.5.3 Appendix 4-3 - Construction Environmental Management Plan
10	Irish Aviation Authority	The Authority advised that they have no specific requirements in relation to the development of the EIAR based on the approximate location of the development and the information submitted. They will furnish the usual observations during the planning process relating to: › the construction of the windfarm, › concerning the need for an obstacle lighting scheme, › 30 days notification in relation to crane operations and › submission of as constructed coordinates.	Chapter 14, Section 14.2.3.2.3 and Section 14.2.3.5.2
11	Irish Water	In respect to the Proposed Development, IW would like the following aspects of Water Services to be considered in the scope of an EIAR where relevant: › Impacts of the development on the capacity of water services (do existing water services have the capacity to cater for the new development if required).	Chapter 9, Section 9.3

No.	Consultee	Key Scoping Response Points	Addressed in EIAR
		› Any up-grading of water services infrastructure that would be required to accommodate the development. › In relation to a development that would discharge trade effluent – any upstream treatment or attenuation of discharges required prior to discharging to an IW collection network › In relation to the management of surface water; the potential impact of surface water discharges to combined sewer networks & potential measures to minimise/stop surface waters from combined sewers › Any physical impact on IW assets – reservoir, treatment works, pipes, pumping stations, discharges outfalls etc. including any relocation of assets › Any potential impacts on the assimilative capacity of receiving waters in relation to IW discharge outfalls including changes in dispersion /circulation characterises › Any potential impact on the contributing catchment of water sources either in terms of water abstraction for the development (and resultant potential impact on the capacity of the source) or the potential of the development to influence/ present a risk to the quality of the water abstracted by IW for public supply. › Where a development proposes to connect to an IW network and that network either abstracts water from or discharges wastewater to a "protected"/sensitive area, consideration as to whether the integrity of the site/conservation objectives of the site would be compromised. › Mitigation measures in relation to any of the above Irish Water also note: › If a development requires a connection to either a public water supply or sewage collection system the developer is advised to submit a Pre Connection Enquiry to assess feasibility of connection prior to applying for planning permission. › Irish Water will not normally accept new surface water discharges to combined sewer networks	
12	Transport Infrastructure Ireland	TII makes reference to the National Strategic Outcome 2 of the National Planning Framework, which includes the objective to maintain the strategic capacity and safety of the national road network. It is also an investment priority of the National Development Plan 2018-2027, to ensure that the extensive transport networks which have been enhanced over the years are maintained. TII note the below recommendations as general guidance for the preparation of the EIAR in regard to proposed national road schemes. The developer should have regard to the following:	Chapter 14 – Traffic and Transport

No.	Consultee	Key Scoping Response Points	Addressed in EIAR
		› The national road network should continue to serve its intended purpose. The EIAR should identify the methods and techniques proposed for any works traversing, or in proximity to the national road network to demonstrate that the development can safeguard the capacity, safety and operational efficiency of that network. › Any cabling and potential connection routing in relation to the Proposed Development site, the scheme should note locations of existing and future national road schemes and develop proposal to safeguard these. Consultation should be had with relevant local authority with regard to locations of existing and future schemes. › Proposals should be developed to safeguard proposed road schemes, with consideration being given to routing options, use of existing crossings and depth of cable laying. In the context of existing national roads, development should be considered in the interests of safeguarding the investment in and the potential for future upgrade works to the national road network. Cables should avoid all existing TII infrastructure and works should only be taken in consultation with and subject to agreement of TII. The applicant should: › Clearly identify haul routes proposes and full assess the network › Where appropriate, a Traffic and Transport Assessment (TTA) be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to and from the site with reference to impacts on the national road networks. TII Guidelines should be referred to also. › TII Standards should be consulted to determine the requirement for Road Safety Audit (RSA) and Road Safety Impact Assessment (RSIA) › When conducting Environmental Impact Assessment, TII Environment Guidelines should be considered, which deal with assessment and mitigation measures for varied environmental factors and occurrences. In particular, TII's Environmental Assessment and Construction Guidelines and Environmental Noise Regulations 2006, taking into account traffic impacts on noise.	Chapter 14, Section 14.1.4 and Section 14.1.6 Chapter 14, Section 14.1.1 and Section 14.1.4

2.6 Other Consultation

2.6.1 Pre-Planning Meetings

2.6.1.1 Cork County Council

A pre-planning meeting was held with Cork County Council on 17th February 2020. The meeting was attended by representatives of the Planning Department, MKO and Wingleaf Ltd.

Items discussed at the pre-planning meeting included an overview of the Proposed Development and history of the site, the policy context for the Proposed Development including specific Cork County Development Plan 2014-2020 policy, site layout and the design process. Wireframes from viewpoints were presented for the Proposed Development and the previous development at the site.

Discussions also included community engagement undertaken in the area by the Community Liaison Officer (CLO), importance of input and feedback from the local community and proposals for continuing community engagement including the Public Information Event. The haul route, grid connection, the Landscape and Visual Impact assessment of the Proposed Development, surveys completed to date, and the proposed planning application approach was also discussed.

Items presented at the pre-planning meeting included site location and proposed site layout maps which included a 7-turbine layout, the site constraints map, wireframes and the proposed substation and grid connection details.

2.6.1.2 Community Consultation

Public consultation on the Curraglass Renewable Energy Development began in early 2020 at the beginning of the development process. A Community Liaison Strategy (CLS) was established and set into motion with a nominated Community Liaison Officer (CLO) appointed. Since this time, the CLO has been the main point of contact to the local community.

The CLS is based on the *'Code of Practice for Wind Energy Development in Ireland Guidelines for Community Engagement'* (December 2016). The Code's core fundamentals are to engage with the local community in an open, honest and transparent manner with the aim to not only provide clear and understandable information on a project but also to gain feedback to understand the views of the local community and to use this information to inform the design process. This allows the local community an opportunity to input and have an influence on the final project design.

Door-to-door consultation with local residents, within 2 kilometres of the Proposed Development site, was carried out by a Community Liaison Officer, Patrick McMorrough, on a continuous basis between 8th January 2020 and 7th April 2020. This consultation process was carried out to provide those living closest to the Proposed Development site with a description of the project, regular updates on the progression of the development and an opportunity to provide feedback and comments on the project. It also provided the locals with an opportunity to give their ideas with regards to projects that could be funded by a Community Benefit Scheme.

The Proposed Development has the potential to have significant benefits for the local economy, by means of job creation, landowner payments and commercial rate payments. An important part of wind farm development, which Wingleaf Ltd. has been at the forefront of developing, is its Community Benefit Package. The concept of directing benefits from wind farms to the local community is promoted by the National Economic and Social Council (NESC) and the Irish Wind Energy Association (IWEA) among others. While it may be simpler and easier to put a total fund aside for a wider community area, Wingleaf Ltd. is endeavouring to develop new ways to direct increased gain towards the local community with particular focus on those living closest to the Proposed Development.

The feedback received from scoping consultees and throughout the public consultation process informed the Proposed Development design and assessments undertaken during the EIAR preparation. A Community Report, further detailing the consultation process with the community, is included as Appendix 2-3.

2.7 Cumulative Impact Assessment

The EIA Directive and associated guidance documents state that as well as considering any indirect, secondary, transboundary, short-, medium-, and long-term, permanent and temporary, positive and negative effects of the project (all of which are considered in the various chapters of this EIAR), the description of likely significant effects should include an assessment of cumulative impacts that may arise. The factors to be considered in relation to cumulative effects include population and human health, biodiversity, land, soil, water, air, climate, material assets, landscape, and cultural heritage as well as the interactions between these factors.

2.7.1 Methodology for the Cumulative Assessment of Projects

To gather a comprehensive view of cumulative impacts on these above environmental considerations and to inform the EIA process being undertaken by the consenting authority, each relevant chapter within the EIAR addresses the potential for cumulative effects where appropriate.

The potential cumulative impact of the Proposed Development (which includes the proposed means of grid connection) and other relevant developments has been carried out with the purpose of identifying what influence the Proposed Development will have on the surrounding environment when considered cumulatively and in combination with relevant approved, and existing projects in the vicinity of the proposed site.

The cumulative impact assessment of projects has three principle aims:

- To establish the range and nature of existing and/or approved projects within the cumulative impact study area of the Proposed Development.
- To summarise the relevant projects which have a potential to create cumulative impacts.
- To identify the projects that hold the potential for cumulative interaction within the context of the Proposed Development and discard projects that will neither directly or indirectly contribute to cumulative impacts.

Assessment material for this cumulative impact assessments carried out within this EIAR was compiled in relation to the relevant developments within the vicinity of the Proposed Development from which there may be potential for cumulative impacts to arise. The material was gathered through a search of relevant online planning registers, reviews of relevant EIS/EIAR documents, planning application details and planning drawings, and served to identify past and future projects, their activities and their environmental impacts.

2.7.2 Projects Considered in Cumulative Assessment

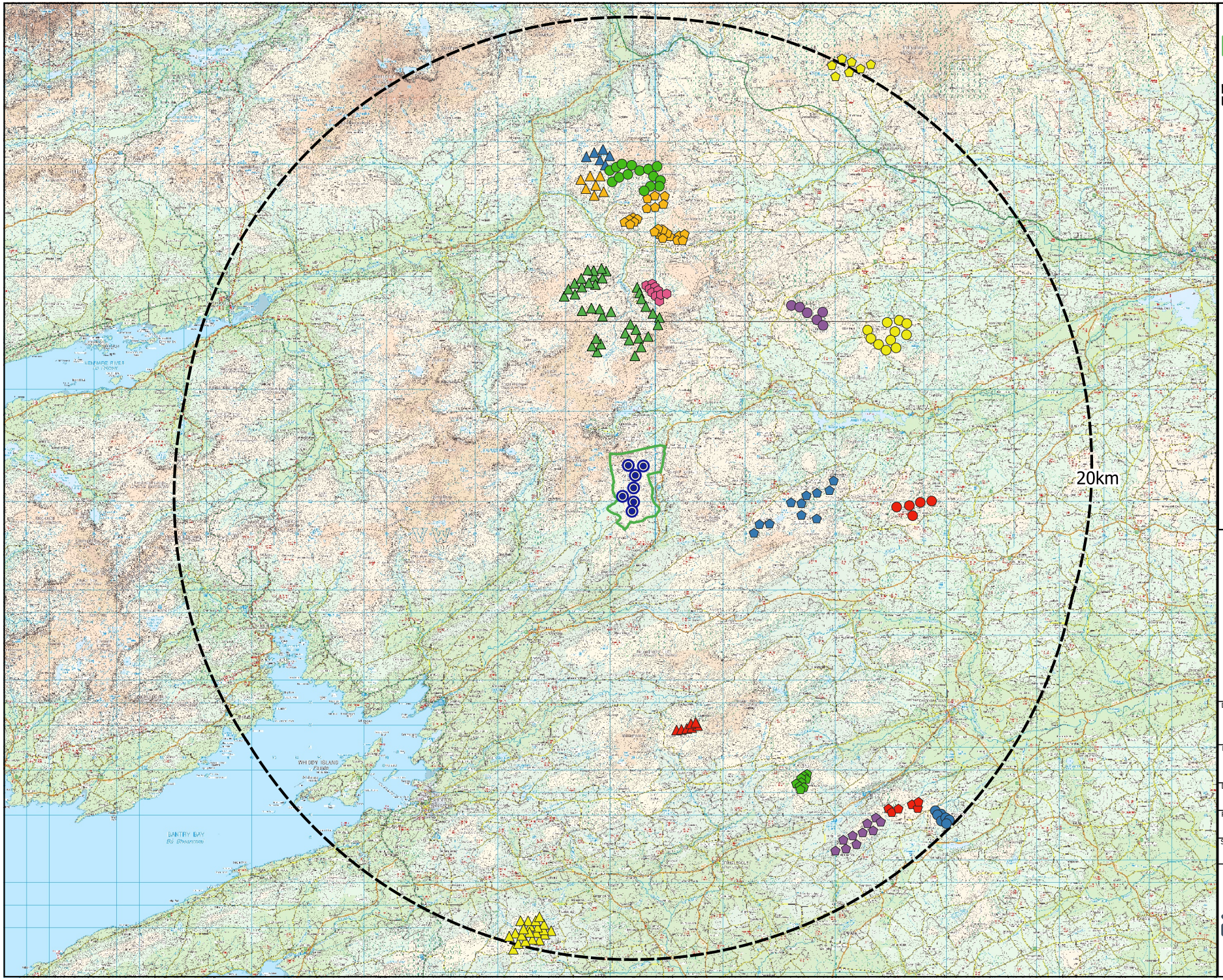
The projects considered in relation to the potential for cumulative impacts and for which all relevant data was reviewed (e.g. individual EIS/EIAR's, layouts, drawings etc) include those listed previously above in Section 2.4 and all relevant associated works. Other developments considered within the cumulative assessment include the categories listed below:

Other Wind Farms

There are a number of wind farms located within a 20-kilometre radius of the Proposed Development site, as identified previously in this Chapter, shown in Figure 2-5 and listed in Table 2-5 below. Any cumulative affects arising are considered in the relevant chapters of this EIAR.

Table 2-5 Other Wind Farms within 20km

No.	Other Wind Farms	Status	No. of Turbines
1	Cleanrath Wind Farm	Existing	11 (9 constructed)
2	Coomaghearlahy Wind Farm	Existing	15
3	Currabwee Wind Farm	Existing	7
4	Derragh Wind Farm	Existing	6
5	Grousemount Wind Farm	Existing	38
6	Inchincoosh Wind Farm	Existing	6
7	Killaveenogue Wind Farm	Existing	10
8	Knockeenboy Wind Farm	Permitted	6
9	Lettercannon Wind Farm	Existing	7
10	Midas Wind Farm	Existing	23
11	Millane Hill Wind Farm	Existing	9
12	Sillahertane Wind Farm	Existing	10
13	Derreenacrinnig West Wind Farm	Permitted	7
14	Carrigarierk Wind Farm	Permitted (Under Construction)	5
15	Glanta Commons Wind Farm	Existing	21
16	Knocknamork Wind Farm	Permitted	7
17	Shehy More Wind Farm	Permitted (Under Construction)	11



Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- Buffer - 20km
- Existing Cleanrath Wind Farm
- Existing Coomaghearlahy Wind Farm
- Existing Currabwee Wind Farm
- Existing Derragh Wind Farm
- Existing Glanta Commons Wind Farm
- Existing Grousemount Wind Farm
- Existing Inchincoosh Wind Farm
- Existing Killaveenogue Wind Farm
- Existing Lettercannon Wind Farm
- Existing Midas Wind Farm
- Existing Millane Hill Wind Farm
- Existing Sillahertane Wind Farm
- Permitted Derreenacrinnig West Wind Farm
- Permitted Carrigarierk Wind Farm (Under Construction)
- Permitted Knockeenboy Wind Farm
- Permitted Knocknamork Wind Farm
- Permitted Shehy More Wind Farm (Under Construction)

Drawing Title: Other Wind Farms within 20km

Project Title: Curraglass Renewable Energy Development, Co. Cork

Drawn By	Checked By
Órla Murphy	Michael Watson
Project No.	Drawing No.
190301	Figure 2-5
Scale	Date
1:220000	11.06.2020

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Forestry and Replanting

The Proposed Development site is used for commercial forestry. Regular felling operations will continue in conjunction with the Proposed Development. The potential for cumulative effects during the construction, operational and decommissioning phases of the Proposed Development have therefore been assessed. The Forest Service is responsible for ensuring the development of Forestry within Ireland in a manner and to a scale that maximises its contribution to national socio-economic well-being on a sustainable basis that is compatible with the protection of the environment. The forestry works (felling/planting) associated with the Proposed Development will be carried out under the relevant guidance and under licence from the Forestry Service. The replanting lands, which have been assessed as part of this planning application, have been assessed where relevant within the EIAR in combination with the Proposed Development.

Existing Site Infrastructure

It should also be noted that any potential cumulative effects in relation to the previously granted infrastructure on site is also considered. At present there is an existing substation at the Proposed Development site. The existing substation on site will be subject to decommissioning under the provisions of the previously granted permission and these works have been considered where appropriate in the cumulative assessments.

Furthermore, there is an overhead line connection to the Ballylickey Substation, approximately 12km southwest of the site. ESB may from time to time require access to the site to perform maintenance works to the electrical infrastructure where relevant, this has been cumulatively assessed within the EIAR.

Other Developments/Landuses

The review of the Cork County Council planning register documented relevant general development planning applications in the vicinity of the Proposed Development site, most of which relate to the provision and/or alteration of one-off rural housing and agriculture-related structures, as described in Section 2.4 above. These applications and landuses have also been taken account in describing the baseline environment and in the relevant assessments.

Furthermore, the cumulative impact assessments carried out in each of the subsequent chapters of this EIAR consider all potential significant cumulative effects arising from all land uses in the vicinity of the Proposed Development. These include ongoing agricultural practices, and drainage/maintenance works/programmes. Overall the Proposed Development has been designed to mitigate impacts on the environment and a suite of mitigation measures is set out within the EIAR. The mitigation measures set out in this EIAR have been developed to ensure that significant cumulative affects do not arise during the construction, operational or decommissioning phases of the Proposed Development. Additional detail in relation to the potential significant cumulative effects arising and, where appropriate, the specific suite of relevant mitigation measures proposed are set out within each of the relevant chapters of this EIAR.