

## 5 Planning and Policy Context

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### 5.1 Introduction

The proposed power supply project will provide power from the National Grid to the proposed Apple data centre project phase 1 and full build out of eight data halls. The policy context for the data centre development and data centre site are intrinsically linked to the planning and policy context of the power supply project. The planning and policy context for the data centre development and data centre site are addressed in this chapter.

### 5.2 Planning Policy

The site is located in lands to which the Strategic Economic Corridor objective of the Galway County Development Plan 2015 – 2021 applies. The Strategic Economic Corridor is endowed with a high concentration of valuable infrastructure and is specifically designated based on the need to accommodate Regionally Strategic Industrial sites. A broad range of industrial type uses are envisaged for the Strategic Economic Corridor. The Apple data centre development and the power supply project are considered to be consistent with National, Regional and Local Planning Policies and Objectives and are considered to be appropriate uses for the subject lands at this location.

Information on the objectives of the Galway County Development Plan 2015 – 2021 as they apply to the site and proposed development are provided in the report prepared by McCarthy Keville O’Sullivan which accompanies this EIS.

### 5.3 Energy Policy

The power supply project will support the Apple data centre project. Apple proposes to power the data centre with 100% renewable energy. The compliance of the data centre project, powered by 100% renewable energy, with EU and National energy policies is discussed in this section.

Refer to Chapter 13 for information on the implementation of Apple’s renewable energy strategy and the capacity of the National Grid to supply the required energy.

#### 5.3.1 European Union directive and Policy Guidance

##### 5.3.1.1 Energy 2020: A strategy for competitive, sustainable and secure energy

Europe’s energy policies are driven by three main objectives including:

- Achieving security of energy supply to ensure the reliable provision of energy whenever and wherever needed.

- Achieving competitiveness of energy supply that provides affordable prices for homes, businesses, and industries.
- Achieving sustainable energy supply, through the lowering of greenhouse gas emissions, pollution, and fossil fuel dependence.

These objectives are driven through an energy and climate strategy framework that covers three distinct timeframes including:

- The 2020 Climate and Energy Package (European Commission 2010, *Energy 2020: A strategy for competitive, sustainable and secure energy*) which sets out mandatory targets for member states to achieve an overall reduction in greenhouse gas emissions by 20%, an increase in the share of renewable energy to at least 20% of consumption, and energy savings of 20% or more (the “20:20:20” targets).
- 2030 framework for climate and energy policies (European Commission 2014, *A policy framework for climate and energy in the period from 2020 to 2030*) which aims to make the European Union's economy and energy system more competitive, secure and sustainable, and sets targets for 2030 as follows:
  - At least 40% cuts in greenhouse gas emissions (from 1990 levels)
  - At least 27% share for renewable energy
  - At least 27% improvement in energy efficiency.
- The “Energy Roadmap 2050” for moving to a low-carbon economy in 2050 (European Commission (2011), *Energy Roadmap 2050*) which looks beyond short-term objectives and sets out a cost-effective pathway for achieving emissions reductions of 80% below 1990 levels.

In order to achieve the targets of the 2020 Climate and Energy Package, a suite of Directives were published and enacted including the Directive on the Promotion of the Use of Energy from Renewable Sources (2009/28/EC) and the Energy Efficiency Directive (Directive 2012/27/EU). The Renewable Energy Sources Directive (2009/28/EC) requires the EU to fulfil at least 20% of its total energy needs with renewables by 2020 through mandatory Member State renewable targets. The Energy Efficiency Directive is described in further detail below.

In February 2015, the European Commission announced that it will develop an Energy Union package which will aim to build on the 2030 and 2050 frameworks and integrate a series of policy areas into one cohesive strategy with an integrated set of measures (European Commission 2015, *A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy*).

### **Conformance of the Project to Policy Objectives**

In utilising energy derived from renewable sources for 100% of the operational power requirements, the proposed power supply project and the Apple data centre project will make a substantial and positive contribution to the achievement of the objectives of the 2020 Climate and Energy Package as well as the medium to longer term aims of the 2030 policy framework for climate and energy and the Energy Roadmap 2050.

### 5.3.1.2 EU Directive 2009/28/EC: Renewable Energy

This Directive highlights the importance of electricity from renewable sources for the security and diversification of energy supply. The Directive seeks to increase the contribution of renewable energy sources to electricity production.

The Directive provides the following definitions in Article 2:

*‘energy from renewable sources’ means energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases;*

Article 3 (2) of the Directive requires Member States to encourage greater consumption of electricity from renewable sources in accordance with national indicative targets/trajectory (part B of Annex I).

To encourage the development of renewable energy, the Directive requires the EU to fulfil at least 20% of its total energy needs with renewables by 2020 through mandatory Member State renewable targets. The target set for Ireland’s share of energy from renewable sources in gross final consumption (GFC) is 16% by 2020 as stated in Annex 1 of the Directive. It also requires that electricity from renewable sources is given priority access or guaranteed access to the grid-system.

To ensure progress towards the mandatory targets, the Directive also requires that Member States prepare and submit Renewable Energy Action Plans that set out Member States’ national targets for the share of energy from renewable sources consumed in transport, electricity and heating and cooling in 2020.

Failure to meet EU targets on the use of energy from renewable sources could result in EU sanctions.

#### Conformance of the Project to Policy Objectives

The contribution of renewables to gross final consumption (GFC) in Ireland was measured at 8.6% in 2014<sup>1</sup>, which indicates there is considerable capacity for additional renewable energy in order to achieve a GFC target of 16% by 2020. In utilising energy derived from renewable sources for 100% of its power requirements, the proposed Apple data centre project and power supply project will greatly assist Ireland in meeting the requirements of the Renewable Energy Sources Directive (2009/28/EC) and make a positive contribution to the achievement of the objectives of the and the European energy and climate strategy framework.

<sup>1</sup> SEAI (2015), *Energy in Ireland 1990-2014 – 2015 Report*

## 5.3.2 Irish National Policy, Objectives and Guidance on Energy

### 5.3.2.1 National Climate Change Strategy 2007 to 2012

The National Climate Change Strategy details the proposed measures to be taken by Ireland to limit the emissions of greenhouse gases such as carbon dioxide, methane, oxides of nitrogen, and certain fluorinated gases from all sectors of the economy to meet its 2008 to 2012 commitment. It also demonstrates how these measures position the nation for the post-2012 period, identifying the areas in which further measures are being researched and developed to enable the eventual 2020 commitment to be met.

The Strategy supports the production of energy from non-fossil fuel sources, displacing the carbon dioxide emissions associated with those sources.

#### Conformance of the Project to Policy Objectives

The proposed Apple data centre project will use electricity generated from renewable sources for 100% of its power requirements, in line with the framework of measures taken in the National Climate Change Strategy 2007-2012 to limit the emissions of greenhouse gases. Furthermore, by utilising energy derived from renewable sources, the proposed Apple data centre project and power supply project demonstrate their conformance with post-2012 measures outlined in the National Climate Change Strategy 2007-2012 to enable the eventual 2020 commitment, as established by the EU, to be met.

### 5.3.2.2 Review of National Climate Change Policy

The 2007-2012 strategy has not been replaced but a *Review of National Climate Change Policy* published by the Department of Environment Community and Local Government in 2011 found that early and effective transition to a low-carbon, climate resilient future provides opportunities for Ireland to demonstrate its competitiveness in the emerging green economy in the EU.

#### Conformance of the Project to Policy Objectives

In using electricity derived from renewable sources for 100% of its power requirements, the proposed Apple data centre project will provide a substantial contribution in supporting the transition towards a low-carbon future. In addition, given the emerging growth of the data centre industry in Ireland, the Apple data centre and the power supply project have the potential to act as a flagship project in providing the impetus for further transitions by similar data centre developments towards low-carbon energy requirements.

### 5.3.2.3 Delivering a Sustainable Energy Future for Ireland: The Energy Policy Framework 2007 to 2020

The Irish Government issued a White Paper on energy policy in 2007 entitled *Delivering a Sustainable Energy Future for Ireland: The Energy Policy Framework 2007 to 2020*. The primary objective of the White Paper is security of

supply, sustainable energy supply and use and economic competitiveness. It contained an objective of the Government to achieve 33% of the country's electricity consumption from renewable sources by 2020 with 15% the target for 2010. In this respect, Ireland set a target to increase the capacity of renewable energy based electricity generation capacity to at least 1,450 MW installed.

### Conformance of the Project to Policy Objectives

The proposed Apple data centre project, in using electricity generated from renewable sources for 100% of its power requirements, will provide a substantive contribution to the objectives and goals contained within the White Paper. The energy source proposed for the Apple data centre and the power supply project is inherently in keeping with the objectives of this Framework in terms of security of supply, sustainable energy supply and use and provides a demonstrable example of the economic competitiveness that underpins the White Paper.

#### 5.3.2.4 National Renewable Energy Action Plan

Under the Renewable Energy Sources Directive (2009/28/EC), each Member State was required to adopt a national renewable energy action plan and submit these to the European Commission. Ireland's National Renewable Energy Action Plan (NREAP) was adopted and submitted to the EC in 2010 and establishes the national targets for the share of energy from renewable sources consumed in electricity, transport and heating and cooling in 2020. Under this Plan, the Government established a new target of 40% electricity consumption from renewable sources by 2020. Similarly, new targets of 12% renewable heat and 10% electric vehicles by 2020 are also provided in this Plan. A key focus of this Plan is the realignment of renewable energy as a central component of overall energy policy in Ireland by reducing dependence on fossil fuels, improving security of supply and reducing greenhouse emissions whilst delivering green jobs to the economy thus contributing to national competitiveness.

### Conformance of the Project to Policy Objectives

The total contribution from renewable energy to gross electricity consumption in Ireland in 2014 was 22.7% (compared with 20.1% in 2013 and 4.9% in 1990). Of this 22.7% figure, wind, hydro and biomass-generated electricity in 2014 accounted for 18.2%, 2.6% and 1.9% respectively<sup>2</sup>. These figures indicate that there is considerable capacity for additional renewable energy provisions in order to achieve a target of 40% electricity consumption from renewable sources by 2020 as established in the NREAP. The proposed Apple data centre project, in using electricity generated from renewable sources for 100% of its power requirements, will provide a substantive contribution to the objectives of the NREAP, and in particular towards achieving a target of 40% electricity consumption from renewable sources by 2020. The Plan re-affirms and strengthens previous policy instruments and the sourcing of energy through renewable means for the proposed Apple data centre project is inherently in keeping with its core objectives of this Plan. **Chapter 13** addresses the capacity of

<sup>2</sup> SEAI (2015), *Energy in Ireland 1990-2014 – 2015 Report*

the power grid, now and in the future, to supply sufficient renewable energy to meet Apple's requirements.

### 5.3.2.5 Strategy for Renewable Energy 2012-2020

The Government's Strategy for Renewable Energy 2012 – 2020 was published by the Department of Communications, Energy and Natural Resources in May 2012. It acknowledges the national importance of developing renewable energy and reaffirms the Government's commitment to this. It notes the significant potential for Ireland to become a renewable energy exporter within a short time and the role of renewable energy in securing sustainable and competitive energy supplies thereby reducing dependency on expensive fossil imports and underpinning the move towards a low carbon economy. A key focus of this Strategy is the pivotal role energy policy can play in creating the conditions job creation and a return to economic growth.

#### Conformance of the Project to Policy Objectives

In obtaining 100% of its energy needs through renewable sources, the proposed Apple data centre project will provide a substantial contribution to the objectives of the Strategy. In particular, the data centre project will provide for investment into the renewable energy sector as a result of the data centre's energy requirements. The data centre, once all phases are completed, will contain 8 no. data halls, each with a peak demand of 30MW totalling approximately 240MW peak demand for the entire Apple data centre project. Supplying this energy demand through renewable sources will have considerable economic benefits for the renewable energy sector in Ireland through increased long-term employment for employees in this sector as well as associated construction and maintenance employment. The proposed Apple data centre project will play a key role, both directly and indirectly, in job creation and economic growth in the renewable energy sector and other sectors. Accordingly, the Apple data centre and the power supply project represent a realisation of effective job creation and economic growth through sustainable energy production as espoused by the Strategy.

### 5.3.2.6 National Energy Efficiency Action Plan, 2014

The *National Energy Efficiency Action Plan 2014* details the range of actions, to which the Government is committed, across all sectors of the economy to achieve the energy savings target of 20% in 2020, and 33% reduction in public sector energy use.

#### Conformance of the Project to Policy Objectives

Apple's renewable energy supply strategy for the proposed development, described in **Chapter 13**, and the proposed Apple data centre project is a tiered approach, which starts with efficiency and conservation measures, followed by pursuing partnerships with utilities and energy suppliers for grid-purchased renewable energy, and then identifying opportunities to support renewable energy projects located in the same region or electric grid as the facilities they support.

In relation to energy efficiency and conservation, the proposed power supply and the proposed Apple data centre project incorporate a variety of green building technologies that help achieve Apple's energy efficiency performance goals. Initiatives currently in the building design include:

- Electrical systems with the highest efficiencies available in the industry.
- Mechanical systems with free cooling (use of untreated outside air to cool the internal environment) technology without refrigerants.
- A climate-responsive design.
- LED electric lighting.

The proposed power supply project and the proposed Apple data centre project demonstrate Apple's commitment to reducing the environmental impact of the facility through energy-efficient, green building design. Qualifying design elements include:

- Reduction of energy use by the utilization of Uninterruptible Power Systems with efficiencies of up to 99% and power distribution transformers with efficiencies of up to 99.5%.
- Provision of electric vehicle charging stations.

Taken together, the energy efficient design elements will combine to create a highly energy efficient building.

Thus, the project will contribute to objectives of the National Energy Efficiency Action Plan 2014.

### **5.3.2.7 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*, has recently been published and provides a complete energy update and a framework to guide policy up to 2030, building on the previous White Paper issued in 2007. The White Paper states the advances in Ireland's energy efficiency and renewable energy and generation use between 2007 and 2015. Renewable energy sources accounted for nearly 23% of Ireland's electricity consumption in 2014, which is just over halfway to Ireland's 2020 target of 40%. The policy framework sets out a vision for a low carbon future that maintains Ireland's competitiveness and ensures a supply of affordable energy. The paper advises that a range of policy measures will be employed to achieve this vision and will involve, amongst other initiatives, generating electricity from renewable sources of which there are plentiful indigenous supplies and increasing the use of electricity and bio energy to heat homes and fuel transport. The White Paper states that onshore wind continues to be the main contributor of energy (18.2% of total generation and 81% for electricity generated from renewable sources in 2014) and that a total of 3,500 - 4000 MW of onshore renewable generation capacity is likely to be required to achieve the 2020 target of 40% electricity consumption from renewable sources. To achieve this target the average rate of build of onshore wind generation will need to increase up to 260



MW per year from the current rate of build which is about 170 MW per year. From analysis of data published on EirGrid's and ESB Network's websites (September 2015) by the Sustainable Energy Authority of Ireland (SEAI), there was 268 MW of wind generation contracted for connection before the end of 2015 and a further 1,027 MW by the end of 2016. There is an additional 475 MW contracted for connection beyond then<sup>3</sup>.

### Conformance of the Project to Policy Objectives

The White Paper reaffirms the commitment of the Government to achieving those targets outlined in previous policy instruments, namely 40% electricity consumption from renewable sources by 2020. Central to the White Paper is its projected outlook to energy usage in Ireland up to 2050, with an undertaking to reduce Greenhouse Gas (GHG) emissions from the energy sector by between 80% and 95% (compared to 1990 levels) by 2050. The period between now and 2030 is seen as a critical stage in achieving this objective. The proposed Apple data centre project, in using electricity generated from renewable sources to meet 100% of its power requirements, will conform to the objectives of the White Paper which reflects the most up to date energy policy position by the Government. The White Paper re-affirms and strengthens previous policy instruments and the sourcing of energy through renewable means over the lifetime of the proposed Apple data centre project is inherently in keeping with the core objectives of this policy document.

Furthermore, analysis of EirGrid and ESB Networks connection data by the SEAI (*Energy in Ireland 1990-2014 – 2015 Report*) indicates that there is a significant amount of energy capacity from renewable means contracted for connection. These data indicate that there is ample scope for increase in build rates necessary to achieve the 2020 target of 40% electricity consumption from renewable energy sources. Refer to **Chapter 13** for further information on the capacity of the National Grid to supply the Apple data centre's power requirements with renewable power.

In this regard, the power supply project and Apple data centre project can provide a viable incentive to achieving increases in build rates of renewable energy projects.

### 5.3.2.8 Energy Policy Compliance - Conclusion

As outlined above, there is a considerable number of European and national policy instruments varying from short to long term timeframes in support of a shift in energy policy towards low carbon means. An integral feature of this policy shift is the reduction in the reliance on fossil fuels and the repositioning of energy derived from renewable sources as the central focus. This approach has been consistent across European and Irish energy policy contexts since the Kyoto Protocol in 1998. As demonstrated, the power supply project and the proposed Apple data centre project conform to this policy stance in utilising energy derived from renewable sources to cater for its energy demand.

<sup>3</sup> SEAI (2015), *Energy in Ireland 1990-2014 – 2015 Report*



From analysis of the most recent national energy statistics, the total contribution from renewable energy to gross electricity consumption in Ireland in 2014 was 22.7%<sup>4</sup>. This figure indicates that there is considerable capacity for additional renewable energy provision in order to achieve a target of 40% electricity consumption from renewable sources by 2020 as established in the National Renewable Energy Action Plan. In addition, detailed analysis of Irish data centre load projections to 2020 found that there is ample capacity in the EirGrid network to support additional loads. Refer to **Chapter 13** for further information on the capacity of the National Grid to supply the Apple data centre's power requirements with renewable power.

Accordingly, the power supply project and the proposed Apple data centre can make a substantial contribution to the achievement of European and national energy targets and policy objectives.

## 5.4 References

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