4.0 NEED FOR THE DEVELOPMENT

4.1 INTRODUCTION

This chapter of the EIAR sets out the strategic policy context at a European and national level for the requirement of energy generation sources to replace fossil fuels as a direct response to the climate crisis. The key driver in the requirement for low-carbon generation technology is set out in binding European targets to reduce greenhouse gas emissions. The current and future demands of electricity generation are detailed and highlight the importance of gas power plants during the transition to a low-carbon future as well as its potential support expanding data centre development in the Dublin area.

4.2 EUROPEAN POLICY CONTEXT

4.2.1 EUROPEAN GREEN DEAL

The energy sector is responsible for more than 75% of the EU's greenhouse gas emissions. Increasing the share of renewable energy across the different sectors of the economy is therefore a key building block to achieving an integrated energy system that delivers on Europe's ambition of climate neutrality. The European Green Deal moreover sets out the EU's path to climate neutrality by 2050, through the deep decarbonisation of all sectors of the economy, and higher greenhouse gas emission reductions for 2030. The figure below illustrates the various elements of the Green Deal.

Figure 4-1: European Green Deal

To deliver the European Green Deal, there is a need to rethink policies for clean energy supply across the economy, industry, production and consumption, large-scale infrastructure,

transport, food and agriculture, construction, taxation and social benefits. The climate action initiatives under the Green Deal include:

- European Climate Law to enshrine the 2050 climate-neutrality objective into EU law;
- European Climate Pact to engage citizens and all parts of society in climate action;
- 2030 Climate Target Plan to further reduce net greenhouse gas emissions by at least 55% by 2030;
- New EU Strategy on Climate Adaptation to make Europe a climate-resilient society by 2050, fully adapted to the unavoidable impacts of climate change; and
- By June 2021, the Commission will also review and, where necessary, propose to revise all relevant policy instruments to deliver additional greenhouse gas emissions reductions.

4.2.2 A CLEAN PLANET FOR ALL: A EUROPEAN STRATEGIC LONG-TERM VISION FOR A PROSPEROUS, MODERN, COMPETITIVE AND CLIMATE NEUTRAL ECONOMY (2018)

The aim of this long-term strategy is to confirm Europe's commitment to lead in global climate action and to present a vision that can lead to achieving net-zero greenhouse gas emissions by 2050 through a socially fair transition in a cost-efficient manner.

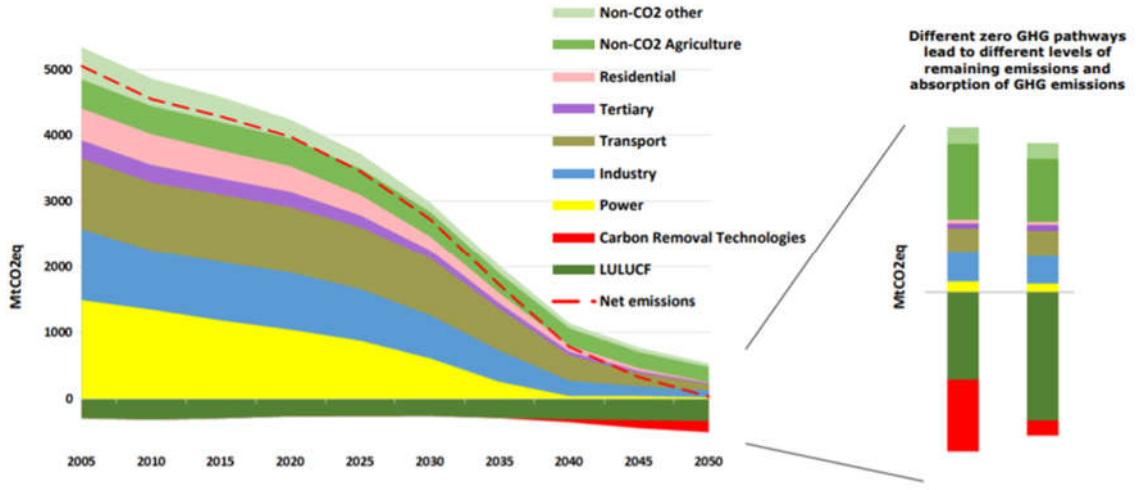

Figure 4-2: GHG emissions trajectory in a 1.5 degrees C scenario

There are a number of pathways for achieving a climate neutral net-zero greenhouse gas emissions in line with the above aim and these include:

- Accelerate the clean energy transition, ramping up renewable energy production, high energy-efficiency and improved security of supply, with increased focus on reducing cyber security threats, while ensuring competitive energy prices, all of which power the modernisation of our economy;
- Recognise and strengthen the central role of citizens and consumers in the energy transition, foster and support consumer choices reducing climate impact and reap collateral societal benefits improving their quality of life;

- Roll out carbon-free, connected and automated road-transport mobility; promote multi-modality and shifts towards low-carbon modes such as rail and waterborne transport; restructure transport charges and taxes to reflect infrastructure and external costs; tackle aviation and shipping emissions using advanced technologies and fuels; invest in modern mobility infrastructure and recognise the role of better urban planning;
- Boost the EU's industrial competitiveness through research and innovation towards a digitalised and circular economy that limits the rise of new material dependencies; start testing at scale breakthrough technologies; monitor the implications on the EU's terms of trade, in particular for the energy intensive industries and suppliers of low carbon solutions, ensure competitive markets that attracts low carbon industries, and in line with international obligations alleviate competitive pressures that could lead to carbon leakage and unwanted industrial relocation;
- Promote a sustainable bio-economy, diversify agriculture, animal farming, aquaculture and forestry production, further increasing productivity while also adapting to climate change itself, preserve and restore ecosystems, and ensure sustainable use and management of natural land and aquatic and marine resources;
- Strengthen infrastructure and make it climate proof. Adapt through smart digital and cyber-secure solutions to the future needs of electricity, gas, heating and other grids allowing for sectoral integration starting at local level and with the main industrial/energy clusters;
- Accelerate near-term research, innovation and entrepreneurship in a wide portfolio of zero-carbon solutions, reinforcing the EU's global leadership.

4.2.3 EUROPE 2030 CLIMATE AND ENERGY FRAMEWORK

EU leaders agreed in October 2014 on new climate and energy objectives for 2030 following a proposal put forward by the European Commission. The 2030 framework aims to make the EU's economy and energy system more competitive, secure and sustainable.

A centrepiece of the 2030 framework is the binding domestic target to reduce greenhouse gas emissions by 40% below 1990 levels by 2030. This will put the EU on the most cost-effective path towards its agreed objective of an 80-95% reduction by 2050. EU leaders also agreed on raising the share of renewable energy to at least 27%.

As of June 2018, the EU has increased its target of 27% of energy from renewable sources by 2030 to 32% which also includes a clause to allow for a further increase in the target by 2023. This amended target is a clear indication that increased renewable energy and related faciliatory power generation infrastructure will remain at the forefront of both EU and national energy policy.

An update to this legislation is now expected in 2021 with a view to implementing the proposed at least reduction target of 55% net greenhouse gas emissions.

As part of the European Green Deal, the Commission proposed in September 2020 to raise the 2030 greenhouse gas emission reduction target, including emissions and removals, to at least 55% compared to 1990. It looked at the actions required across all sectors, including increased energy efficiency and renewable energy, and started the process of making detailed legislative proposals by June 2021 to implement and achieve the increased ambition.

This will enable the EU to move towards a climate-neutral economy and implement its commitments under the Paris Agreement by updating its Nationally Determined Contribution.

4.2.4 RENEWABLE ENERGY DIRECTIVE 2009/28/EC & 2018/2001/EU

The Directive 2009/28/EC on the promotion of the use of energy from renewable sources, known as the "Renewable Energy Directive", implemented the targets associated with the EU's 2020 climate and energy framework. The main target was:

"*Raising the share of EU energy consumption produced from renewable resources to 20%*"

The Directive set national binding targets for all EU countries with the overall aim of making renewable energy sources account by 2020 for 20% of EU energy and for 10% of energy specifically in the transport sector (both measured in terms of gross final energy consumption, i.e. total energy consumed from all sources, including renewables).

In 2018, the Directive was recast (2018/2001/EU) to move the legal framework to 2030 targets, setting a new binding target of at least 32% with a clause for a possible upwards revision by 2023. The recast Directive includes new provisions for enabling self-consumption of renewable energy, an increased 14 % target for the share of renewable fuels in transport by 2030 and strengthened criteria for ensuring bioenergy sustainability. The revision aims to ensure that renewable energy fully contributes to achieving the higher EU climate ambition for 2030, in line with the 2030 Climate Target Plan. The strategy will help build an integrated energy system, based on renewable energy and fit for climate neutrality, and help reach the objectives of the European Green Deal.

4.3 NATIONAL POLICY CONTEXT

4.3.1 IRELAND 2040 - OUR PLAN (NATIONAL PLANNING FRAMEWORK) [2018]

Ireland 2040 - National Planning Framework, hereafter referred to as the NPF, published by the Government in February 2018, is a 20-year planning framework designed to guide public and private investment, to create and promote opportunities for Irish citizens, and to protect and enhance Ireland's built and natural environment. The new framework sets out five strategic actions required to achieve this vision:

- 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 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 growth will place further demand on both the built and natural environment as well as the social and economic fabric of the country. 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 NPF states that Ireland's National Energy Policy is focused on three pillars: Sustainability; Security of Supply; and Competitiveness. In line with these principals, 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.

To facilitate this, NPF acknowledges the need to:

'*Reinforce the distribution and transmission network to facilitate planned growth and distribution of a more renewables focused source of energy across the major demand centres.*'

As such, some of the key National Policy Objectives identified in the NPF which the proposed gas power plant can assist in making a substantial contribution towards, include:

- National Policy Objective 52: The planning system will be responsive to our national environmental challenges and ensure that development occurs within environmental limits, having regard to the requirements of all relevant environmental legislation and the sustainable management of our natural capital;
- National Policy Objective 54: Reduce our carbon footprint by integrating climate action into the planning system in support of national targets for climate policy mitigation and adaptation objectives, as well as targets for greenhouse gas emission reduction; and
- National Policy Objective 55: 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.

In addition to the above objectives it should be noted that National Strategic outcome 6 of the NPF relates to the creations of "*A Strong Economy Supported by Enterprise, Innovation and Skills*". This strategic outcome is underpinned by a range of objectives relating to job creation and the fostering of enterprise and innovation., including:

- Promotion of Ireland as a sustainable international destination for ICT infrastructure such as data centres and associated economic activities.

4.3.2 NATIONAL DEVELOPMENT PLAN 2018-2027

The National Development Plan 2018-2027, hereafter referred to as the NDP, sets out the investment priorities at national, regional and local planning levels that will facilitate the implementation of the NPF. In the context of the energy sector, the principle objective of the NDP is to assist in ensuring a 'long-term, sustainable and competitive energy future for Ireland'. Targeted investment within regulated network infrastructure ensures that Ireland's power grid is:

- Maintained to the highest international safety standards;
- Fit for purpose in the medium to longer-term in order to meet projected demand levels; and
- Meets the challenge of integrating world-leading levels of renewable energy.

Similar to the precedent set out in the NPF, the NDP states that investments within grid infrastructure are an important enabler of economic growth, and as such, the energy sector will play critical role to play in meeting priority infrastructural needs at both national and local levels. The proposed gas power plant presents the type and nature of investment described within the NPD required to achieve the NPF's strategic outcomes.

4.3.3 GOVERNMENT WHITE PAPER – IRELAND'S TRANSITION TO A LOW CARBON ENERGY FUTURE 2015-2030

The Government White Paper entitled *Ireland's Transition to a Low Carbon Energy Future 2015-2030* sets out a framework to guide Ireland's energy policy development. This White Paper is an update of the 2007 White Paper and sets out a framework to guide policy and actions that the Irish Government intends to take in the energy sector up to 2030 and also reaching out to 2050. The framework was developed in the context of the significant role played by European institutions in determining energy policy, markets and regulation. Similarly, it takes account of European and international climate change objectives, in particular the Renewable Energy Directive.

The Energy Vision 2050 established in the White Paper describes a 'radical transformation' of Ireland's energy system which it is hoped will result in Green House Gas emissions from the energy sector reducing by between 80% and 95%, compared to 1990 levels. This means that the diversification of energy supply during the national transition to a renewable energy system will need to shift away from carbon-intensive fuels such as peat and coal in favour of lower carbon fuels like natural gas.

The White Paper notes that:

"*Renewable energy will also play a central role in the transition to low carbon energy. No single renewable energy technology – existing or emerging – will alone enable Ireland to overcome the low carbon challenge. Rather,* ***a diverse range of technologies*** *will be required along the supply chains for electricity, heat and transport*".

"*Onshore wind continues to be the main contributor (18.2% of total generation and 81% of RES-E in 2014). It is a proven technology and Ireland's abundant wind resource means that a wind generator in Ireland generates more electricity than similar installations in other countries. This results in a lower cost of support. Due to the variability of wind conditions, wind generation poses challenges to the operation of electricity grids. In Ireland, these challenges are being addressed by the electricity system operators under their DS3 programme."*

In addition to this and of direct relevance to the proposed power plant, the White Paper acknowledges that an uninterrupted supply of energy is vital to the functioning of Irish society and economy. Thus adequate infrastructure and the diversification of energy supply which avoids overdependency on any particular fuel, supplier, route or region is necessary. Natural gas will therefore remain a significant element of Ireland's energy supply.

4.3.4 CLIMATE ACTION PLAN 2019

The Climate Action Plan 2019 sets out a 'roadmap' comprised of 183 no. actions to achieve net zero carbon energy system by 2050, and in the process, create a resilient, vibrant and sustainable country. This Plan builds on the policy framework, measures and actions set out in

the National Mitigation Plan, Project Ireland 2040 and the National Energy and Climate Plan 2021-2030.[3]

The targets and objectives established by the Europe 2030 Climate and Energy Framework and the Paris Agreement on climate change requires a transformational shift in the Irish economy and society in order facilitate climate resilience and sustainable development.

The National Energy and Climate Plan 2021-2030 envisages a target of at least 55% renewable energy in electricity by 2030. As of June 2019, the Irish government has confirmed that Ireland will now aim for at least 70% of Ireland's electricity supply to be generated from renewables by 2030 with no generation from peat and coal. This is considered an opportunity to create a sustainable electricity system, which the proposed gas power plant will support, that will meet the needs for the next generation.

To achieve Ireland's 2030 target and subsequent net zero carbon energy system by 2050, a detailed sectoral roadmap has been designed to deliver a cumulative reduction in emissions over the period 2021 to 2030 of 58 4 MtCO2eq. The analysis presented in the Climate Action Plan shows that it is technically feasible to meet the 2030 EU target, but that it is also economically achievable.

In the context of electricity, the Plan acknowledges that Ireland has to date been very successful in deploying renewable electricity with 30.1% of electricity produced from renewable sources in 2017 and 33.2% for following year in 2018. The Plan notes that demand for electricity is forecasted to increase by 50% above existing capacity in the next decade. Therefore, in order to achieve the target of 70% in the context of rising energy demand, significant progress in renewable electricity deployment will need to continue, with an increased deployment rate of all renewable electricity technologies.

- At least 3.5 GW of offshore renewable energy;
- Up to 1.5 GW of grid-scale solar energy; and
- Up to 8.2 GW total of increased onshore wind capacity.

The Plan states that increased levels of renewable generation will require new infrastructure, such as dispatchable capacity (e.g. natural gas peaking plants that can generate electricity at times where there is no wind) such as the proposed gas power plant. Two actions which in part comprise the 'roadmap' are considered directly relevant to the proposed power plant:

- Action 17: Ensure that ESB Networks and EirGrid plan network and deliver on connecting renewable energy sources to meet the 2030 70% RES-E target; and
- Action 18: Facilitate additional hybrid connections (e.g. solar/wind/batteries) operating in the electricity market to increase RES-E penetration.

The Plan also acknowledges that by 2027 it is possible that as much as 31% of Irelands electricity could be powering data centres and that further work is required to "*align the expected rapid growth in energy demand from data centres with grid infrastructure plans*". Also, of relevance I the Plan, is the statement in relation to Enterprise Agency Leadership which references the Industrial Development Agency and Enterprise Ireland but can logically also be translated to other enterprise park operators:

[3] https://www.gov.ie/en/publication/0015c-irelands-national-energy-climate-plan-2021-2030/

"ensure new large-scale enterprise investments in Ireland, including consideration of factors such as location, energy storage opportunities and PPA opportunities are made consistent with this Plan and aligned with the build-out of the grid to maximise renewable sources".

The Plan is subject to a review in 2021 (ongoing at time of EIAR finalisation). The Climate Action and Low Carbon Development (Amendment) Bill 2021 will amend the Climate Action and Low Carbon Development Act 2015 to significantly strengthen the framework for governance of climate action by the State in order to realise our national, EU and international climate goals and obligations.

- Article 3 of the Revised Bill has been amended to strengthen the "National Climate Objective", which it defines as:

"The State shall, so as to reduce the extent of further global warming, pursue and achieve, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy."

The crucial amendment here is the introduction of the words "and achieve" by the hard stop falling at the end of 2050. This increases the strength of the obligations on the Irish State and sets a clear goal of a climate neutral economy by the end of 2050.

4.4 NATIONAL POWER GENERATION CAPACITY CONTEXT

4.4.1 DS3 PROGRAMME

In response to the binding European and national total energy consumption targets EirGrid began a multi-year programme, "Delivering a Secure, Sustainable Electricity System" known as the DS3 Programme. To date the DS3 Programme has enabled EirGrid to increase levels of renewable generation on the system from 50% to 65%, with the aim to increase levels to 75% gradually over the coming years and ultimately achieve 95% renewable generation by 2030.

The DS3 Programme is designed to ensure that the increasing amount of renewable energy required on the Irish power system can operate in an efficient, secure and safe manner. The national power system operates on a synchronous system, whereby electricity is generated at a single synchronised AC frequency. Ireland and Northern Ireland form such a system – all of the conventional generators on the island run in synchronism, producing electricity at 50Hz.

Synchronous generation produces the same amount of electricity all the time. It is reliable and predictable and, therefore, easy to bring onto the grid. Fossil fuels such as coal, oil and gas are a type of synchronous generation.

Non-synchronous generation produces a different amount of electricity depending on the energy available. It does not produce the same amount of electricity all of the time. This makes it less reliable, and more difficult to bring onto the grid. Most renewable forms of energy, such as wind and solar, are types of non-synchronous generation. This is because the amount of wind and light is always changing and therefore they cannot produce power predictably.

The growth of renewable energy generation, which is a non-synchronous system of power generation, presents a range of operational challenges for the power system. This non-synchronous technology poses challenges for EirGrid in maintaining power system stability and

security due to the inherent variability of renewable energy which is dependent upon climatic conditions. This variability must be managed to ensure demand for electricity is met at all times.

One of the key areas in the DS3 Programme is System Services. EirGrid wants to make sure that the system operates securely and efficiently, while facilitating higher levels of renewable energy. To achieve this aim, it is working to obtain a range of services from as wide a pool of generators and market participants as possible. This includes the development of financial incentives for better plant performance.

The provision of the proposed power plant in Profile Park will help EirGrid in managing the integration of renewable energy generators into the electricity grid by providing quick response capabilities in two ways. Firstly, the plant will have the capability of providing DS3 services that EirGrid will require to maintain system stability. Secondly, when requested by the grid operator, the plant will have the capability to start up and reach full load quickly, so assisting in providing electricity, during periods of high demand. The provision of these capabilities will mean that Ireland can continue to invest in renewable sources of power.

4.4.2 STRATEGY 2020-25 TRANSFORM THE POWER SYSTEM FOR FUTURE GENERATIONS

EirGrid Group published a five-year strategy in September 2019 outlining a strategic response to the transition of electricity generation to a sustainable low-carbon future. EirGrid Group has a unique role in leading the transformation of the All-Ireland electricity system as the operator and developer of the transmission grid on an all-island basis.

The primary goal of the strategy is to support the continued decarbonisation of electricity generation within Ireland in response to the climate crisis. As coal, peat and oil-burning electricity generation is phased out during the period up to 2030 the generation of renewable energy will be pivotal in the significant transformation of the All-Ireland electricity system. The future operation of the electricity system will be required to be more dynamic and responsive, consequently, improvements to infrastructure are required to consolidate the strength and flexibility of the transmission grid to accommodate for an additional 10,000 megawatts of renewable generation to the electricity system. EirGrid aim to achieve this through using both innovative and proven technologies to ensure the reliability of the electricity system. This includes gas fired power plant which provide the system services as outlined in the DS3 Programme in Section 4.2.1.

Source: Strategy 2020-25, EirGrid Group, September 2019

Figure 4-3:Primary and Supporting Goals of Strategy 2020-25

4.4.3 ALL-ISLAND GENERATION CAPACITY STATEMENT 2019-2028

This statement was published by EirGrid and SONI (System Operator for Northern Ireland) outlining the expected electricity demand and the level of generation capacity that will be required on the island over the next ten years. The scenarios generated within the statement forecast that on an all-island basis the growth in energy demand over the period up to 2028 varies between 18% in the low demand scenario, to 41% in the high scenario. In the Ireland (Republic of Ireland) scenario the demand is greater, 23% in the low demand scenario and 47% in the high demand scenario. The significant increase in demand is largely due to the expected expansion of large energy users such as data centres. The analysis carried out by EirGrid shows that demand from data centres could account for 29% of all demand in Ireland by 2028 in the Median demand scenario.

As illustrated in Figure 4.4 gas is shown as the main contributor to the existing and future all-Ireland de-rated dispatchable generation and will be an important source of energy generation following the phasing out of coal burning power plants throughout the island. The 2018 generation sources state that gas represents 52.3% of energy production, while fossil fuels (peat, coal and oil) account for 14.3%.

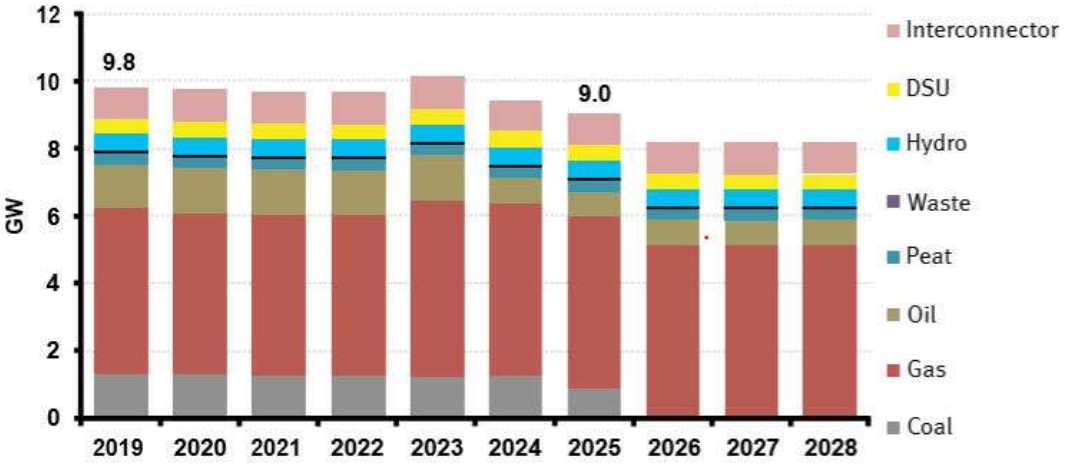

Figure 3 - All-Island portfolio of de-rated dispatchable generation and interconnection capacity, as assumed in our reference scenario

Figure 4-4:Calculated Dispatchable Generation

The adequacy of power supply is examined within the statement and finds that during the period 2019 to 2025 there is a significant generation surplus, however, this favourable position is eroded following the planned closure of generation plants. A total of 1,669 megawatts of export capacity will be lost in Ireland before 2025, with the closure of Aghada (AT1), North Wall 5, Tarbert 1, 2, 3, 4, and Moneypoint. This scenario is shown in Figure 4-5 and illustrates the need for new low-carbon plant to be commissioned to off-set high-carbon plant closures.

The Median Total Energy Forecast predicts an overall Energy Requirement for Ireland of approximately 41TWh by 2030. The Single Energy Market (SEM) capacity market is designed to procure sufficient capacity to meet the adequacy standard. The recent SEM capacity auctions, T-1 2019/2020 and T-4 2022/2023, were successfully held and secured 8.3 GW and 7.4 GW of de-rated capacity respectively for the All-Island system. A total of 4.9 GW from the 8.3 GW of de-rated capacity cleared in the T-1 2019/2020 All-Island capacity auction is from gas fired power plants. As detailed within the statement gas fired power plants will continue to be the most significant technology for electricity generation on the journey to a low carbon future.

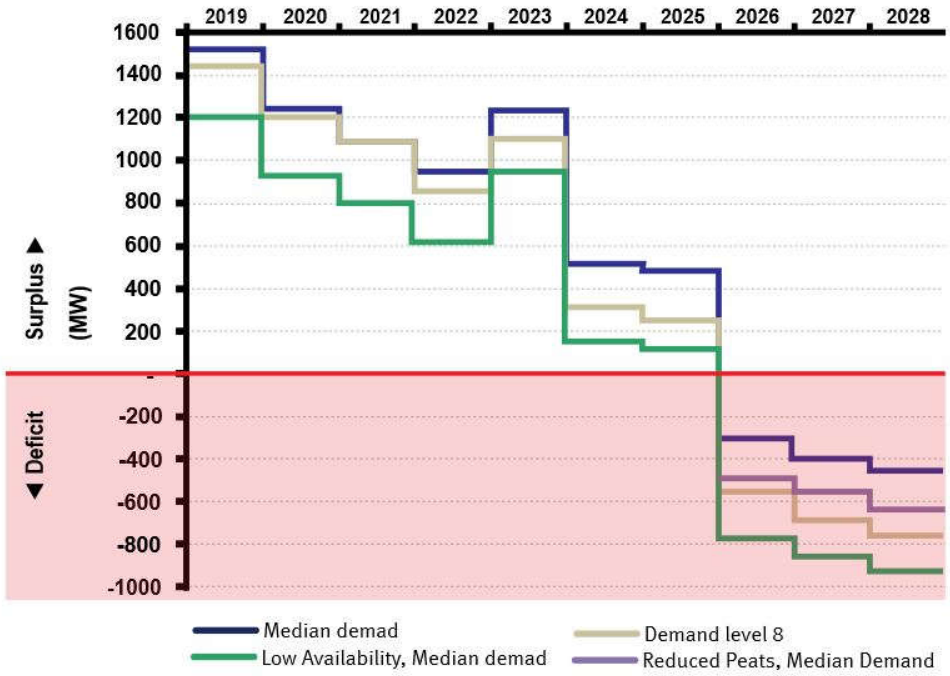

Figure 28 - Adequacy results for Ireland, in terms of surplus or deficit of plant. Results are given for the Median and 8th level demand scenarios. Also shown are the scenarios of Low Availability and Reduced Peats

Figure 4-5: Adequacy of Supply 2019-2028

4.4.4 EAST COAST GENERATION OPPORTUNITY ASSESSMENT (EIRGRID, FEBRUARY 2019)

In this assessment, EirGrid acknowledges that offshore wind generation will play a key part in meeting Ireland's 2030 climate change targets. It is expected that the initial phases of offshore wind generation development in Ireland will be focused on the East coast of the country.

In tandem with the development of offshore wind generation, EirGrid note that it has also had numerous enquiries about the connection of large, conventional thermal generation projects in and around Dublin. Electricity demand is increasing rapidly in the greater Dublin region primarily due to the growth of data centres which require large amounts of power. It is likely that both offshore wind and new thermal generation will be required to meet the growing electricity demands in the eastern region.

The East Coast Generation Opportunity Assessment presents analysis that EirGrid has undertaken to identify the opportunities for connecting new power generation sources in the East coast region of Ireland from a grid capacity perspective. The analysis provides useful information for developers seeking to connect generation in the region.

The results indicated that locations close to the Dublin load centre and/or with multiple 220 kV connections into the Dublin area have the best opportunities for new generation capacity.

4.4.5 SHAPING OUR ELECTRICITY FUTURE ROADMAP (2021)

In autumn 2021 EirGrid will publish Shaping Our Electricity Future Roadmap, a policy document to advise and guide stakeholders on the optimal path for delivery of a renewable-based power system. As set out in Section 1.3.4 above, the National Energy and Climate Plan 2021 – 2030 has set a target of 70% RES-E.

To gather feedback from the government, key industry stakeholders and individual energy consumers, EirGrid launched a consultation paper entitled "Shaping our future electricity." This paper indicates that Ireland has an installed dispatchable generation capacity of 7,252 MW with Section 2.2.1.2. stating that:

"*New dispatchable resources are needed to ensure that the generation portfolio continues to meet reliability standards and that demand can met on low RES output days. Gas-fired generation is expected to continue to play an important role, replacing retiring conventional plant and providing the multi-day capacity required to ensure security of supply during prolonged periods of low wind. This capacity is especially important when large continental scale weather patterns affect the availability of RES in Ireland and in neighbouring electricity systems.*"[4]

In addition, the paper provides a breakdown of anticipated energy requirements from each sector up to the year 2030. This assessment has identified large energy users such as data centres as the primary driver of demand, requiring 9.8-12.6 TWh by 2030.

4.5 NATIONAL DATA CENTRE CONTEXT

4.5.1 GOVERNMENT STATEMENT ON THE ROLE OF DATA CENTRES IN IRELANDS ENTERPRISE STRATEGY (2018)

The strategic approach aims of this Government Statement is to:

- Drive Ireland's ambition in the digital economy as a location of choice for investment and a seed-bed for technology entrepreneurship across a range of sectors and activities;
- Contribute to regional development, deliver associated economic activities and support the creation of high quality, sustainable jobs;
- Align enterprise electricity demand with generation capacity and transmission planning; and
- Ensure that potential downside costs are minimised and that economic impact is optimised.

The plan-led approach aligns with the objective set out in the NPF for the 'promotion of Ireland as a sustainable international destination for ICT infrastructures such as data centres and associated economic activities' to deliver on the National Strategic Outcome 6 'A strong economy supported by enterprise, innovation and skills'.

The Government Statement acknowledges that data centres are central to the digital economy. They generate added economic benefit across the value chain. Data centres provide remote support functions for other firms which themselves undertake production, research and

[4] Shaping our electricity Future.," 2021, Eirgrid, p.9

development, marketing, sales, service, and support activities in locations with no physical/geographic connection to the data centre.

Specifically in the case of the proposed power plant in Profile Park, it is noted that the Government Statement also includes the following passage:

While investments in a range of sectors are utility intensive and will increase demand, it is important to acknowledge that data centres pose considerable challenges to the future planning and operation of Ireland's power system. Such challenges arise in terms of renewable energy policy/objectives, generation adequacy including maintaining local and regional security of electricity supply, community acceptance and electricity customer costs. By recognising these challenges, the Government can take steps to mitigate them so that Ireland optimises the benefits that these strategically important investments bring.

In terms of renewables, Ireland has a legally binding target to meet 16 per cent of its energy requirements from renewable sources by 2020 and additional renewable generation will be required. The National Mitigation Plan provides a framework to guide investment decisions to reduce greenhouse gas emissions. Renewable electricity support schemes (in place and under development) aim to incentivise the growth of renewable electricity technologies, recognising the cost differential between fossil and renewable energy resources. The proposed new Renewable Electricity Support Scheme will have at its core policies that will increase the participation in, and ownership of, renewable electricity projects by local communities. It is welcome that developers of data centres place an emphasis on how energy requirements can be met from renewable sources, and data centres will likely play a role in creating a market for renewable energy development.

Currently, a large portion of existing and planned data centres that are due to connect to the electricity system are expected to be in the Dublin area. Based on existing data centres, committed expansion and expected growth, total demand could treble within the next ten years. A consistent and supportive whole of government approach will be brought to the realisation of the transmission and distribution assets required to support the level of data centre ambition that we adopt.

4.5.2 EIRGRIDS DATA CENTRE OFFER POLICY INFORMATION NOTE (2020)

EirGrid issued a Data Centre Connection Policy V2, under which they have identified the greater Dublin region as a capacity constrained area, especially with regard to satisfying the power needs of new data centres.

EirGrid are promoting the development of dual fuel power generation in the greater Dublin area through the capacity market auction. EirGrid will provide firm capacity to a data centre where it provides new on-site dispatchable generation. This can also be facilitated through the installation of generation plant in the close proximity to the data centre, for example through projects such as Greener Ideas Limited in Profile Park. Therefore the location and importance of the proposed power plant at Profile Park is one such that it helps enable additional development on the Profile Park industrial estate, especially with regards to new data centres, who otherwise may need to build this capacity on-site.

4.6 SUMMARY OF NEED FOR POWER PLANT

At present, based on Sustainable Energy Authority of Ireland (SEAI)'s Renewable Energy in Ireland 2020 publications Ireland is expected to fall short of its mandatory European target for a 16% renewable energy share by 2020, with overall achievement approximately 14.2%[1] by 2020. Progress towards its other targets were anticipated as follows:

- 33.2% renewable electricity by 2020 (target is 40%);
- 6.5% renewable heat by 2020 (target is 12%); and
- 7.2% renewable transport by 2020 (target is 10%).

When final statistics are published it is clear that Ireland will not have achieved its 2020 targets. The need to significantly improve its performance in terms of decarbonisation in order to meet the 2030 targets are more and more important. As demonstrated by the strategic policies and binding targets on greenhouse gas emissions set out within European and national plans, investment in lower carbon technologies for electricity generation is a key prerequisite in achieving Ireland's 2030 renewable energy target and subsequent net zero carbon energy system by 2050. The transformation of the electricity system in Ireland will require the system to be more dynamic and responsive as the challenges of introducing non-synchronised generations sources, such as wind and solar, to a synchronised transmission system are overcome.

The proposed power plant in Profile Park is considered consistent with the overarching strategy to achieve the binding 2030 emission targets, as a lower-carbon generation source it will also be a vital technology to mitigate the deficiency in electricity generation following the planned closure of fossil fuel power plants across the island of Ireland in the next six years. The power plant also represents an important electricity generation source for Ireland's transition to a low carbon economy which will require local agile distributed generation rather than relying on large centralised power generation to enable the transition to a dynamic, low carbon grid. Gas fired power plant technology allows the delivery of an efficient, safe and secure electricity system by helping to manage fluctuating electricity demands and compensate for shortages occurring from wind or solar power.

The design of the plant and its ultimate usage is therefore flexible such that it may provide power directly to the national electricity grid and/or to nearby data centre development. Electricity demand is increasing rapidly in the greater Dublin region primarily due to the growth of data centres which require large amounts of power. However, as large consumers of electricity, data centres also pose particular challenges to the future planning and operation of a sustainable power system. The reinforcement of Ireland's renewable energy distribution network will subsequently facilitate planned growth and energy provision across major demand centres; however, the development of onshore and offshore renewable energy is critically dependent on the implementation of enabling infrastructure such as the proposed power plant. In addition, and critically in relation to data centre development, EirGrid's Generation Capacity Statement 2019-2028 states that a 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, a significant proportion of this extra load will materialise in the Dublin region. This is growing energy demand within Dublin is recognised within the NPF as it states that improving energy sustainability within Dublin and its surrounding Environs will be a key future growth enabler with regard to population and employment. In addition, EirGrid's Data Centre Connection Policy reinforces this requirement in relation to data centre development and has identified the greater Dublin

region as a capacity constrained area, especially with regard to satisfying the power needs of new data centres. Therefore the location and importance of the proposed power plant at Profile Park is one such that it helps enable additional development on the Profile Park industrial estate, especially with regards to new data centres.