



Derry City & Strabane
District Council
Comhairle Chathair
Dhoire & Cheantar
an tSratha Báin
Derry Cittie & Stràbane
Destrict Council

DERRY CITY & STRABANE DISTRICT COUNCIL

LOCAL DEVELOPMENT PLAN (LDP) 2032



DRAFT PLAN STRATEGY

Evidence Base EVB 24: Renewable and Low Carbon Energy Development, December 2019

Updated December 2021

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DERRY CITY AND STRABANE DISTRICT COUNCIL

LOCAL DEVELOPMENT PLAN (LDP) 2032



EVIDENCE BASE PAPER EVB 25: Renewable Energy and Low Carbon Energy Development

This Document is one in a series which comprises the evidence base that informs the preparation of the Derry City and Strabane District Local Development Plan (LDP 2032) Plan Strategy.

It builds upon the suite of thematic Topic Papers prepared and published alongside the LDP Preferred Options Paper (POP), which established the May 2017 baseline position and identified the key issues that needed to be addressed by the LDP.

This Renewable and Low Carbon Energy Development Evidence Base paper updates the baseline POP position and sets out the evidence base that has informed the strategy, designations and policies within the draft LDP Plan Strategy. Evidence has been informed by feedback from public consultation, discussions with Elected Members, input from statutory consultees, stakeholder groups, from other Departments within the Council, liaison with adjoining Councils and through the iterative Sustainability Appraisal process.

The Evidence Base is published as a ‘supporting document’ in accordance with Regulation 15(a) of the Planning (LDP) Regulations (NI) 2015.

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1.0 Introduction to Paper

1.1 The information presented in this paper assists the Council in developing an informed and innovative approach to setting clearly defined aims and objectives for the further development of renewable and low carbon sources of energy in the District. It provides the evidence base information to consider how the LDP can deliver a range of renewable and low carbon energy sources to meet EU and Regional targets by:

- providing an understanding of the potential for renewable and low carbon energy generation in our District;
- considering any preferred strategies for encouraging the development of renewable and low carbon energy - both large scale and micro generation, while protecting the built and natural environment, sensitive landscapes and residential amenity;
- considering how the LDP can facilitate growth in the renewable energy sector and emerging renewable and low carbon energy technology in line with the Derry and Strabane Integrated Economic Development Strategy and forecasts for the manufacturing sector provided by DETI (please refer to EVB 9 Economic Development).

2.0 Legislative and Policy Context

European and National Legislation

- 2.1 The European Commission's Renewable Energy Directive (2009/28/EC) establishes the overall policy for the production and promotion of energy from renewable sources in the EU and sets a binding target to reduce EU greenhouse gas emissions by 20% by 2020.
- 2.2 The UK Government passed the Climate Change Act in 2008. The Act sets ambitious targets beyond those agreed by Europe in setting legally binding targets to reduce carbon emissions by 80% by 2050, from 1990 levels.

National Policy

- 2.3 The Strategic Energy Framework (SEF2010-2020) (DETI 2010) set new and challenging renewable energy targets for Northern Ireland. The SEF makes it clear that onshore wind will continue to provide the largest proportion of renewable electricity generation in the period to 2020. The SEF stated that NI will seek to achieve 40% of electricity consumption from renewable sources by 2020.
- 2.4 Sustainable Energy Action Plan 2012-2015 aimed to bring into one short document all that the Northern Ireland Executive is doing to promote sustainable energy to meet our ambitious renewable energy targets. It brings together all existing action plans and strategies as part of a holistic plan to give Northern Ireland a more sustainable energy future. It contains actions which have come out of the Sustainable Energy Inter-Departmental Working Group (SEIDWG) to ensure that sustainable energy actions are joined up as possible between the departments with responsibility for elements of energy policy. The majority of actions within the document are based on short term (2015), but sight is also set on the medium (to 2020) and long term (2050).
- 2.5 Additional targets were set by the Programme for Government 2011-2015, this required Northern Ireland to seek to achieve 20% of its electricity consumption from renewable resources and a 4% renewable heat by 2015. Electricity generated from on-shore wind farms has been identified as the most established, large scale renewable source in Northern Ireland and the main source to achieving this target.
- 2.6 Draft Programme for Government Framework 2016-2021 was a new approach which does not set any targets for renewable energy generation. Its focus is on the major societal outcomes that the Executive wants to achieve and provides a basis for all sectors to contribute to the development of plans and actions. There are 14 strategic outcomes which, taken together, the Executive believes best describes the society we wish to have. The outcomes are supported by 42 indicators, which

are clear statements for change. Strategic outcome No 2 of the PFG is to be a society which *lives and works sustainably - protecting the environment*.

2021 Update: The Draft PFG 2016-21 was then superseded by an Outcomes Delivery Plan for 2018 & 2019, which was then followed by a PfG 2021 Outcomes Delivery Framework in March 2021; both of them contained the same outcome as above i.e. to 'live and work sustainably - protecting the environment'. The 'indicators' to achieve / measure this outcome are not yet decided.

2.7 The Department of Enterprise Trade and Investment (DETI) published The Onshore Renewable Energy Action Plan 2013-2020 (OREAP) (November 2013.) It was developed to examine the role and cumulative impact of potential market led renewable electricity generation mixes in meeting the Northern Ireland Executive's target of 40% electricity consumption to come from renewable sources by 2020. Its aim was to "Optimise the amount of electricity sustainably generated from onshore renewable resources in order to enhance diversity and security of supply, reduce carbon emissions, contribute to the 40% renewable electricity target by 2020 and beyond and develop business and employment opportunities for NI companies."

2.8 A number of key actions were to be taken forward by DETI and others during the life of the OREAP.

2021 Update: By 2020, the 40% target was being met, with approx. 42-47% of NI energy from renewables; see <https://www.economy-ni.gov.uk/sites/default/files/publications/economy/Issue-21-Electricity-Consumption-and-Renewable-Generation-Northern-Ireland-October-2020-to-September-2021.pdf>

The new Northern Ireland Energy Strategy 'Path to Net Zero Energy' (December 2021) includes a target to meet 70% of electricity consumption from a diverse mix of renewable sources by 2030. See: <https://www.economy-ni.gov.uk/news/lyons-announces-new-energy-strategy-path-net-zero-energy> & <https://www.economy-ni.gov.uk/publications/energy-strategy-path-net-zero-energy-action-plan>

Regional Planning Policy

2.9 The regional policy context is provided by the Regional Development Strategy (RDS) 2035 which presents regional guidance (RG) under three sustainable development themes - economy, society and environment. RG5: Deliver a sustainable and secure energy supply states that Northern Ireland needs a robust and sustainable energy infrastructure. This should deliver reliable and secure sources of energy to communities and businesses across the Region. New generation or distribution infrastructure must be carefully planned and assessed to avoid adverse environmental effects, particularly on or near protected sites. At the

plan level this requires a Strategic Environment Assessment or Environmental Impact Assessment and potentially a Habitats Regulation Assessment to identify likely effects and appropriate mitigation. Under this regional guidance, there is a need to:

- Increase the contribution that renewable energy can make to the overall energy mix;
- Strengthen the Grid;
- Provide new gas infrastructure;
- Work with neighbours; and
- Develop 'Smart Grid' Initiatives.

2.10 Specific measures to improve the quality of the environment are contained within Strategic Planning Guidelines **RG9: Reduce our carbon footprint and facilitate mitigation and adaptation to climate change whilst improving air quality.**

Mitigation:

- ***Increase the use of Renewable Energies.*** Energy production from fossil fuels is a major source of greenhouse gas emissions and other pollutants. Northern Ireland is largely dependent on fossil fuel combustion for electricity generation. Energy efficiency along with decarbonisation of the power sector is the key to achieving emissions reduction target. To meet the SEA target of 40% of electricity consumption from renewables and 10% penetration from renewable heat, will require increasing numbers of renewable and low carbon energy installations and the grid infrastructure to support them. These must be appropriately sited to minimize their environmental impact.

Everyone's Involved – Sustainable Development Strategy

2.11 One of the six Priority Areas for Action identified in the SDS relates to '*Ensuring reliable, affordable and sustainable energy provision and reducing our carbon footprint.*' Objectives within this Priority include the need to reduce greenhouse gas emissions, increase the proportion of energy derived from renewable sources, implement energy efficiency measures (particularly for vulnerable groups), increase energy security, and adapt to the impacts of climate change.

Strategic Planning Policy Statement (SPPS) and the LDP

2.12 The SPPS (published in final form by the DOE (now DFI) in September 2015) explains the new Development Plan and Development Management system requirements and consolidates the existing suite of strategic subject planning policies into a single document. This is a very important document in setting out the requirements of the LDP.

- 2.13 The aim of this SPPS in relation to renewable energy is to facilitate the siting of renewable energy generating facilities in appropriate locations within the built and natural environment in order to achieve Northern Ireland’s renewable energy targets and to realise the benefits of renewable energy without compromising other environmental assets of acknowledged importance.

The regional strategic objectives for renewable energy are to:

- Ensure that the environment, landscape, visual and amenity impacts associated with or arising from renewable energy development are adequately addressed;
 - Ensure adequate protection of the region’s built, natural, and cultural heritage features; and
 - Facilitate the integration of renewable energy technology into the design, siting and layout of new development and promote greater application of the principles of Passive Solar Design.
- 2.14 Renewable energy development proposals in the marine environment are managed under a separate consenting regime within the framework of the UK Marine Policy Statement. It is important for both terrestrial and marine environments to work together.
- 2.15 Councils should set out policies and proposals in their LDP that support a diverse range of renewable energy development, including the integration of micro generation and passive solar design. Furthermore, LDPs must take into account the regional strategic objectives, local circumstance and the wider environmental, economic and social benefits of renewable energy development.
- 2.16 Councils are encouraged when formulating policies and proposals for the LDP to take particular care when considering the potential impact of all renewable proposals on the landscape, as, for example, some landscapes may be able to accommodate wind farms or solar farms more easily than others on account of their topography, landform and ability to limit visibility.
- 2.17 A cautious approach for renewable and low carbon energy development proposals will apply within designated landscapes which are of significant value, such as the Area of Outstanding Natural Beauty. In such sensitive landscapes, it may be difficult to accommodate such proposals, particularly wind turbines, without detriment to the region’s cultural and natural heritage assets.
- 2.18 Development that generates energy from renewable and low carbon resources will be permitted where the proposal and any associated buildings and infrastructure, will not result in an unacceptable adverse impact on the following planning considerations:

- Public safety, human health, or residential amenity;
- Visual amenity and landscape character;
- Biodiversity, nature conservation or built heritage interests;
- Local natural resources, such as air quality, water quality or quantity; and
- Public access to the countryside.

Call for Evidence – Strategic Planning Policy for Renewable Energy

- 2.19 On the 7th March 2016, the Department announced ‘Calls for Evidence’ to help inform the scope of the proposed focused review of strategic planning policy for Renewable Energy Development.
- 2.20 This gave council the opportunity to comment on all aspects of strategic planning policy for Renewable Energy; and how can strategic planning policy best assist with addressing potential amenity issues that may arise as a result of facilitating all types of renewable energy development (e.g. wind, solar, water (hydropower), geothermal energy, and biomass)?
- 2.21 In considering Strategic Planning Policy for Renewable Energies, Derry City and Strabane District Council identified the following key areas for consideration:
- The location in the north-west with upland mountainous landscapes creates ideal conditions for harnessing wind energy. Accordingly, it has generated a significant amount of single turbines and wind farm developments. The pro- renewable thrust of the SPPS and lack of support for refusal from the PAC decisions in terms of cumulative landscape impact consideration meant that the number of developments within our district and those in pre-development stage have negated the potential for a possible exclusion zones to be designated within the LDP. The damage in some areas is considered done.
 - Concerns regarding the potential last minute rush of applications before the ROC payments closure in 2016 and the implications this could have on the remaining landscape.
 - Council supports that we should actively work toward meeting the relevant renewable targets in terms of reducing greenhouse gases, and renewable energy generation but this should not be at the expense of our rural landscape.
 - The renewables policy while in essence was acceptable, it was however being only applied and interpreted regularly to wind proposals as it is the current favoured renewable due to the attractive payment incentives.

- The fast moving pace of renewable technology means that policy writers were in effect playing catch up and it was unfortunate that effective policy was produced after the in wind farm developments across NI and particularly in the north-west.
- Any review should generate specific wind turbine/wind farm text and separate this from other forms of renewable policy purely on the basis that it is currently the main driver of applications and its impacts are exceptional.
- Grid connections west of the Bann are problematic and considered below standard. The cumulative impact of such connections needs to be taken into account at the time of planning application, network connection proposals need to be submitted alongside the turbine/wind farm application.
- Community benefits accrued are considered minimal in terms of landscape impact arising from the scale of these types of proposals.

2020 Update: In April 2021, the Department for Infrastructure (DfI) re-commenced the review of Strategic Planning Policy on Renewable and Low Carbon Energy, which may result in an amendment to the Strategic Planning Policy Statement (SPPS).

The aim of this review is to ensure that strategic planning policy for renewable & low carbon energy development and associated infrastructure remains fit for purpose and up-to-date to inform the decision-making in relation to development proposals for this subject area. It is also intended to inform the local development plan (LDP) process and enable plan-makers to bring forward appropriate local policies, all within the wider contemporary context for energy and the climate emergency.

An Issues Paper was distributed for consultation from December 2021 until February 2022. See: <https://www.infrastructure-ni.gov.uk/publications/review-strategic-planning-policy-renewable-and-low-carbon-energy>

Marine Consideration

2.22 In recent years, legislation has been introduced to ensure that for the first time marine activities and resources within our marine waters are planned and managed in a coherent manner. The following three interlocking pieces of legislation have been introduced to help deliver the UK vision of having “clean, healthy, safe, productive and biologically diverse oceans and seas”:

- UK Marine and Coastal Access Act (MCAA) 2009;
- UK Marine Strategy Regulations 2010; and
- The Marine Act (Northern Ireland) 2013.

2.23 In addition, the UK Marine Policy Statement (MPS) 2011 is the framework for preparing Marine Plans and taking decisions affecting the marine environment. Of particular relevance, is the legislative requirement that all public authorities taking authorisation or enforcement decisions that affect or might affect the UK marine

area to do so in accordance with the MPS unless relevant considerations indicate otherwise. Accordingly, in future, Council will not only have those legal implications in relation to terrestrial planning but also for marine matters as well.

- 2.24 The Draft Marine Plan for NI, published in April 2018, has been developed for the management of the Northern Ireland marine area and will facilitate the sustainable development of the marine area. The Marine Plan is designed to support and complement other existing legislation, policies, plans and strategies. These include the Northern Ireland Executive's draft Programme for Government, Regional Development Strategy, Going for Growth, the Strategic Energy Framework, the Strategic Planning Policy Statement (SPPS), other planning policies and the Common Fisheries Policy. It takes account of Local Development Plans, the Floods Directive, Flood Risk Management Plans, and River Basin Management Plans that implement the Water Framework Directive. The Marine Plan will complement the Marine Strategy Framework Directive (MSFD) Programme of Measures. Consequently, it will contribute to the achievement of Good Ecological Status and Good Environmental Status respectively. It will also contribute to the implementation of the Integrated Coastal Zone Management Strategy.
- 2.25 Therefore, any renewable energy development proposals or policies that could affect the coastal areas or settlements should be an LDP consideration.

Regional Planning Policy Statements

2.26 Planning Policy Statement 18: Renewable Energy

The primary aim of this Planning Policy Statement (PPS) is to encourage and facilitate the provision of renewable energy and heat generating facilities in appropriate locations within the built and natural environment. The policies of this PPS do not apply to offshore renewable energy development as these are not subject to control under the land use planning system. The PPS also promotes greater application of the principles of Passive Solar Design in the design, siting and layout of new development.

2.27 The objectives of the Statement are:

- To ensure that the environmental, landscape, visual and amenity impacts associated with or arising from renewable energy development are adequately addressed;
- To ensure adequate protection of the Region's built and natural, and cultural heritage features; and
- To facilitate the integration of renewable energy technology into the design, siting and layout of new development and promote greater application of the principles of Passive Solar Design.

- 2.28 PPS 18 should be read in conjunction with its guidance document, Best Practice Guidance to Planning Policy Statement 18: Renewable Energy (2009). This guide provides background information on the various renewable energy technologies and is designed to contribute to the planning application process.
- 2.29 In addition to this planning policy statement on renewable energy there is a draft Supplementary Planning Guidance (SPG) to PPS 18 ‘Renewable Energy’ Anaerobic Digestion, this sets out advice and guidance in relation to proposals for Anaerobic Digestion (AD).
- 2.30 The document ‘Wind Energy Development in Northern Ireland’s Landscapes’ (SPG), published by the Northern Ireland Environment Agency identifies landscape characteristics that may be sensitive to wind turbine development. This document provides supplementary planning guidance on the landscape and visual analysis process, and the indicative type of development that may be appropriate. While the SPG will be taken into account in assessing all wind turbine proposals it is not intended to be prescriptive. This should be cross-referenced with LDP Landscape / Seascape Review.
- 2.31 Planning Policy Statement 11 Planning and Waste Management is the current planning policy for waste management. It promotes the development, in appropriate locations, of waste management facilities to meet need as identified in the Waste Management Plan. Consideration of the impact of existing or proposed waste management facilities should also be given when zoning land for development and ensuring incompatibility of adjacent land use is avoided. The COMAH Directive (EU Directive 96/82/EC) requires development plans to ensure that appropriate distances are maintained between hazardous substances and residential areas of public use/open space.
- 2.32 Consideration should be given in the LDP to the collection of the gases generated as a by-product to be used as a renewable source of energy when considering proposals for waste management facilities and for upgrading existing facilities.

Other Government Strategies

- 2.33 **Towards Resource Management - The Department of Environment's Waste Management Strategy 2006-2020.** The aim of the Waste Management Strategy is to help manage waste and resources effectively. This means using material resources in a way that reduces the quantities of waste produced and, where waste is generated, to manage it in a way that minimises its impact on the environment and public health and contributes positively to economic and social development.

- 2.34 In the Strategy, emphasis is placed on the importance of waste prevention and of breaking the link between waste production and economic growth. It reinforces the need to increase waste recycling and recovery through a mixture of approaches, including the renewal of recycling targets, focused awareness campaigns and the possible introduction of incentive schemes.
- 2.35 The key objectives of this Strategy are:
- To move from waste towards resources management;
 - To demonstrate Government's commitment by setting an example to other sectors of good waste management practice and by using its purchasing power to drive change;
 - To prevent waste, where possible;
 - To use the necessary Government powers (legislative, regulatory and economic) to ensure improved waste management practices;
 - To maximise recycling and recovery of those materials which enter the waste stream;
 - To develop an integrated network of regional waste management facilities that represent value for money for Northern Ireland;
 - To attract investment, support economic development and create opportunities for increased employment and wealth creation;
 - To improve data to support investment and facilitate monitoring;
 - To maintain a regulatory framework which supports those businesses that work towards more efficient and sustainable use of resources; and
 - To promote, encourage and facilitate public action through providing the opportunity to contribute to environmental protection at individual and household levels.
- 2.36 The Department of Agriculture and Rural Development (DARD) **Renewable Energy Action Plan 2010** sets out a framework which aims to support the land-based sector to further develop renewable energy opportunities. The action plan calls for opportunities to exploit sustainable scale anaerobic digestion (AD) and its associated technologies as well as exploiting the opportunities for renewable heat produced by AD.
- 2.37 In February 2012 DETI published its cross-departmental **Bioenergy Action Plan** for 2009 – 2014. The aim of the plan was to increase the sustainable deployment of bioenergy (including the sustainable uptake of AD). A key objective of the plan was to create and maintain a supportive and encouraging policy and regulatory framework within which the bioenergy sector can develop and thrive.

Existing Plans and Designations in the District

- 2.38 Whilst there is no strategy within the **Derry Area Plan 2011** for renewable energy, reference is made to the overarching strategies of the RDS and its function to provide a spatial framework for transport, air and water quality, energy and waste strategies, and for infrastructure providers and public service promoters which would encompass renewable energies.
- 2.39 Again the **Strabane Area Plan 2001** does not have a specific policy on renewable energy however, nature and countryside conservation does apply and particular attention is given to the protection of this areas visual amenity and landscape character which would apply in the consideration of renewable energy applications.
- 2.40 **Derry City and Strabane District Council Inclusive Strategic Growth Plan – Our Community Plan.**
- The Local Government Act introduces a statutory link between the Community Plan (CP) and the LDP, in that the preparation of the LDP must ‘take account’ of the CP - The Inclusive Strategic Growth Plan (SGP). The SGP linked with the LDP provides a unique opportunity for the Council to shape the District for local communities and enables the adoption of a joined up approach, incorporating linkages to other functions such as regeneration, local economic development and community planning.
- 2.41 It is intended that the LDP is the spatial reflection of the SGP and that the two should work in tandem towards the same vision for the Council area and our communities and set the long-term social, economic and environmental objectives for the District. The Strategic Growth Plan includes key actions which complement the provisions of the LDP: develop a strategy to reduce energy use and promote energy efficiency; improve air quality, promotion of appropriate planning and siting of renewable energy development and implementing a smart grid pilot project.

Other Relevant Plans / Documents

2.42 DCSDC Climate Adaptation Plan

Council is actively working on NI’s first Council produced Climate Adaptation Plan. It is due to be published in 2020. The plan will seek to identify the key areas of vulnerability and risk for the District in relation to current and projected climate change and associated severe weather events. Impacts from future coastal / tidal flooding is a real concern within this District and reducing our carbon footprint through promoting the use of renewable energy developments will help achieve this. Actions identified in the Adaptation Plan will seek to improve the resilience

of Council services, operations and local communities. The ultimate aim is that climate action planning will become ‘business as usual’ - mainstreamed in Council decision making, policy development, service planning and delivery.

2020 Update: The DCSDC CAP 2020-2025 has been published: http://www.climate-project.net/wp-content/uploads/2020/10/DCSDC_Climate-Change-Adaptation-Plan-2020-2025_High-Res-Final-compressed.pdf

- 2.43 Effective Planning, design and decision making has a central role to play in future proofing the City and District in order to address climate change and improve adaptive capacity and resilience. This includes the consideration of the effects of climate change through land zoning, designations and applications as well as the potential impact of proposals on greenhouse gas emissions and the ability to adapt to a changing climate.

North West Regional Energy Strategy

- 2.44 Derry City & Strabane District Councils Sustainable Development and Energy Strategy proposals include a number of initiatives to consume fewer resources, minimise waste, recycle as much as possible and reduce our carbon footprint.
- 2.45 The North West Regional Energy Strategy's Vision is For the North West Region to be a leader in the development of a low carbon region by using energy efficiently and by utilising local sustainable energy sources to benefit the environment and local communities. This strategy formalises the North West Region's commitment to sustainability and to meet EU and Government targets for reductions in harmful emissions, reflecting the EU and Governments current thinking on Climate Change. It will embrace the region's commitment to addressing the challenges of Climate Change by ensuring a sustainable, secure and affordable energy supply for all citizen's whilst maximising the region's opportunities for economic growth by 2030. The guiding principles to achieve this strategy is to use less energy, use renewable energy and supply energy efficiently and reduce the regions dependence on imported energy sources and fuels.

<https://www.energyireland.ie/road-mapping-a-zero-carbon-future-for-the-north-west/>

A Circular Economy/Zero Waste Strategy for Derry City and Strabane District Council

- 2.46 Derry City and Strabane District Council (DCSDC) is pursuing a clear vision for a Zero Waste Circular Economy. A 'Zero Waste Circular Economy' is defined in the community plan as an economy where:

"...resources are used for as long as possible, have maximum value extracted from them and are recovered and regenerated at the end of their service life to achieve a Zero Waste Circular Economy".

This involves, in order of priority, seeking to prevent waste from arising in the first place, encouraging its preparation for re-use, and prioritising separate collection of waste for recycling and composting / digestion. Any residual waste that cannot be dealt with through these means should be treated before disposal so that the environmental impact of final disposal is minimised. This strategy is designed to deliver Environmental, Economic and Social benefits aligning with DCSDC's Three Community Planning Thematic Pillars. Policies 18 & 19 relating to food waste promotes the capture of such waste so that it may be used in local agriculture and for the creation of low carbon energy when treated by anaerobic digestion.

2.48 The One Plan (Ilex, 2012)

The Plan sets out a number of Transformational Theme including Theme 5: Sustainable and Connected City Region – Investing in ourselves and our future; creating a reliable sense of self-worth and pride in all our young people, using resources effectively and wisely, applying social justice, living and thinking locally, paying the appropriate price for the way we want to live, and being better connected not just with the rest of the world but also internally within the city and region.

2.49 The plan sets out a number of transformational approaches including sustainability in Energy and Built Environment and Carbon Neutral Development – an approach to regeneration that ensures that all new builds make use of sustainable materials, are energy efficient and use renewable sources of energy. The plan also promotes renewable and sustainable technologies for farmers and rural businesses.

UK Climate Change Risk Assessment 2017 Evidence Report

2.50 In compiling this report (CCRA2) the UK Government asked the Adaptation Sub-Committee of the Committee on Climate Change to consider the following question:

“Based on the latest understanding of current, and future, climate risks/opportunities, vulnerability and adaptation, what should the priorities be for the next UK National Adaptation Programme and adaptation programmes of the devolved administrations?”

To answer this question, each of the risks and opportunities identified has been assessed in a three-step urgency scoring process:

- What is the current scale of climate-related risk or opportunities, and how much action is already underway?
- What is the potential scale of future risks and opportunities, and to what extent will planned actions or autonomous adaptation address these?
- Would there be benefits from further action being taken in the next five years within each of the four countries of the United Kingdom?

2.51 The available evidence has been supplemented by four research projects commissioned specifically for CCRA2, funded by the Natural Environment Research Council, Defra, and the Environment Agency:

- Future projections of UK flood risk.
- Updated projections of water availability in the UK.
- An aggregate assessment of climate change impacts on the goods and services provided by the UK’s natural assets.
- Developing high-end (High++) climate change scenarios.

- 2.52 The CCRA2 report contains projections (based on the methodology of the Met Office’s UK Climate Projections 09 – UKCP09) which show significantly higher temperatures, levels of rainfall and sea levels for NI and identifies the many implications of the associated increased flood risk, including on the built and natural environments.
- 2.53 The Report was to feed into an updated NI Climate Change Adaptation Programme, which at the time of publishing was expected in 2019 but it is now unclear when such a programme might come forward. Regional policy, such as the SPPS has therefore not been able to be informed by this and it is this which have largely set the direction of the District’s policy on renewable energy development. The Council will closely monitor this and at the review stage of the plan-making process, the District’s LDP policy may be amended, if circumstances have changed.

3.0 Background and Statistical Data for Renewable and Low Carbon Energy Development in the District

- 3.1 Renewable energy comes from energy sources that are continuously replenished by nature. The main sources of renewable energy are wind, the sun (solar energy), moving water (hydropower), heat extracted from the air, ground and water (geothermal energy), and biomass (wood, biodegradable waste and energy crops).
- 3.2 As well as assisting in countering the effects of climate change, increasing uptake of renewable energy will also help to reduce other forms of environmental and social damage arising from the use of fossil fuels. For example, it will help reduce the impact of acid rain on water and forest ecosystems, and reduce localized air pollution and its subsequent health impacts.

Locations of Significant Electricity Generation in Northern Ireland

- 3.3 Northern Ireland has three major fossil-fuel based electricity generating plants:
1. Ballylumford, Islandmagee, Antrim, Closed Cycle Gas Turbine generating 1,300 MW of Electricity is Northern Ireland's largest power station (DfE 2018).
 2. Coolkeeragh power station Derry, Closed Cycle Gas Turbine generating 460 MW of electricity (DfE 2018).
 3. Kilroot power station, Carrickfergus, mainly Antrim Coal/Oil generating 660 MW of electricity.(DfE 2018)
- 3.4 Northern Ireland also has renewable energy sources (capacity of around 700 MW, mostly from wind). Interconnection with the Republic of Ireland and Scotland help to maintain security of supply, with electricity imported via the Moyle Interconnector constituting a significant proportion of total electricity consumption in Northern Ireland in recent years (DETI 2016).
- 3.5 The three main power stations located at Ballylumford (Islandmagee, Antrim), Kilroot (Carrickfergus) and Coolkeeragh (Derry) which supply electricity to a wholesale market known as the Single Electricity Market (SEM). Mutual Energy Limited also supplies electricity to the pool via the Moyle interconnector, the North-South Interconnector between Tandragee and Louth, there are also two 110Kv standby North-South interconnectors: (i) Strabane, Co Tyrone to Letterkenny, Co Donegal; and (ii) Enniskillen, Co Fermanagh to Corraclassy, Co Cavan.

Renewable Energy Consumption in Northern Ireland

3.6 Northern Ireland Statistics and Research Agency (NISRA) published on behalf of the Department for the Economy its bi-annual energy publication for the year ending March 2018. The purpose of the publication was to aid reporting on performance against the 2011-15 Programme for Government targets. Its key points include:

- For the 12 month period April 2018 - March 2019, 38.6% of total electricity consumption in Northern Ireland was generated from renewable sources located within Northern Ireland. An increase of 2.1% from the previous year and is the highest rolling 12 month proportion on record.
- 83.0% of this electricity generated was from wind.

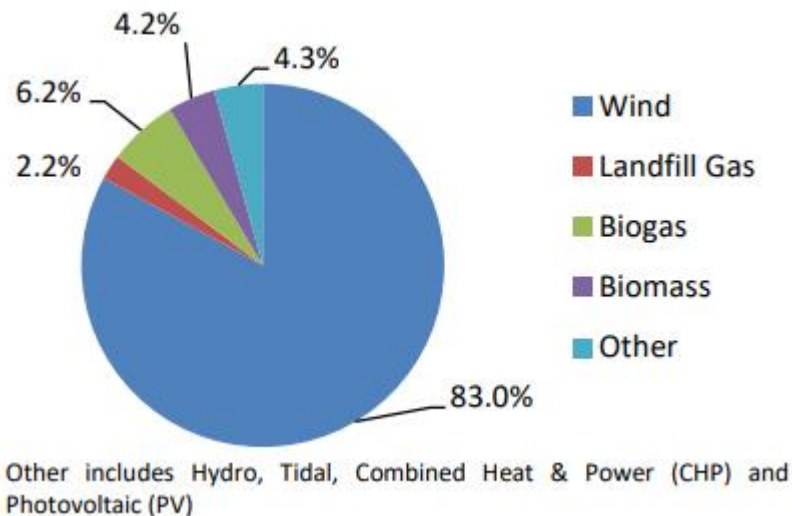


Figure 1: Renewable electricity generation by type of generation (April 2018 to March 2019) (NISRA Electricity Consumption and Renewable Generation in Northern Ireland: Year Ending March 2019.).

Rolling 12 Month Average

3.7 Chart 1 below shows the trend in the percentage of electricity consumption in Northern Ireland from renewable sources. In the 12 month period ending March 2009, some 7.3% of total electricity consumption in Northern Ireland was generated from renewable sources. This proportion has grown considerably with 38.6% of total electricity consumption in Northern Ireland being generated from renewable sources for the 12 month period ending March 2019. This represents a fivefold increase in the rolling 12 month average proportion in comparison to the 12 month period ending March 2009.

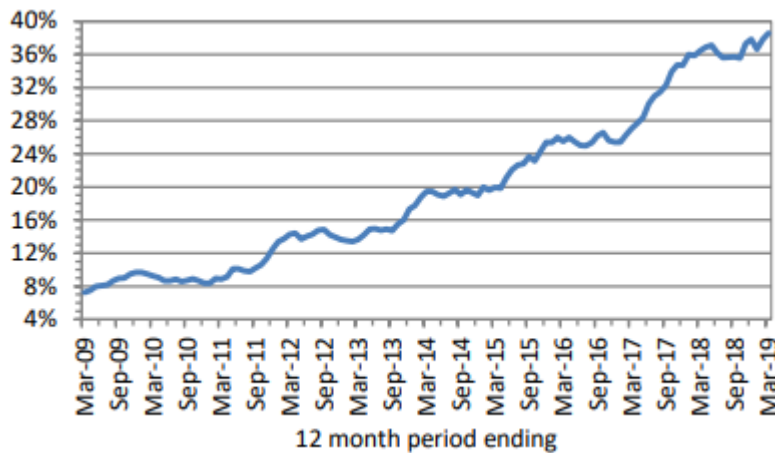


Chart 1: Rolling 12 month Average % Electricity Consumption from Renewable Sources

Monthly Proportion

- 3.8 The proportion of electricity consumption derived from renewable sources varies markedly from month to month, as shown below in chart 2. For example, in March 2019, 46.4% of total electricity consumption in Northern Ireland was generated from renewable sources (Chart 2). This is lower than the corresponding figure for the previous month (51.8% in February 2019, the highest monthly figure on record) but higher than the corresponding figure for the same month one year ago (38.2% in March 2018) and is the third highest monthly proportion on record. The latter months of 2018 showed a trend towards the proportion approaching or exceeding 50%.
- 3.9 Such variation is due to large fluctuations in renewable electricity generation each month, caused mainly by changing weather conditions new renewable generation facilities coming on line at various points. Given the reliance on wind generation in Northern Ireland, weather plays an important role in the volume of renewable electricity generation.
- 3.10 In general, renewable generation volumes are lower in the summer months (when it is less windy) and higher in winter when wind levels are increased. Such changes in renewable generation correlate directly with the large monthly variation in the proportion of electricity consumption from renewable sources, as shown in Chart 2. The rolling 12 month average helps to take account of such monthly variations to provide a better measure of the underlying trend (as shown earlier in Chart 1).

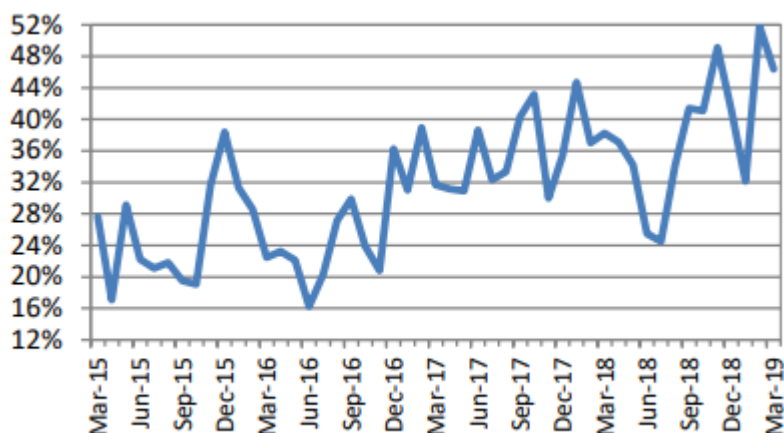


Chart 2: Percentage of Electricity Consumption from Renewable Sources by month (March 2015 – March 2019)(Source: NISRA - Electricity Consumption and Renewable Generation in Northern Ireland: Year Ending March 2019)

2021 Update: By 2020, the 40% target was being met, with approx. 42-47% of NI energy from renewables; see <https://www.economy-ni.gov.uk/sites/default/files/publications/economy/Issue-21-Electricity-Consumption-and-Renewable-Generation-Northern-Ireland-October-2020-to-September-2021.pdf>

The new Northern Ireland Energy Strategy ‘Path to Net Zero Energy’ (December 2021) includes a target to meet 70% of electricity consumption from a diverse mix of renewable sources by 2030. See: <https://www.economy-ni.gov.uk/news/lyons-announces-new-energy-strategy-path-net-zero-energy> & <https://www.economy-ni.gov.uk/publications/energy-strategy-path-net-zero-energy-action-plan>

3.11 Tables 1-3 below shows that renewable generation and capacity is not shared equally among District Council Areas. Indeed over half (54%) of generation is accounted for by only four council areas: Strabane (20%), Fermanagh (12%), Omagh (13%) and Limavady (10%). This is perhaps unsurprising given that the majority of the large onshore wind turbines are located in these council areas. Our District accounts for approx. 27% of renewable energy generation.

Operational	Size (MW)
Bessy Bell 1 (1995)	5
Bin Mountain (2007)	9
Carrickatane (2013)	20.7
Church Hill (2012)	18.4
Clondermot (2015)	2.3
Crighshane (2012)	32.2
Curryfree (2011)	15
Eglish (2017)	15
Monnaboy (2015)	12
Owenreagh 1 + 2 (1997+2008)	10.1
Seegronan (2016)	14.1
Slieve Glass (2018)	6.9
Slieve Kirk (2011)	27.6
Tievenameenta (2016)	34.5
Total	222.8

Table 1 Wind Farm Output (Mega Watt)

Total Operational	Size (MW)
44	9.9

Table 2 Single turbine output (Mega Watt)

The total number of single turbines has the potential to decrease, with an increase in capacity due to repowering. Numbers are not significant in terms of output however the cumulative impact on the landscape is significant especially on the Sperrin foothills.

District Council	Number of sites	Capacity (MW)	Generation (MWh)
Antrim	42	18	27,698
Ards	16	3	3,393
Armagh	31	7	23,904
Ballymena	44	26	58,634
Ballymoney	41	98	135,516
Banbridge	32	6	16,006
Belfast	12	7	12,872
Carrickfergus	5	1	1,849
Castlereagh	8	1	1,583
Coleraine	42	10	30,167
Cookstown	30	6	17,107
Craigavon	14	4	12,254
Derry	32	79	276,980
Down	29	4	8,267
Dungannon	44	52	121,778
Fermanagh	41	130	342,164
Larne	30	4	8,227
Limavady	20	109	249,558
Lisburn	35	16	53,198
Magherafelt	37	8	21,097
Moyle	8	1	1,982
Newry & Mourne	35	7	22,774
Newtownabbey	15	27	71,439
North Down	6	2	6,801
Omagh	53	140	256,758
Strabane	65	225	437,697
Unallocated	23,106	123	104,972
Total	23,873	1,112	2,324,674
Unallocated (%)	97%	11%	5%

Source: BEIS

Table 3 Sub-regional renewable electricity data at end 2016 – ‘old’ 26 district council areas. (Source Department of Energy and Climate Change)

3.12 NISRA published its quarterly statistical bulletin for 2016/2017 (March 2017), the number of renewable energy applications received in Q3 was 21, a fall from 49 for the same period in the previous year, the lowest figure received since 2003/2004. This decline from 2015/16 to 2016/17 may be partly due to the reduction in government funding available, as well as a lack of capacity on the power grid to allow for connections.¹

¹ Northern Ireland Planning statistics 2016/2017 Third Quarterly Statistical Bulletin
<https://www.infrastructure-ni.gov.uk/articles/planning-activity-statistics>

3.13 Single wind turbines dominated renewable energy applications up to 2016/17 but in Q3 of 2016/17 only 5 out of 21 renewable energy applications received were for single turbines, the majority received were for solar panel and biomass/anaerobic digesters.

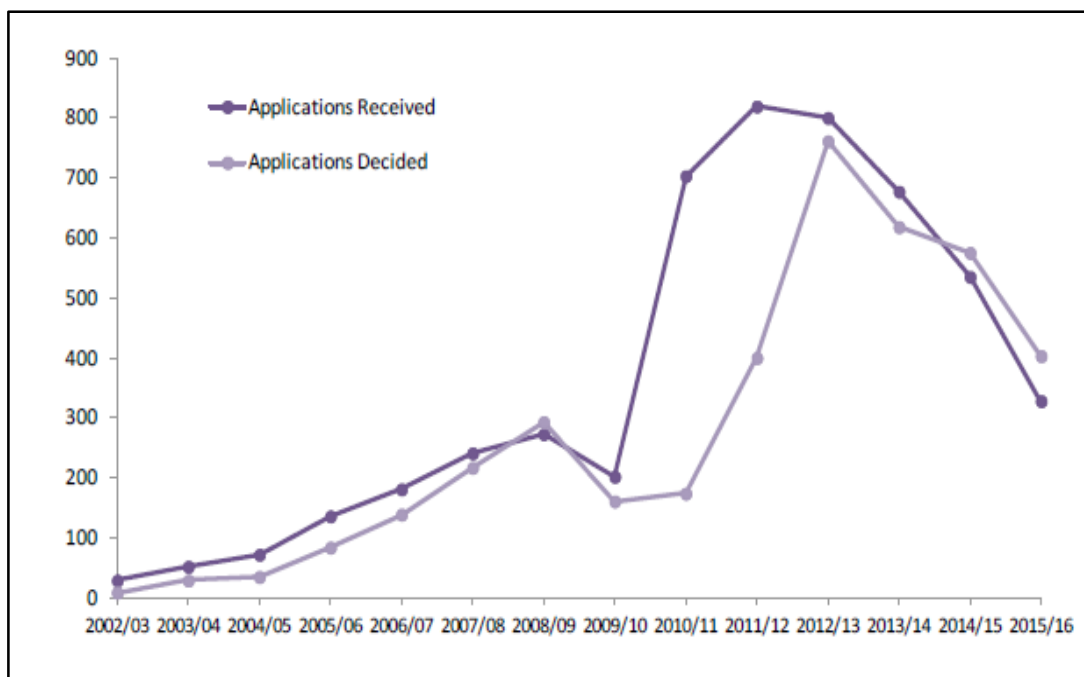


Chart 3 Renewable energy applications annually from 2002/03- 2015/16 (Northern Ireland Planning Statistics 2015/16 Annual Statistical Bulletin April 2015-March 2016) (publication 30th June 2016).

3.14 A consultation paper was issued by the Department of Enterprise Trade and Investment (DETI) on the closure of the Northern Ireland Renewable Obligation to new onshore wind in 2016. The impact of the closure of the Renewables Obligation Certification (ROC) payments has had an impact on the renewable energy sector in Northern Ireland and led to an overall reduction in the number of planning applications for wind energy development.

3.15 It is important to note that renewable projects can also be financed via private finance companies.

Transboundary Data - Electricity Grid Development and Looking Forward

3.16 From SONI’s ‘All- Island Generation Capacity Statement 2018-2027’², continuous work has been ongoing towards the delivery of the second North South interconnector in 2023. Planning permission for this interconnector has been

² http://www.eirgridgroup.com/site-files/library/EirGrid/Generation_Capacity_Statement_2018.pdf

granted in both Ireland and Northern Ireland. SONI are currently supporting the integration of more intermittent generation sources with initiatives that encourage flexibility such as DS3³.

- 3.17 According to SONI, ‘The electricity demand in Northern Ireland has been relatively flat in the last number of years. This is not currently forecasted to rise significantly in the near future, though there have been some enquiries and a connection application related to possible new data centre demand.
- 3.18 There are over 1180 MW of wind currently installed in Northern Ireland, and this is set to grow to almost 1400 MW by 2020. This should be sufficient to meet the RES target of 40% by 2020. Solar Photovoltaic generation has seen rapid growth in Northern Ireland in recent years. A number of large-scale projects commissioned in 2017 bringing the total capacity to around 200 MW. SONI expects the total capacity in this sector to grow to 270 MW.

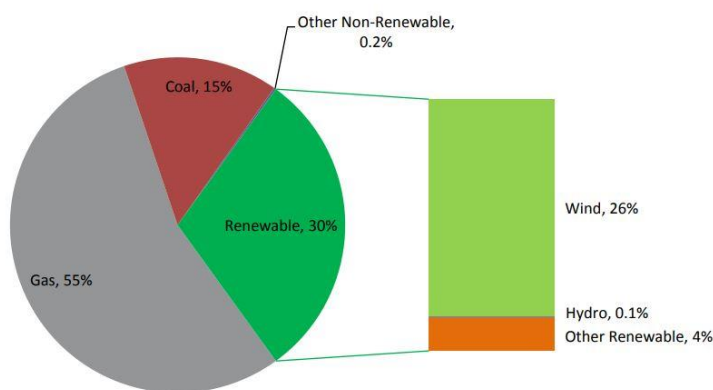


Figure 2 Fuel mix in Northern Ireland in 2017.⁴

Brexit and Uncertainty

- 3.19 Brexit is an uncertainty for the future, but at this point, it is not clear what impact this will have on the Single Electricity Market.

Grid Demand Forecast for Northern Ireland

- 3.20 Based on the ‘All-island Generation Capacity Statement 2018-2027’ which was published by the Eirgrid Group, the Total Energy Requirement (TER) forecast for Northern Ireland is carried out with reference to economic parameters, primarily Gross Value Added (GVA). The consensus amongst economists is that there will

³ <http://www.eirgridgroup.com/how-the-grid-works/ds3-programme/>

⁴ http://www.eirgridgroup.com/site-files/library/EirGrid/Generation_Capacity_Statement_2018.pdf

be growth in the Northern Ireland’s economy, although some uncertainty surrounds the pace of growth.

Demand Scenarios

- 3.21 Given the degree of economic uncertainty into the future, SONI believes it prudent to consider three alternative scenarios for the economy, each of which can then be factored in to derive an estimate of energy production. Combining both temperature and economic scenarios as well as energy efficiency allows for median, high and low demand forecasts to be formulated.
- 3.22 The median demand forecast is based on an average temperature year, including energy efficiency with the central economic factor being applied and this is our best estimate of what might happen in the future.
- 3.33 The low demand forecast is based on a relatively high temperature year, higher energy efficiency with the pessimistic economic factor being applied. Conversely, the high demand forecast is based on a relatively low temperature year, lower energy efficiency with the more optimistic economic factor being applied. SONI have assessed a number of applications for data centres and modified the demand forecast accordingly. The low demand scenario assumes no data centre load. The median demand scenario includes an amount of possible load in the connection offer process, modified by an estimated connection probability, from 2022. In addition to this, the high demand contains an estimated fraction of the potential load that has made a material enquiry.

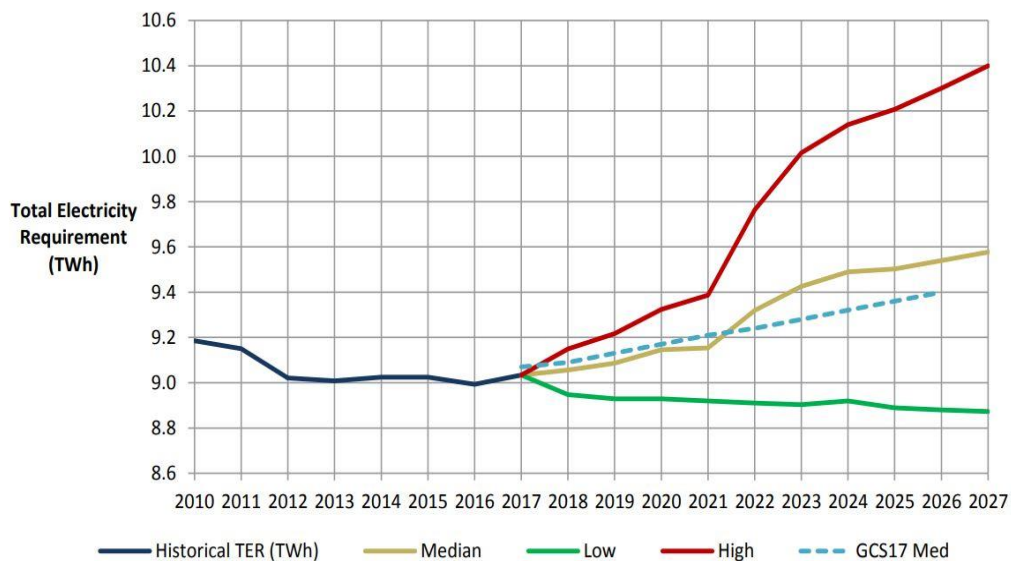


Chart 4 Northern Ireland TER Forecast (SONI)⁵

⁵ http://www.eirgridgroup.com/site-files/library/EirGrid/Generation_Capacity_Statement_2018.pdf

Types of Renewable Energy Development in the District

3.34 Wind Energy

Electricity generated by onshore wind farms is the most established, large scale source of renewable energy in NI. Of all renewable electricity generated within Northern Ireland over the 12 month period January 2014 to December 2014, 92% was generated from wind. Additional figures supplied by Northern Ireland Electricity (NIE) indicate that when all committed renewable energy generating facilities are connected to the grid, 66.6% of renewable energy generation will be provided by wind energy with the remaining 33.4% being supplied by solar energy (20.7%), Hydropower (2.2%) and Anaerobic Digestion/Biogas (10.5%).

- 3.35 The majority of energy derived from wind in Northern Ireland comes from large scale generation as opposed to small scale or micro generation. Large scale generation consists of wind farms whilst small scale or micro-generation consist of a range of renewable technologies including single turbines or even micro turbines.

Wind Energy in the District

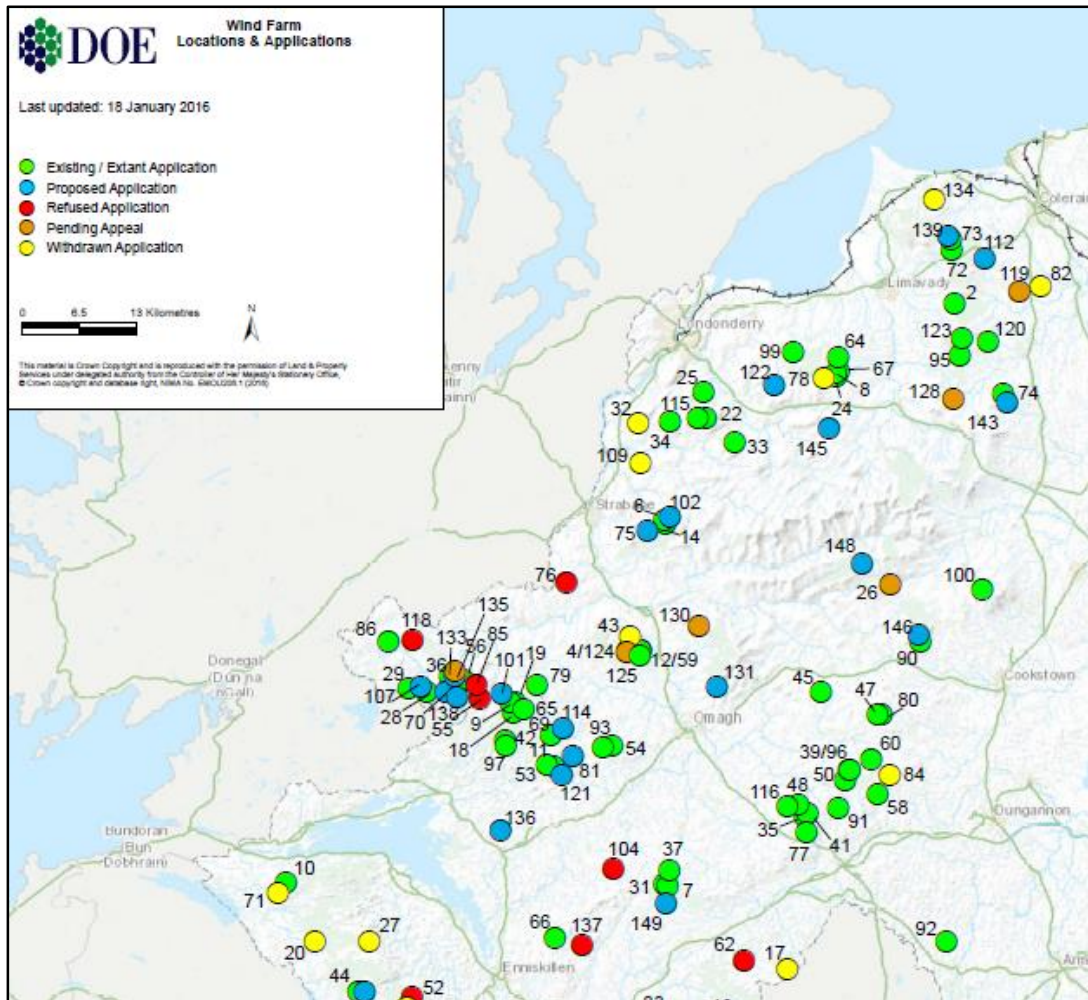
- 3.36 At present, there are 22 wind farms that have received planning permission within the District. At the time of writing, the only current applications relating to wind energy development are for ancillary works such as one for an alternative access to an existing wind farm. The below table compiles the wind farm approvals in the District.

Planning Reference	Name	No. of Turbines	Capacity (MW)
J/1994/0220/F	Bessy Bell	10	5
J/1993/0286/F	Owenreagh	10	5
J/2004/1015/F	Owenreagh II	6	5.1
J/2004/0295/F	Bin Mountain	6	9
J/2005/0133/F	Crighshane	14	28
J/2005/0358/F	ChurchHill	8	16
B/2000/0118/F	Altahullion	20	26
A/2004/1243/F	Curryfree	6	15
A/2004/1130/F	Slievekirk	12	27.6
J/2005/0211/F	Carrickatane	9	27

J/2005/0104/F	Tievenamenta	15	45
J/2006/0883/F	Seegronan	16	14
J/2007/0667/F	Gronan	4	9.2
A/2009/0868/F	Monnaboy	4	10
J/2008/0088/F	Slieveglass	3	6.9
A/2005/0223/F	Eglis	6	15
J/2010/0481/F	Craignagapple	9	20.7
A/2011/0202/F	Slieve Kirk (ext)	5	15
J/2008/0240/F	Meenakeeran	4	12
J/2013/0187/F	Seegronan	3	6.9
A/2014/0401/F	Barr Cregg	7	17.5
A/2014/0630/F	Ballyhanedin	8	24

Table 4 Existing Planning Approval for Wind Farm Development - Local Development Plan Team Derry City and Strabane District Council May 2017.

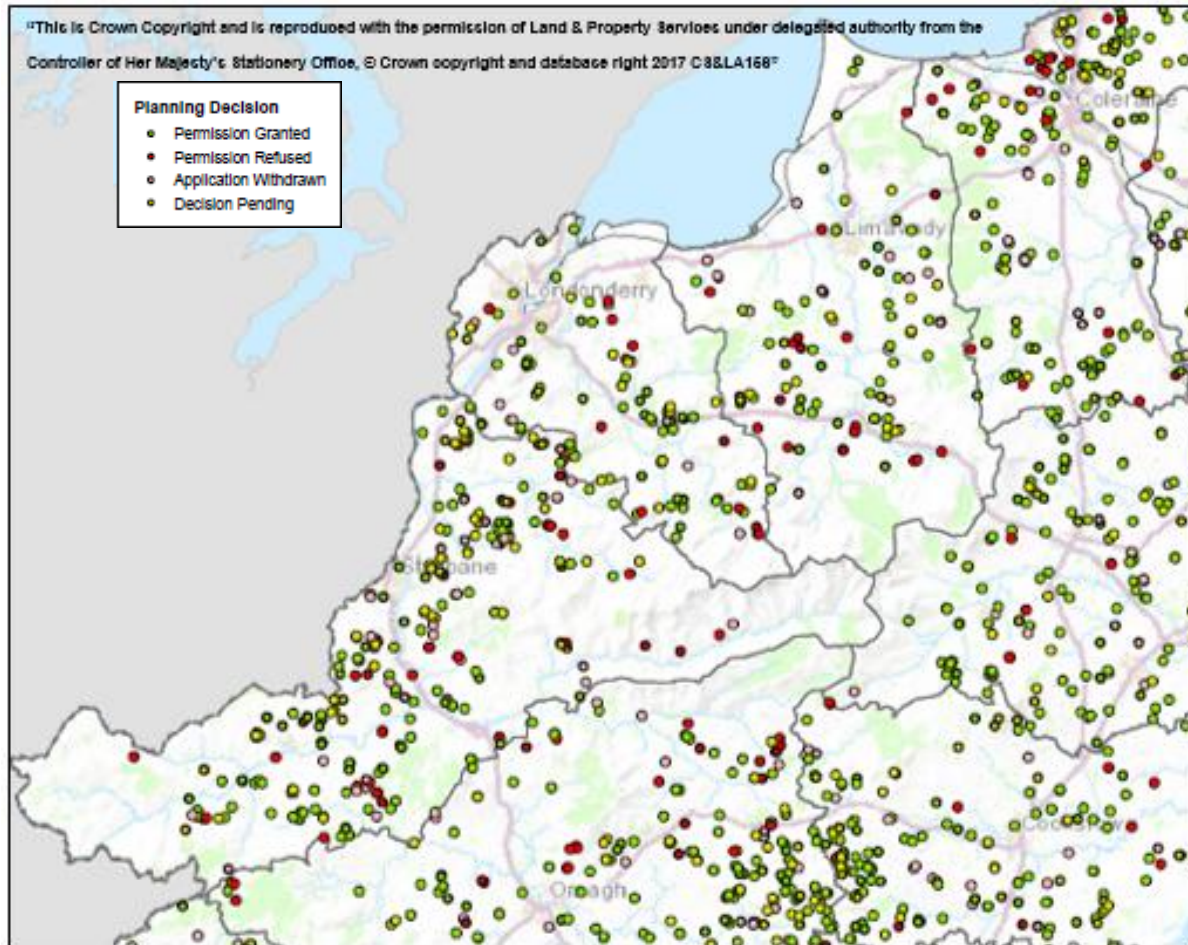
3.37 Map 1 below represents the above information in a spatial context. Coupled with the fact that Northern Ireland is already surpassing the PFG target of 20% and with Strabane generating the highest amount of renewable energy 401.165 (MWh) in Northern Ireland.



Map 1 - Wind Farm Applications (Source DFI 2016).

Applications for Single Wind turbines in the District

- 3.38 In 2014/15 in the Strabane district, 22 applications were received of which 12 were decided with 5 approvals. In the Derry District, 14 applications were received of which 10 were decided with 5 approvals. While in 2013-2014, in the Strabane District, 29 applications were received of which 35 applications were decided with 28 approvals. In the Derry District, 12 applications were received of which 17 applications were decided - with 17 approvals.
- 3.39 Since 2002/2003 in the Strabane District, 280 applications for single wind turbines were received, 182 applications were decided with 145 approvals (80% approval rate). In the Derry District, 102 applications for single wind turbines were received, of which 66 applications were decided with 55 approvals (83% approval rate).



Map 2 Planning Applications for Single Wind Turbines April 2002- 2015 (DFI renewable statistics 2016)

Wind Energy and Landscape

- 3.40 The aim of the LDP's renewable energy policies are to facilitate the siting of renewable energy generating facilities in appropriate locations within the built and natural environment to contribute to Northern Ireland's renewable energy targets and to realise the benefits of renewable energy.
- 3.41 In relation to wind energy development, the siting of such development can often be contentious. Landscape sensitivity to wind energy development is the extent to which the inherent character and visual amenity of a landscape are vulnerable to change due to wind energy development.
- 3.42 Landscape sensitivity to wind energy development depends on many factors. Each landscape has its own sensitivities, depending on its landform and land cover as well as on a range of other characteristics and values including, for example,

enclosure, visibility, condition, scenic and perceptual qualities, natural and cultural heritage features and cultural associations. Importantly, sensitivity depends on landscape character as well as on landscape values.

- 3.43 It should be noted that within many of our LCA's there is considerable variation in sensitivity across the area, reflecting the fact that the LCA's are broad character or identity areas. The overall sensitivity level of a LCA is indicative of the relative overall sensitivity of each LCA. A high sensitivity level does not necessarily mean that there is likely to be no capacity for wind energy development within the LCA and conversely a low sensitivity level does not mean there are no constraints to development.

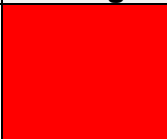


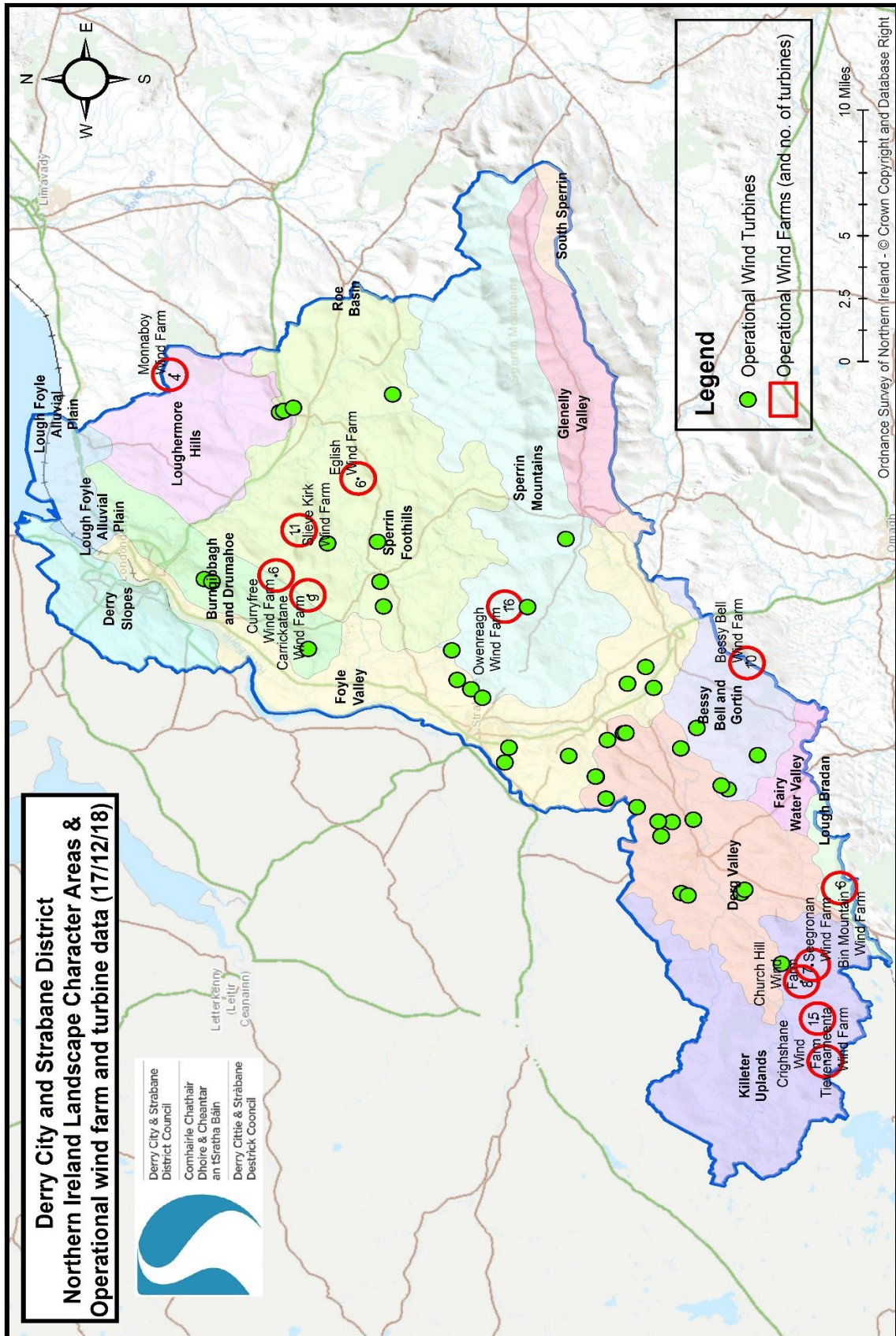
Sensitivity	Colour Coding	Sensitivity Descriptor
High		Landscape is very vulnerable to change and would be adversely affected by wind energy development which would result in a significant change in landscape and visual characteristics and values.
Medium		Landscape may be vulnerable to change and could possibly be adversely affected by wind energy development which could result in a significant change in landscape and visual characteristics and values.
Low		Landscape is not vulnerable to change and would not be adversely affected by wind energy development, and which would not result in significant change in landscape and visual characteristics and values.

Table 5 Landscape Sensitivity Key – LDP Landscape/Seascape Review, 2019.



NI LCA 1999 description	NI RLCA 2015 description	PPS 18 SPG Sensitivity	
14-Lough Braddon 19 – Killeter Uplands 20 – Derg Valley 21-Fairy Water Valley 26-Bessy Bell & Gortin	5-West Tyrone Hills (approx. 70%)	14	
		19	
		20	
		21	
		26	
20- Derg Valley 26- Bessy Bell & Gortin 27 – Foyle Valley 29- Sperrin Mountains 30- Sperrin Foothills 31 – Burngibbagh & Drumahoe 32- Derry Slopes	6-Foyle Valley (100%)	20	
		26	
		27	
		29	
		30	
		31	
		32	
24-South Sperrin 26-Bessy Bell & Gortin 27-Foyle Valley 28-Glenelly Valley 29-Sperrin Mountains 30-Sperrin Foothills	7-Sperrins (approx. 50%)	24	
		26	
		27	
		28	
		29	
		30	
27- Foyle Valley 29- Sperrin Mountains 30-Sperrin Foothills 31- Burngibbagh & Drumahoe 33- Lough Foyle Alluvial Plain 34-Loughermore Hills	8-North Sperrins Hills & Valleys (approx. 60%)	27	
		29	
		30	
		31	
		33	
		34	
31- Burngibbagh & Drumahoe 32-Derry Slopes 33-Lough Foyle Alluvial Plain 34- Loughermore Hills	9-Lough Foyle Coast & Dunes (approx. 25%)	31	
		32	
		33	
		34	

Table 6 LCA / RLCA & Wind Energy Sensitivity – LDP Landscape/Seascape Review, 2019

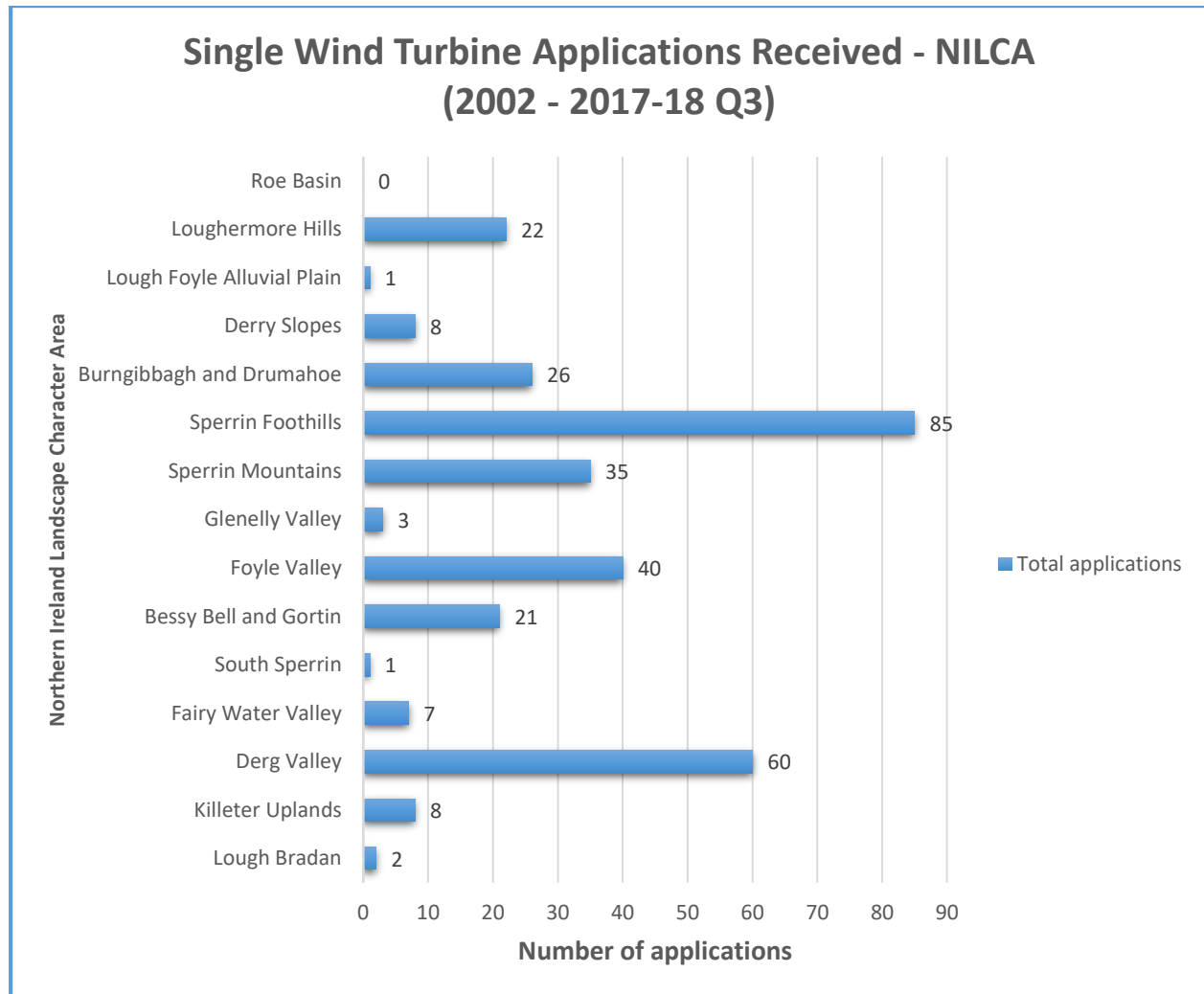


Chart 5

Northern Ireland Landscape Character Area	No. of approvals	No. of refusals
Lough Bradan	1	1
Killeter Uplands	5	3
Derg Valley	44	16
Fairy Water Valley	7	0
South Sperrin	1	0
Bessy Bell and Gortin	16	5
Foyle Valley	32	8
Glenelly Valley	0	3
Sperrin Mountains	21	14
Sperrin Foothills	58	27
Burngibbagh and Drumahoe	20	6
Derry Slopes	5	3
Lough Foyle Alluvial Plain	1	0
Loughermore Hills	16	6
Roe Basin	0	0
Total number of applications:	227	92

Table 7 Single Wind Turbine applications received per NILCA (2002 - 2017-18 Q3)

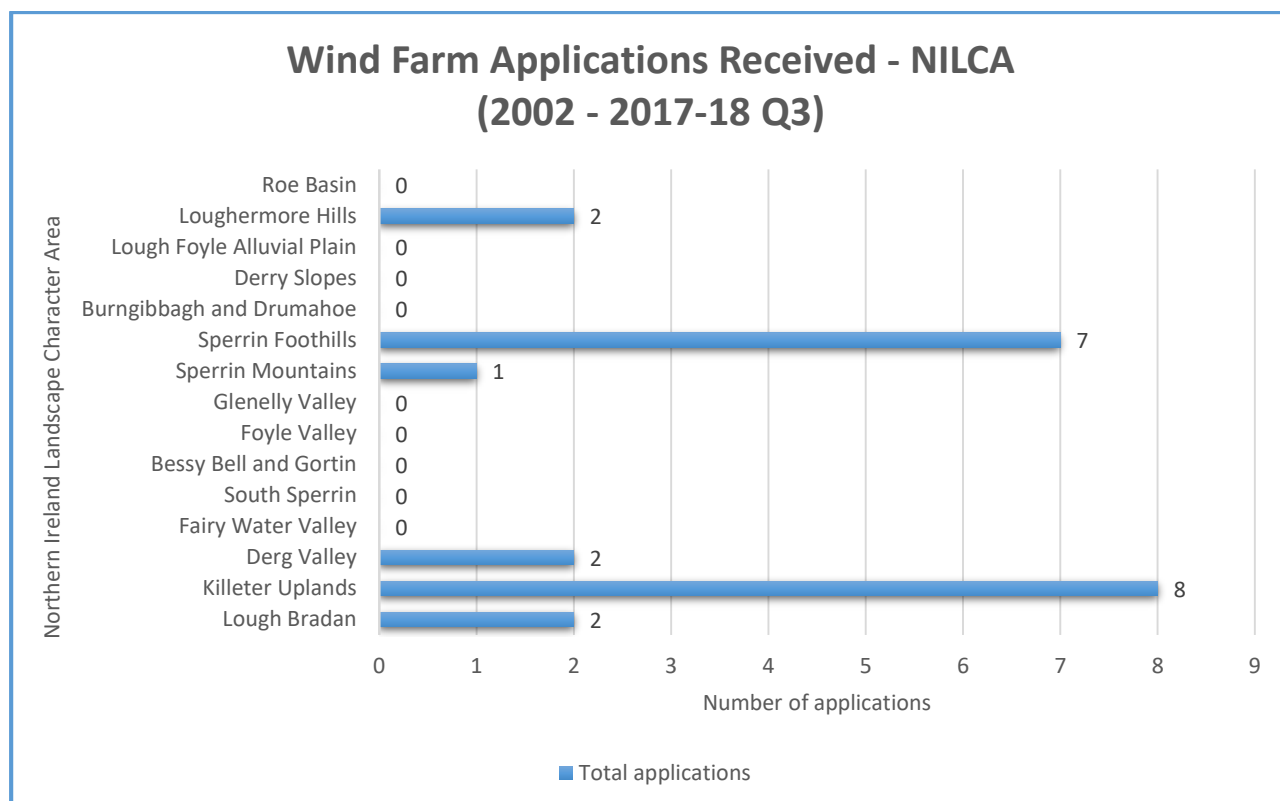


Chart 6

Northern Ireland Landscape Character Area	No. of approvals 2002 - 2017-18 Q3	No. of refusals 2002 - 2017-18 Q3
Lough Bradan	1	1
Killeter Uplands	6	2
Derg Valley	1	1
Fairy Water Valley	0	0
South Sperrin	0	0
Bessy Bell and Gortin	0	0
Foyle Valley	0	0
Glenelly Valley	0	0
Sperrin Mountains	1	0
Sperrin Foothills	7	0
Burngibbagh and Drumahoe	0	0
Derry Slopes	0	0
Lough Foyle Alluvial Plain	0	0
Loughermore Hills	1	1
Roe Basin	0	0
Total number of applications:	17	5

Table 8 Wind Farm applications received - NILCA (2002 - 2017-18 Q3)

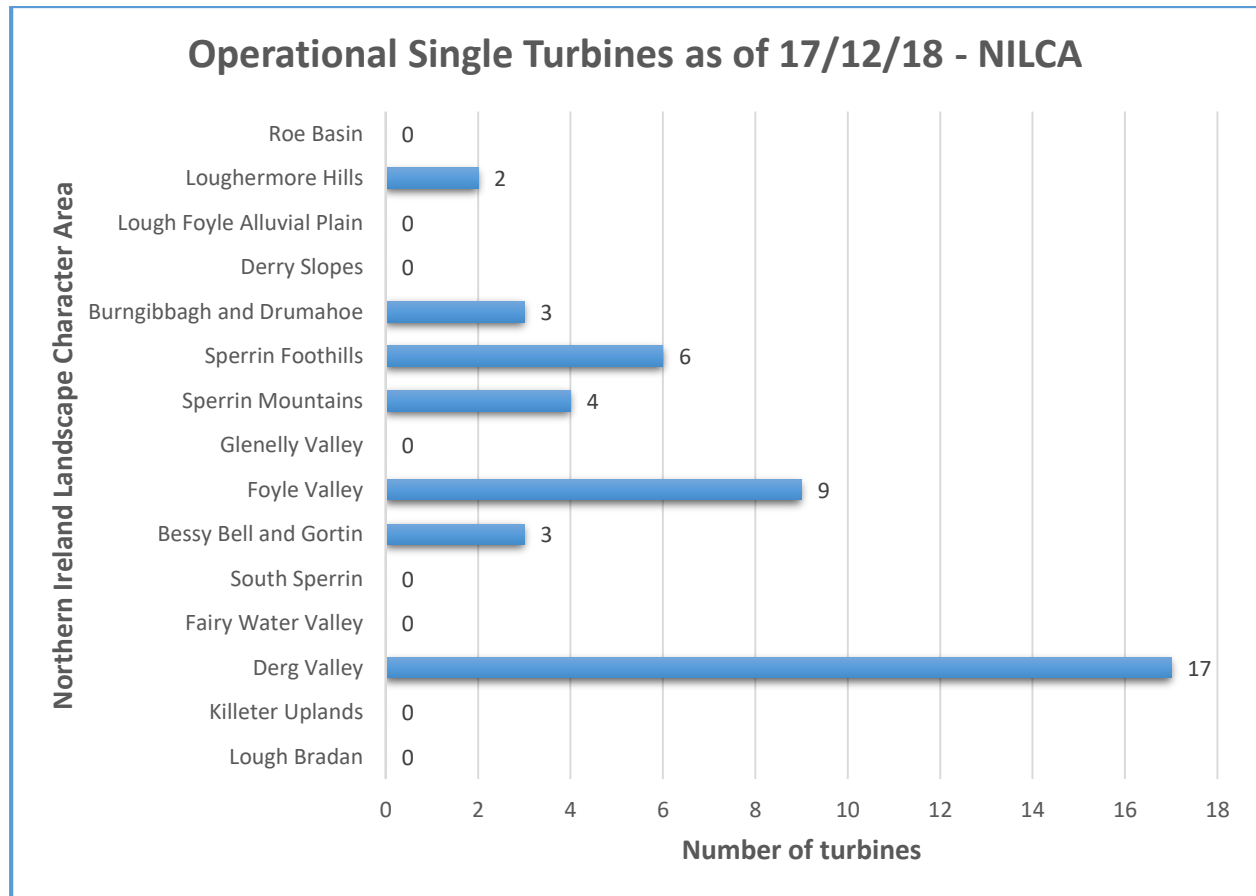


Chart 7

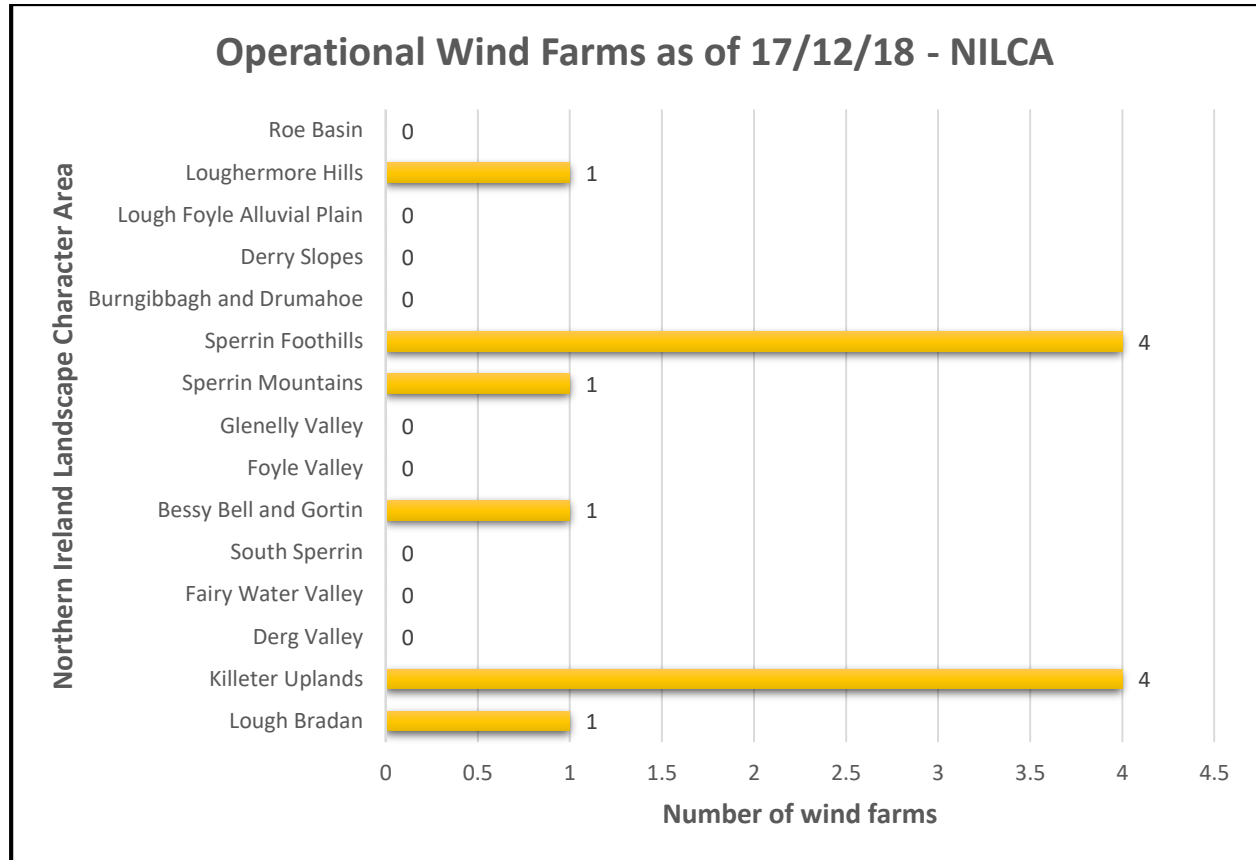
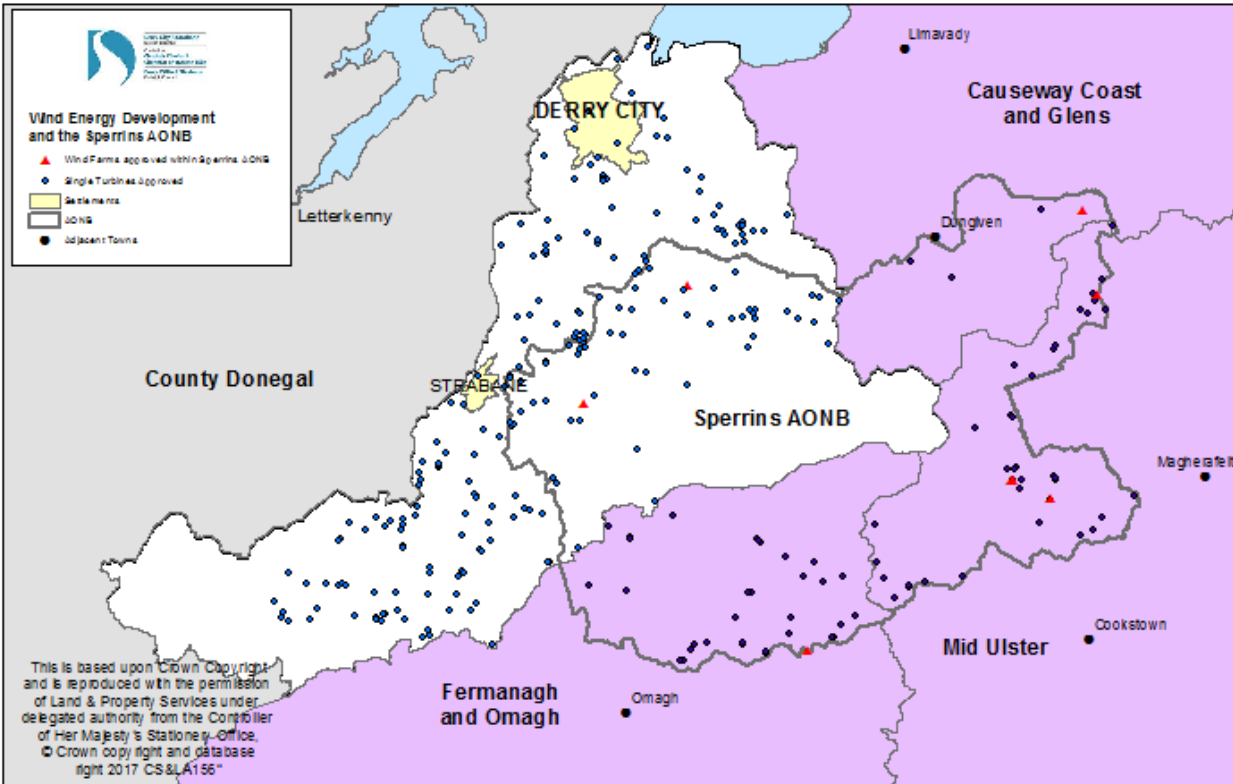


Chart 8

Wind Energy Development in the Area of Outstanding Natural Beauty



Map 4 Planning applications approved for single turbines and wind farms in the District and the Sperrins AONB - DFI, 2016

- 3.44 A significant part of The Sperrins AONB is located within our District. This is a landscape of national importance and has merited the designation Area of Outstanding Natural Beauty (AONB). The purpose of the designation is to protect and conserve the scenic qualities of the area and promote their enjoyment. The AONB has come under increasing pressure from wind energy development as the above map illustrates.
- 3.45 In the period from 2002-2015, 136 applications for wind energy (single turbines and wind farms) were approved within the Sperrins AONB. 50 of these approvals are within Derry City and Strabane LGD, 5 are within Causeway Coast and Glens LGD, 45 are within Mid Ulster LGD and 36 are within Fermanagh and Omagh LGD. Over the same period 25 applications for wind energy development were refused giving a refusal rate of 29% within the Sperrins AONB. According to DFI statisticians, the refusal rates for wind energy applications in the AONB have generally been higher

than refusal rates for all wind energy applications, indicating the Department was taking these special areas into consideration in decision making.⁶

- 3.46 The Councils LDP team carried out a Development Pressure Analysis to assist in identifying areas in the District which are under particular pressure from residential and wind development (Development Pressure Analysis February 2017). It identified a higher concentration of wind turbines located centrally within the District in the Sperrin Foothills LCA. This corresponds with Map 4 which illustrates a small cluster of single turbines on the boundary of the Sperrins AONB designation and a disperse pattern of wind turbines across the northern foothills of the Sperrins within the AONB.
- 3.47 This form of development has encroached into the AONB within our District, in areas where this is happening further assessment is required to ascertain the level of damage this may have had on the visual impact of this designated landscape and to inform policy direction for the LDP.

Biomass

- 3.49 Biomass fuels, including wood and energy crops, can be utilised to provide energy either by combustion or fermentation/digestion technologies. There are currently three main categories of biomass plant:
- Plant designed primarily for the production of electricity
 - Combined heat and power plant (CHP)
 - Plant designed for the production of heat.
- 3.50 Emissions and waste products from biomass energy production include airborne emissions, emissions to watercourses and ash.
- 3.51 Anaerobic digestion (AD) is a process which bacteria break down organic material in the absence of oxygen to produce a methane rich biogas. This can be combusted to generate electricity. Thermal processes can also be used to extract energy from waste. These processes use a high temperature to release the chemical energy in the fuel. Planning issues from these renewable energy developments that require consideration include:
- Visual intrusion – the plant is an industrial feature with a chimney;
 - Noise from plant and traffic operations;
 - Any effects on health, local ecology or conservation from the plant and air/water borne emissions;

⁶ The Wind Power Debate DOE Analytical Services Branch.

- Traffic to and from the site in order to transport biomass fuel and subsequent by-products; and
- Odour.

Biomass Energy in the District

3.52 154 applications for biomass/AD have been approved in NI from 2002/03 to 2015.

Notable approvals in our District include:

- A/2007/1115/F- In January 2011 permission was granted for a proposed in-vessel compost facility to process kitchen & organic waste & a bio drying plant for municipal and biodegradable waste at Maydown Road and Electra Road, Derry.
- A/2009/0211/F permission was granted in September 2011 for a gasification facility for the treatment of refuse derived fuel (RDF) produced within the established Enviropac, Electra Road Derry.
- A/2010/0030/F- the granting of planning permission in July 2010 for a 15MW dedicated biomass (virgin wood fuelled) combined heat and power plant in Lisahally.
- A/2011/0416/F- Permission was granted in August 2012 for a proposed anaerobic digestion plant and silos to receive animal slurry and energy crops to generate electricity and heat with biogas fuelled combined heat and power generator (CHP Unit), Carnmoney Road Eglinton.

Renewable Application	Approvals	Refusals	Under Consideration	Withdrawn
Anaerobic Digesters	21	0	0	0

Table 9 Sourced Environmental Health Service DCSDC Applications 2009-2018

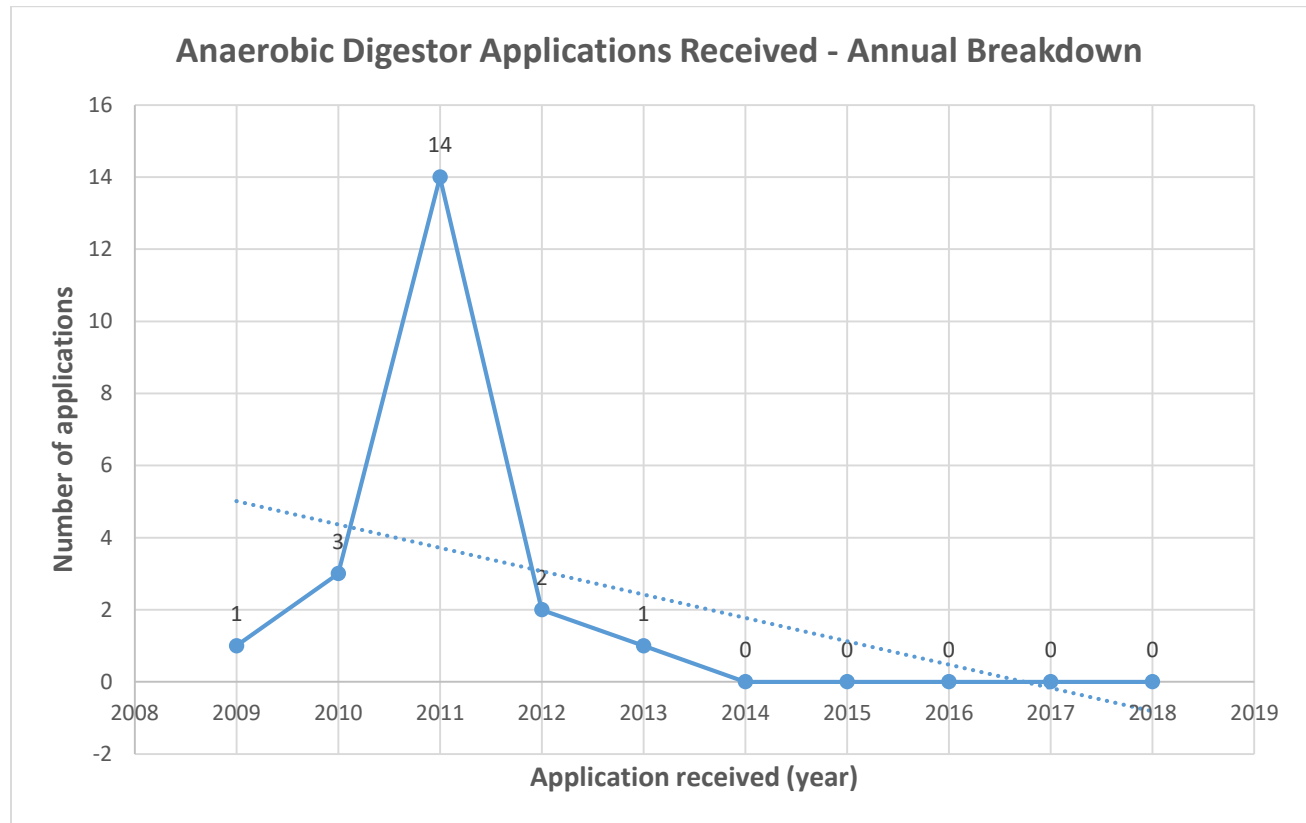


Chart 9

3.53 A notable development within the District is the Tyrone Energy Biomass Power Station in Artigarvan near Strabane, County Tyrone. The station is Northern Ireland’s first large scale ‘wood to energy’ plant, it began full commercial operations in 2012 and will use 25,000 tonnes of wood per year as its biomass fuel. Taking wood from a variety of sustainable sources in the UK, the plant is capable of generating around 2.1 MW of electricity.

Heat

3.54 Ground source heat pumps operate by circulating water (or another fluid) through pipes buried in the ground. The water temperature in the pipes is lower than the surrounding ground and so it warms it up slightly. This low-grade heat is transferred to a heat pump, which raises the temperature to around 50°C. Water source heat pumps operate in a similar way, with the pipes being submerged in water. Air source heat pumps extract heat in the air and use a fan to draw air over coils that extract energy. Air-source heat pumps can be located in the roof space or on the side of a building. They are similar in appearance to air conditioning boxes. To date, existing operational policy has not raised any significant issues with these types of renewable energy developments subject to careful planning consideration including archaeological implications.

Solar

- 3.55 Active solar photovoltaic (PV) technologies generates electricity from daylight. The most common form of device is a solar panel or module typically 0.5 to 1sqm in size, dark in colour and having low reflective properties. Although roof mounted is most common, modules can be mounted on sides of buildings, or on freestanding support structures on the ground. A number of modules are usually connected together in an array to produce the required output, which can vary from a few square metres to several hundred square metres. There is also an innovative approach of ‘co-location’ whereby solar farms and wind farm co-exists. This is regarded to be a more sustainable form of development, whereby the solar farm utilises the infrastructure established to facilitate the wind fame i.e. grid connection and road access.

Planning Consideration for small scale Heat and Solar PV

- 3.56 Small scale PV and ground and air heat pumps are is particularly well suited to small scale domestic installation as they are clean and silent operators.
- 3.57 In most cases involving dwelling houses, provided the building is not listed or in a conservation area and the installation complies with the relevant constraints, various micro generation technologies will be “permitted development” and a planning application will not be required. The permitted development rights for small-scale renewable energy development are set out in Schedule 1 Part 2 Classes A to G of The Planning (General Permitted Development) Order (Northern Ireland) 2015 for the Installation of Domestic Micro Generation Equipment. However, Permitted Development rights to clad the walls or alter the existing roofline of a dwelling do not necessarily apply in Areas of Outstanding Natural Beauty, Conservation Areas or Areas of Special Scientific Interest. When considering applications in these areas the potential impact on the character or appearance of the area should be considered.

Solar PV in our District

- 3.58 Planning application A/2014/0594/F- granted permission for the installation of photovoltaic panels on 13 ground mounted solar arrays to provide 50KW of green energy as farm diversification on Brockagh Road, Eglinton.
- 3.59 Planning application LA11/2016/0048/F is currently under consideration for a ground mounted solar farm and associated infrastructure at Monnaboy Road, Derry. This is a 15.9ha site, with a twenty-four solar panels proposed to be located around the existing turbines, to generate 4.9 megawatts of power.

Renewable Application	Approvals	Refusals	Under Consideration	Withdrawn
Solar PV	20	0	0	1

Table 10 Sourced Environmental Health Service DCSDC Applications 2009-2018

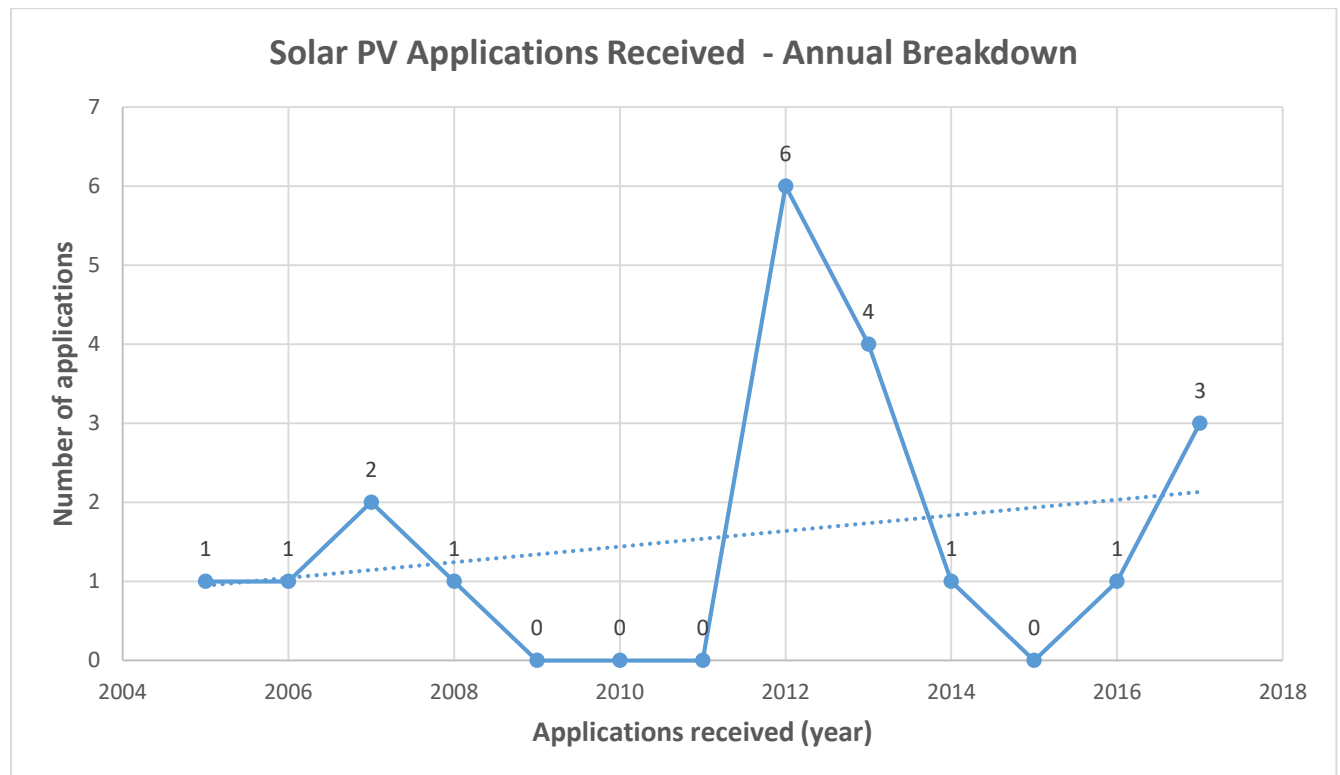


Chart 10

3.60 Small Hydropower

Small hydro schemes generate power up to 1MW. There is the potential for sites in Northern Ireland in the range of 100KW to 500KW and the possibility for a few sites up to 1MW, which could economically be connected to the grid.

3.61 Harnessing water power involves water flowing from a higher to a lower level which is use to drive a turbine which produces mechanical energy. The energy produced in directly proportional to the volume of water and the vertical distance it falls.

3.62 The majority of schemes are likely to be ‘run of river’, where water is taken from a river from behind a low weir, with no facility for water storage, and returned to the same watercourse after passing through the turbine,

3.63 Planning Considerations with Hydro power

The development of hydroelectric power generation schemes should be achieved in a manner which is compatible with many other uses to which a river is put.

3.64 The effect of water abstraction on the riverine ecology can be a concern, particularly in areas that are valued or designated for their ecological resource.

Important factors to consider with hydropower development include:

- Siting and Landscape- integrating schemes into the landscape as far as possible.
- Design Considerations- their waterside location will, in many cases, place them in areas valued for their visual and natural amenity. Design schemes should be harmony with their surroundings, perhaps incorporating vernacular building materials and styles will be encouraged.
- Hydrological Considerations- during operation of a small hydro scheme, water is abstracted over a short stretch of the river. The scheme does not pollute or consume water and usually returns the supply to the channel from which it was abstracted. Water that has passed through a turbine is often improved by aeration and is free of debris. NIEA will be consulted regarding the water extraction regime.
- Ecological Considerations- the effect of water abstraction on the riverine ecology can be a concern, particularly in areas that are valued or designated for their ecological resource.
- Fisheries Interests- fish can be killed or injured by Hydropower schemes. This risk can be minimised by careful design and adjustment of the seasonal operating schedule of the plant. Some types of turbine oxygenate the water and may thereby benefit the fish population.
- Noise- the noise emitted from a turbine should be well contained within the turbine house and should not be heard from more than a few meters away.
- Construction Disturbance-in general construction impact will be no different to that of other developments. However during construction there is the potential for the water to become clouded with silt or mud.
- Operational Disturbance- once in operation, small hydro schemes require little maintenance.
- Recreation and Public Access- small hydropower scheme will have a negligible impact on public access, though fisheries interests or other users of the river might be affected.

3.65 Hydro Power in our District

A hydroelectric power generator (790KW) is located at Sion Mills in the former Herdman's' Mill complex. It is driven by a millrace off the River Mourne and its generator supplies electricity to the national grid.

Renewable Application	Approvals	Refusals	Under Consideration	Withdrawn
Hydroelectric	12	0	0	0

Table 11 Sourced Environmental Health Service DCSDC Applications 1999-2016.

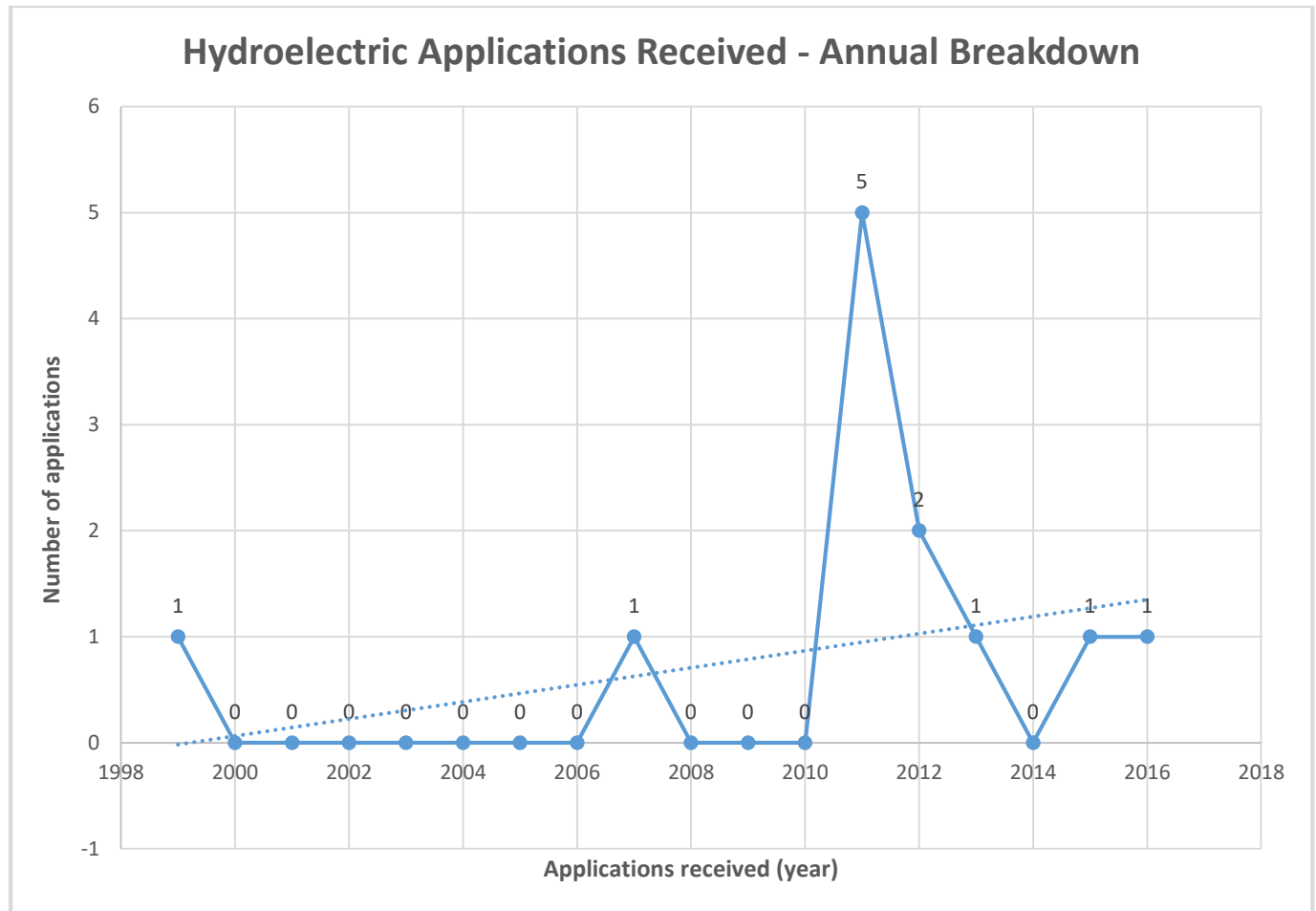


Chart 11

3.66 Northern Ireland Housing Executive Incentives for Micro Generation

The Northern Housing Executive is designated as Northern Ireland's only Housing Conservation Authority (HECA). In its 2015 Progress Report, the Housing Executive has secured funding from both the EU and local NI partners to deliver renewable projects for installing a range of renewable energy sources across their housing stock. The Housing Executive has successfully obtained funding to install;

- solar water heating panels in 2,032 homes;
- solar photovoltaic (PV) panels in 32 homes;
- solar air heating and ventilation systems in 55 homes;
- biomass wood pellet boilers in 53 homes;
- ground source heat pump in 1 home;
- micro wind turbine in 1 home;
- a field trial of micro-CHP systems in 10 homes: and
- a field trial using bio-fuel which is a mix of kerosene oil and vegetable oil but produces 21% less carbon emissions than kerosene.

3.67 **Solar Photovoltaic Project**

In July 2015, the Housing Executive appointed Saliis Ltd to privately finance the installation of solar photovoltaic (PV) panels in 1,000 of its homes based on the “rent a roof” model. ‘Rent a roof’ schemes involve the private company paying an annual rental to the landlord in exchange for being permitted to install PV panels on the roof of Housing Executive dwellings.

4.0 Preferred Options Paper Stage

4.1 The research findings contained in an earlier EVB paper together with Members’ views and advice from the relevant parties/consultees informed the following options which were taken forward and subjected to Sustainability Appraisal (incorporating Strategic Environmental Assessment) as part of the Preferred Options Paper (POP) process.

	Option 1	Option 2
F - Renewables – Wind & Solar	Maximise the wind and solar resource of the District	Identify the most sensitive landscape zones remaining – for protection, permitting appropriate wind & solar development elsewhere in line with SPPS

4.2 Following publication of the POP, twenty-four representations (responses) were received relating to the proposed options for the renewable energy policy. The representations centred on such considerations as the need to accord with regional policy, impact on landscape including within designations such as AONBs, contribution to tackling climate change, associated economic benefits, cumulative impact of wind turbines, and concern that the options were limited to wind and solar based renewable energy. In respect of this last point, in developing the preferred options for proposed policy wind and solar power were considered the key forms of renewable energy production at that time. This was based on both statistical trends and the fact that the emergence/uptake of other forms of renewable energy production were at a relatively early stage within the NI region. The inclusion of other forms of renewable production was considered post-POP and the detail of this can be found within the Draft Plan Strategy Stage section of this paper.

4.3 In terms of according with regional policy, it was considered that both proposed options do so. While the Council is broadly content with the regional policy contained within the SPPS, it was felt that there was a need and scope for the LDP to set additional local policy in terms of landscape protection, particularly with regard to cumulative development and community benefit in relation to wind energy proposals, whilst simultaneously recognising there are other forms of renewable energy development that can be catered for within valued landscapes.

4.4 The remaining points of the POP representations were deemed to warrant further consideration in order to achieve a balanced approach between the potentially conflicting interests of economic benefits, climate change related benefits, nature conservation impacts and visual/landscape character impacts. This being the case the preferred option remained unchanged at this stage. The subsequent consideration of the above points is detailed under the Draft Plan Strategy Stage section of this paper.

5.0 Key Considerations

What should the LDP deliver?

- 5.1 Northern Ireland had met its PFG target of 20% renewable energy consumption by 2015. However, we must still strive to meet the target of 40% set out by the Strategic Energy Framework by 2020 and we are coming ever closer to doing so with the latest figure at 38.2% average, according to figures published in March 2019 by DfE.

2021 Update: By 2020, the 40% target was being met, with approx. 42-47% of NI energy from renewables; see <https://www.economy-ni.gov.uk/sites/default/files/publications/economy/Issue-21-Electricity-Consumption-and-Renewable-Generation-Northern-Ireland-October-2020-to-September-2021.pdf>

The new Northern Ireland Energy Strategy ‘Path to Net Zero Energy’ (December 2021) includes a target to meet 70% of electricity consumption from a diverse mix of renewable sources by 2030. See: <https://www.economy-ni.gov.uk/news/lyons-announces-new-energy-strategy-path-net-zero-energy> & <https://www.economy-ni.gov.uk/publications/energy-strategy-path-net-zero-energy-action-plan>

- 5.2 Wind energy provides the greatest contribution toward renewable energy consumption, equally, it also has the greatest visual impact on sensitive landscapes due to the tall structures required to harness it. Renewable energy development in the District somewhat exemplifies this. Renewable energy developers have to date taken great advantage of the District’s potential, in particular through the granting and implementation of planning permission for single wind turbines and wind farms. As of March 2017, the Derry City and Strabane District is the single largest producing council of renewable energy, generating approximately 27% across NI and having some 44 operational single wind turbines, 12 wind farms.
- 5.3 The Northern Ireland Renewables Obligation (NIRO) scheme closed to new large scale onshore wind on 31 March 2016 and to new small scale onshore wind on 30 June 2016. As a consequence of the closure, wind farm and single turbine planning applications have significantly declined in numbers.
- 5.4 The Council must consider the strategy it wants to take regarding promoting wind energy development or allowing it to decline, with a new focus on other sources of renewable energy generation which are potentially less intrusive in sensitive landscapes. Council should consider the following options for the LDP:
1. Adopt policies which are in keeping with the current planning policy contained within the SPPS and PPS18 and its guidance documents.
 2. Adopt policies, which are more restrictive within sensitive landscapes such as CPA’s and AONB’s.

3. Adopt policies which require mitigation of the damage caused to the landscape by the infrastructure to build and maintain the wind farm/turbines e.g. roads, removal of hedgerows, accompanying electricity lines, poles etc.
4. Adopt policies to restrict on-shore wind development.
5. Adopt proactive policies taking account of future technology development e.g. solar farms, hydro or biomass and their related infrastructure.

6.0 Draft Plan Strategy Stage

6.1 Following the Preferred Options Paper (POP), letters were sent to relevant consultees in March 2018 asking for their views relating to renewable and low carbon energy. The feedback from each respondent is summarised below:

Environmental Health Dept. – It will be useful if the LDP clarifies and strengthens a few problematic aspects of the current policies. Specific points include:

- single turbines also need a separation distance of 10-times rotor, but also need a noise assessment report, if there is any doubt
- anaerobic digesters and biomass plants usually also require other licences and pollution-control permits, so this should be considered
- better monitoring, statistics and mapping is required of all existing and approved renewable energy developments.

Climate Officer DCSDC – Energy Efficiency measures are cheaper to implement than Renewable energy technologies. Major developments should include an energy strategy and the Energy Team should be consulted on major developments.

Loughs Agency – supportive of identifying and protecting most sensitive landscapes while permitting renewables. Supports planning for sustainable development and importance of climate-change agenda. Small scale hydro schemes have potential to impact on natural heritage features, such as fisheries and aquatic habitats, if allowed in sensitive watercourses or if not considered cumulatively.

DAERA – Natural Environment Division (NED):

– the study on Landscape Character Assessments should provide an evidence base to consider the “sensitivity” both in landscape and visual terms, the “cumulative impacts” of development and the “capacity” of the landscape to accommodate further renewable energy development;

- consider policy text to be sufficient; they are content with the weighting within the SPSS as a ‘substantial’ weighting could result in perverse decisions, where larger proposals that have larger significant impacts get approval due to their greater generating capacity;

- consider it is very important to retain the strong policy protection for active peatlands in relation to renewables. This aspect of policy is required to comply with climate change commitments and the RDS commitment to ‘protect and extend the ecosystems and habitats that can reduce or buffer the effects of climate change’. Active peatland is an important carbon store and active sink;
- consider of the cumulative impacts of wind energy in the AONB to ensure that clarity is provided and that there is adequate policy protection in our most sensitive landscapes;
- in reference to preference for renewables at existing renewable sites - this would have policy implications for natural heritage as many existing upland wind farm sites are located in sensitive habitats, avoiding the most vulnerable locations and they also include compensatory habitat management areas. There may therefore be significant natural heritage concerns with this approach if preference was given to locate additional development in these, more sensitive areas;
- technology for battery storage has been growing worldwide and if it significantly increases, it could have landscape implications. This should be considered when developing policies in relation to renewables.

Department for Communities – Historic Environment Division (HED) –

‘heritage asset’ or ‘historic environment’ should be used in place of ‘built heritage’;

- HED welcome opportunity for protection of sensitive landscape zones. Concerns regarding turbines and wind/solar farms affecting the setting of heritage assets and the wider historic environment. Recognise the setting of heritage assets can be affected by visual impact, but also physical and functional impacts;
- highlight importance of having a working partnership with neighbouring Council’s and the need for a heritage-led approach to ensure continuity between Districts so that the historic integrity of strategic heritage assets are not negatively impacted by development proposals in neighbouring Districts, e.g. some renewable energy systems have visual impacts from great distance.

Transport NI – satisfied with recommendations of POP and comments on EVB.

Utility Regulator – welcome Council contribution in moving toward sustainable energy future to meet NI Renewable Energy targets.

- 6.2 In addition to the formal consultation exercise, a series of ‘round table discussion’ (RTD) meetings were held in 2018. Individual Members of the Committee raised a

number of key issues at the RTD meeting for renewable energy in April 2018, which included the following issues:

Wind

- 6.3 Members stated that the District is more than delivering its share of the Region's target of 40% of electricity consumption from renewable sources by 2020 whereas other Council Districts are not doing so. While there is some rates income generated, only approximately 50 % of this goes to the Council with the other 50% going to central government. Furthermore, the ROCS payments need to be factored in.
- 6.4 It was also viewed that the District had reached saturation point for wind energy. A 2008 report by Landscape Architects Branch was cited which stated that West Tyrone was at capacity for wind farms/turbines and yet there have been many wind turbines approved and constructed in the last 10 years. It was proposed that consideration be given to a constraining designation whereby no further wind turbines or wind farms could be constructed within designated areas. These areas should include all of the Sperrins AONB and also areas outside of the AONB, particularly in the west of the District where there are already many turbines. The example was given of wind turbines stretching from 'Biddys' in Donegal to Fintona passing along Scraghey Mountain.
- 6.5 Council officers suggested using contours to determine the siting of wind turbines, looking at areas of human activity and contour level. However, Members raised concerns about this approach giving the example of the unique shape of the Glenelly Valley as well as stating they wouldn't want policy to be definitive in one area and lax in another nearby. There was also the negative effect that wind turbines have on tourist assets and tourism to be considered.
- 6.6 The potential impacts on bogland and peatland of ancillary development to facilitate to wind turbines, for example access roads, was also raised.
- 6.7 Members discussed the impact of wind farms when compared to the cumulative impact of single wind turbines. Some members stated that single turbines could have a greater impact on the landscape than a wind farm which is managed and planned. Others said that there couldn't be a policy of 'no single wind turbines' in an area and argued that single wind turbines with a strong business case may be acceptable. However, there were concerns that initial wind turbine applications for domestic purposes or small business purposes are later upgraded to become industrial size wind turbines and that a policy allowing single turbines would be used to create wind farm areas turbine by turbine. It was proposed that the

Council request information from DfI, showing the figures for wind turbines and wind farms in the District.

Solar

- 6.8 Members used the example of the solar farm along the M2 highlighting that this solar farm comprising metal fencing and concrete was unattractive. The distinction between that site which is relatively flat and the topography of the Sperrins would result in any solar farm there being more obvious and visually unacceptable. Members expressed the view that they are in favour of a policy constraining solar farms, particularly in sensitive locations.

Hydro

- 6.9 Members raised concerns about the effect that hydro renewables have on flora and fauna including fish and kingfishers. It was highlighted that the importance of understanding the impacts of hydro power and how it is a cross boundary issue e.g. Causeway Coast and Glens. The hydro power at Sion Mills was identified as one that does not negatively impact on the salmon river.

Anaerobic Digesters

- 6.10 Members raised the possibility of limiting the number of AD plants in this District, especially to consider the appropriate location for the large commercial / industrial-scale plants – on a farm or on an industrial estate?
- 6.11 A series of Member Discussion Meetings (MDMs) were held in the first half of 2019 to gain member input on a draft of the PS policy. The views expressed largely reflected the input given at the RTDs with some additional comments relating to specific text:
- the need for constraining designations;
 - the need to be clear that this District is delivering more than its 'fair share' to NI renewable target;
 - reference to diverse renewable energy to avoid over reliance on wind;
 - consider revised text on community benefits. Does it go far enough;
 - need to reference rates income when it is so little relative to applicant business income from same;

- consider text revision in respect of impacts of proposals on amenity/hydrology in particular.

6.12 A further consultation exercise was undertaken, in June 2019, with key consultees to garner their views on the most recent draft of the PS policy. Consultees commented:

DCSDC Climate Change Officer:

- need to consider damage to carbon sequestration functions e.g. peatlands, forests etc;
- need to include carbon sink value as material consideration

DCSDC Biodiversity Officer:

- RED 1 references low carbon energy to reduce greenhouse gas emissions, but consideration needs to be given to the loss of carbon storage if priority habitats, for example, peat or woodland are lost as this will result in conversely increasing carbon emissions and not make this a low carbon project as it is counterproductive. Consideration should be given to climate change mitigation not just adaptation, as the loss of these priority habitats not only results in the loss of the ability to store carbon, but the wide range of other ecosystem services, including the ability to store water during flood events;
- there should be cross reference to the natural environment chapter, for example, the importance of bat and bird surveys, as these priority species can be adversely affected by proposed wind farm developments;
- Hydro-electric schemes should reference the impact on water quality;
- consider listing the potential adverse impacts of the loss of priority habitats and the associated impacts on priority species. Also, the impact of air quality on sensitive habitats.

DfI Roads:

- The following wording be added to the emerging policy - “Although wind turbines erected in accordance with best engineering practice are considered to be stable structures, they should be set-back at least fall over distance plus 10% from the edge of any public road, public right of way or railway line so as to achieve maximum safety.” (For clarity, fall over distance is total height + turbine blades.)

- Best Practice Guidance to Planning Policy Statement 18 Renewable Energy should be included in the LDP as material guidance. Some of the content contained within this document is considered to be very relevant to DfI Roads.

DAERA Marine Division (including Marine Conservation & Reporting)

- Referencing and consideration of marine legislation and policy documents is insufficient. There should be greater recognition of the interaction and integration between the marine and terrestrial planning systems
- Limited recognition of importance of impact of development on seascape. Policy RED 1 should appropriately reference the seascape.
- Policy RED 1 should give consideration to impacts on marine, coastal and transitional waters
- It should be made clear in RED 1 that marine wildlife is taken into account and attention should be drawn to marine designations
- Policy RED 1, where it relates to hydroelectric schemes, should be explicit in the need to minimise harm to sensitive locations within the marine area and decisions should be made in accordance with marine policy.

Inclusive Strategic Growth Plan 2017-2032

- 6.13 Para. 5.19 of the SPPS requires that an LDP take account of Council’s community plan. The Inclusive Strategic Growth Plan 2032 (SGP) seeks to promote renewable energy to complement energy efficiency measures advising that:

‘Our approach to energy use determines how successful we are at combating fuel poverty; its availability at the right price is vital for the economy; and the amount of carbon dioxide we produce as a result has an impact on the future of our planet.’

The SGP proposes the key actions of analysing the region’s energy consumption and develop a strategy to reduce energy use, promoting energy efficiency and implementing a smart grid pilot project.

- 6.14 Under the Sustainability theme the SGP identifies the promotion of renewable energy as one way of delivering lower carbon emissions to aid sustainable living. The appropriate planning and siting of renewable energy development is also identified as key action under the Outcome and Action 4: Environment and Regeneration.

Resultant Renewable and Low Carbon Energy Content in the LDP Draft Plan Strategy

RED 1: Renewable and Low Carbon Energy Development – General Criteria

2021 Update: As a result of the consultation and representations received regarding the LDP draft Plan Strategy, the Council has proposed to make a number of changes to the Chapter 24, and some related chapters also. In particular, Policy RED 1 is a very cumbersome, multi-dimensional policy with a very short J&A. It is therefore proposed to split it into separate general, wind, solar, AD & hydro policies, and to move non-policy text to the J&A to be consistent with other chapters in the dPS.

The amended wording is shown in the Schedule of Proposed Changes (PC 206 to PC 223) which is included as document DS-001a to accompany the dPS Submission. **The following paragraphs refer to the wording in the original dPS.**

- 6.15 This policy has been significantly amended to reflect Members' wishes for positive controls in areas where the landscape is considered to be at or very close to reaching capacity from wind energy development.
- 6.16 It is considered that the proposed policy RED 1 reflects the policy direction as set out in the SPPS. WECAs have been introduced and reference has been made to other relevant tiered landscape designations and accompanying policy which will manage all forms of development within them.
- 6.17 Specific reference is made in RED 1 J&A in relation to the importance of active peatland as requested by Members and others.
- 6.18 The wording of RED 1 closely reflects that of RE 1 of the previous operating policy under PPS 18. There are some wording changes, in keeping with the SPPS: the proposal should not have any adverse impact upon water quality or quantity; appropriate weight being given to environmental, social and economic benefits of renewable energy development, as opposed to 'significant' weight; and protection of 'heritage assets' as opposed to 'built heritage'. These changes are in line with consultee comments and in keeping with the SPPS.
- 6.19 We have significantly strengthened up the wording with regard to the 'proximity principle'; to ensure that the whole-project is considered; emphasising the importance of our designated areas; time limits and restoration including the use of bonds. Specific sections relate to: Wind Energy – strengthening the need for time limits / restoration, separation distances for single turbines as well as wind farms and clarifying the Supplementary Planning Guidance. Sections have been added, specifically for Solar farms, Anaerobic Digesters and Hydro schemes; these will give clarity and certainty for officers, Members, developers and neighbours, as well as closing off some of the current policy vacuums.

(It was also considered, but is not felt to be necessary or practical to further amend the current definition / distinctions about single turbines cumulatively becoming a wind farm.)

2020 Update: In accordance with the Schedule of dPS Proposed Changes (December 2021), PC 214 seeks to amend J&A text to refer to photomontages in accordance with best practice. It should include, on Page 370 1st paragraph after criteria ix to read as follows: *‘Where the Council considers it necessary, a noise assessment report, and /or a landscape and visual impact assessment (including photomontages to aid assessment of visual impact) will be submitted upon request and prepared in accordance with best practice methodology.’*

Two best practice guidelines are hereby recommended in relation to the above: Scottish Natural Heritage (2017) Visual Representation of Wind Farms: Good Practice Guidance (version 2.2) and Landscape Institute Technical Guidance Note 06/19 Visual Representation of Development Proposals (17/9/19)

[https://www.nature.scot/sites/default/files/2019-09/Guidance%20-](https://www.nature.scot/sites/default/files/2019-09/Guidance%20-%20Visual%20representation%20of%20wind%20farms%20-%20Feb%202017.pdf)

[%20Visual%20representation%20of%20wind%20farms%20-%20Feb%202017.pdf](https://www.nature.scot/sites/default/files/2019-09/Guidance%20-%20Visual%20representation%20of%20wind%20farms%20-%20Feb%202017.pdf)

https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf

2020 Update: In accordance with the Schedule of dPS Proposed Changes (December 2021), PC 223 seeks to add reference in this EVB regarding re-use, refurbishment, repair & repowering of renewables, based on PPS 18 paragraph 4.17. Therefore, the following definition is added to this EVB: *‘For wind farm development, it is likely that the duration of the planning permission will be linked to the expected operational life of the turbines. Proposals may be submitted to extend the life of the project by re-equipping or replacing the original turbines. While there are advantages in utilising established sites, such cases will be determined on their individual merit and in the light of the then-prevailing policy and other relevant considerations.’*

Policy RED 2 - Integrated Renewable and Low Carbon Energy and Passive Solar Design

6.20 An earlier draft of the Plan Strategy included a policy which promoted the use of integrated renewable and low carbon technology and / or passive solar design and identified types of development which best placed to incorporate such features. After further consideration, this was subsumed into Policy GDPOL 1 of the General Development Principles and Policies chapter, as criterion iv of that policy. It has also been significantly strengthened in that it is now a requirement of all development proposals, unless it can be demonstrated to not be feasible.

- 6.21 These policy changes are all in line with comments of the Members, officers, consultees and other inputs summarised in the earlier sections, as well as being in keeping with the SPPS.

Overall Policy Direction

- 6.22 We have taken account of the POP representations, input from Members and consultee responses in reaching the conclusions in the proposed strategy and the policy wording. The Chapter therefore reflects a cautious approach with Members' desire to protect those areas considered to be most affected by wind energy development. Policy RED 1 also contains new specific text to introduce the concept of WECAs and the tiered hierarchy of proposed landscape designation and their implications for development within each.
- 6.23 The emphasis of the Preferred Option and proposed strategy / policy is to provide a balanced approach, which seeks to permit a diverse range of appropriate renewable energy development, whilst protecting the environment, sensitive landscapes and people. As such, appropriate weight will be given to the wider economic, social or environmental merits of proposals.
- 6.24 The paper highlighted the capacity for renewable energy generation within our District, as well as the current issues facing the development of renewable energy for example impact on the landscape, residential amenity, loss of financial incentives.
- 6.25 The SPPS sets out that the LDP must support a diverse range of renewable energy development in its policies and proposals. Renewable energy technology is constantly evolving and therefore, the Council had to consider the strategy it wants to take regarding the promotion of other forms of renewable energy, both large-scale and micro generation. Policy formulation within the LDP strikes a balance between encouraging the development of a range of renewable energies while protecting the environment and residential amenity from inappropriate development.
- 6.26 Policies in the LDP aim to be flexible and responsive to developing technology and government incentives.
- 6.27 All relevant legislation, policy and guidance were considered in the drafting of the Renewable and Low Carbon Energy Development section for the LDP PS. It is considered that while this chapter acknowledges the importance of renewable energy development and the economic, social and environmental benefits associated with it, it also reflects the Council's intent to protect the landscape character of its most significant landscapes.

- 6.28 By its very nature, this type of development raises a number of contentious challenges, including its impact on our environment and habitats, including protected landscapes, – particularly in remote upland areas, as well as the impact on the amenity of local residents.
- 6.29 This section also acknowledges the support for the Council to plan for powering the District and its anticipated growth - through green energy infrastructure, providing a stable, secure and affordable energy supply, while reducing our carbon footprint. However, certain forms of renewable energy development have presented the Council's Planning officers / Members with challenges in terms of impact on the environment and on visual or residential amenity; therefore, the LDP PS proposes to take a positive-yet-cautious approach to RE development.
- 6.30 The proposed strategy of the LDP reflects the regional strategy as set out in the RDS and SPPS. The strategy was also influenced by the aims of the District's Strategic Growth Plan and the recognition that the District has already experienced substantial wind energy development – contributing proportionately more than other Councils in NI.
- 6.31 In terms of operational policy, the wording and content is broadly in keeping with the SPPS and wording of PPS 18. DAP 2011 has no specific renewable energy policy, it refers to the RDS and its function to provide a spatial framework for transport, air and water quality, energy and waste strategies, and for infrastructure providers and public service promoters which would encompass renewable energy. SAP 2001 also has no renewable energy policy though nature and countryside conservation does apply and particular attention is given to the protection of this area's visual amenity and landscape character - which would apply in the consideration of renewable energy applications.

7.0 Sustainability Appraisal

- 7.1 Throughout their formulation, the policies contained within the Renewable and Low Carbon Energy chapter have been subject to an ongoing internal sustainability appraisal (SA). This is in addition to the wider external SA, conducted by Shared Environmental Service as part of the wider suite of impact assessments/appraisals required under the Planning Act (Northern Ireland) 2011. The internal appraisal was carried out with the fourteen objectives of the external appraisal in mind (refer to the SA report for more information).
- 7.2 The process of sustainability appraisal aims to ensure that a council's approach towards renewable and low carbon energy development is the most sustainable of all reasonable options available i.e. having considered any reasonable alternatives. In the case of renewable energy policies, it is not considered that any of the alternatives are reasonable. To not promote and provide for the use of renewable and low carbon energy technology and resources would be contrary to the provisions of the SPPS and RDS 2035 and would not be sustainable as it would mean we would continue to rely heavily on fossil fuels, so for these reasons it is considered that no reasonable alternatives exist.
- 7.3 With regard to the degree of sustainability of the resulting proposed policy, this is outlined below:

RED 1 Renewable and Low Carbon Energy Development

- 7.4 Although some potential influences are identified in terms of managing nuisance effects and protecting health, this policy has no perceptible effect on the social sustainability objectives, or the education objective.
- 7.5 Supporting renewable energy development in appropriate locations has a minor positive impact on sustainable economic growth and delivers a significant positive impact on managing material assets sustainably by enabling efficient energy production.
- 7.6 An uncertain impact is identified on the objective to improve air quality, as while some methods of generation coming under this policy do not produce any emissions and can reduce the need for fossil fuel generation, methods such as biomass and anaerobic digestion do have associated emissions.
- 7.7 Specific measures have been included in this policy to safeguard water resources and sensitive landscapes and consequently minor positive effects

are identified for the objectives to protect, manage and use water resources sustainably and to maintain and enhance landscape character, in addition to reducing the causes of and adapting to climate change. No perceptible impacts are identified on the remaining environmental sustainability objectives although some potential influences are identified on natural and physical resources and the historic environment.

- 7.8 A draft Habitats Regulations Assessment (HRA) has also been undertaken and published for consultation with the Draft Plan Strategy. It similarly determines possible adverse effects on the integrity of European sites (Special Areas of Conservation and Special Protection Areas) as a result of the policies within the LDP. This assessment also includes Ramsar sites under the provisions of the Ramsar Convention. Please refer to the full HRA document for full details.

Equality Impact Assessment

- 8.1 Section 75 of the Northern Ireland Act 1998 requires that public authorities have due regard to the need to promote equality of opportunity and good relations between persons of a particular religion, political opinion, race, age, marital status, sexual orientation or gender. It also includes people with disabilities or those with primary responsibility for the care of a dependant, such as an elderly person. These are known as ‘Section 75’ groups.
- 8.2 The policy contained within the Renewable and Low Carbon Energy Development chapter has been subject to an equality impact assessment (EQIA) to ensure no adverse impact on these groups.
- 8.3 This policy seeks to enable renewable energy development where this can be done without harm to visual amenity, neighbouring amenity or health and safety. It is considered that although a particular political or religious community may be impacted, negative impacts are offset by positive impacts for example financial benefits. In addition, any negative impacts are largely mitigated through such considerations as specific siting of wind turbines a minimum distance from sensitive receptors to avoid amenity impacts, landscaping for lessening visual impacts of ancillary works and access road improvements for example.
- 8.4 The Council is satisfied that there will be no adverse impact on any Section 75 groups or on community relations as a result of renewable energy development.. The detailed EQIA for Renewable and Low Carbon Energy policies is contained within the full draft PS EQIA document.

9.0 Rural Needs Impact Assessment

- 9.1 The Rural Needs Act 2016, requires District Councils and other Public Authorities to have due regard to rural needs when developing, adopting, implementing or revising policies, strategies and plans, and when designing and delivering public services.
- 9.2 To ‘have due regard’ means that a public authority must consciously consider the needs of people in rural areas. How much ‘due regard’ depends on the circumstances and, in particular, on the relevance of rural needs to the decision or function in question. The greater the relevance and potential impact for people in rural areas, the greater the regard required by the duty.
- 9.3 Throughout the formulation of the draft Plan Strategy, there has been consideration of the impact of each policy approach on the rural area, relative to the urban area and policies have been amended where it was deemed appropriate to do so. In the case of Renewable Energy policy, no amendments were considered necessary.
- 9.4 All forms of renewable energy have potential impacts on the rural area that are not matched in urban areas, in particular wind energy, as it is almost exclusively located in rural areas. Wind energy development can usually only occur where wind speeds are sufficiently fast⁷. While in other jurisdictions this may not be the case, in this District and throughout the region the areas of highest wind speed, with the best wind energy resource, are located mainly in upland areas⁸ which normally equates to a countryside location. In addition, due to the associated amenity considerations (noise, shadow flicker etc.), they cannot be sited in close proximity to developed areas where sensitive receptors such as residential development will be. Therefore, there are more significant impacts – both positive and negative, on the rural area.
- 9.5 A degree of impact to visual impact and landscape character is to be expected but this mitigated and there will also be financial benefits to individual landowners (who are normally resident in the affected area) and their communities through the generation of low cost, renewable energy for their own operations and for selling to the national grid. It should be noted that proposed policy aims to limit wind energy in designated sensitive areas and areas deemed to be at or reaching

⁷ Wind Energy Development in Northern Ireland's Landscapes – NIEA 2010.

⁸ Wind Energy Development in Northern Ireland's Landscapes – NIEA 2010

capacity and so this should help redress the balance of positive versus negative potential impacts of such development.

- 9.6 Similarly, biomass energy - particularly through combustion, can impact on such things as air quality and water quality (through emissions) and can produce significant noise. However, it also has financial benefits for the local economy; approx. 80 – 90% of operational expenditure on biomass fuel supply can accrue to the local economy and the supply of biomass fuel can secure a long-term income for farmers, forestry owners and contractors, and transport operators in rural areas⁹.
- 9.7 It is therefore acknowledged that there are several potentially negative impacts on the rural area but it is considered these are offset by the potential benefits and mitigated sufficiently as to not be significant.

⁹Best Practice Guidance to Planning Policy Statement 18 'Renewable Energy' – DOE 2009

Appendix 1

Planning Applications for Hydro-electric development in the District, as of 2019

Application Ref	Address	Description	Status
J/2007/0072/F	190m south east of 26 Letterbratt Road, Plumbridge	Hydroelectric turbine.	Granted
J/2010/0276/F	Between 550m north-east and 70m south-east of 5 Knock Road, Douglas Bridge, Strabane	Construction of weir and water intake structure, underground pipeline and underground hydroelectric powerhouse.	Deemed Refusal
J/2011/0190/F	Between 550m NE and 70m SE of 5 Knock Road Douglas Bridge Strabane	Construction of weir and water intake structure, underground pipeline and underground hydroelectric powerhouse.	Granted
J/2011/0193/F	100m due North of 11 Grove Road Castleberg	Micro-Hydroelectric renewable energy system 20kw on the border burn stream. To supply electricity for use on site with any excess exported to the grid.	Granted
A/2011/0219/F	lands adjacent to 41 Lower Ballyartan Road Lettermuck Claudy Londonderry	Proposed installation of an Archimedes screw hydroelectric turbine including fish pass, modifications to existing intake, alterations to existing mill race and construction of a new turbine house.	Refused
A/2011/0242/F	To rear of 73 Glenshane Road Drumahoe.	To reinstate a hydroelectric, renewable energy system on the Faughan river using an existing	Withdrawn

		weir, restored mill race and installation of a fish friendly archimedes screw turbine. Capacity 109 KW.	
A/2011/0246/F	Lands at Ardmore mill complex Bleach Green, Green Road Ardmore	Proposed redevelopment of hydroelectric scheme to include replacement weir and intake structure, mill race and penstock, new turbine house and water outfall structure.	Refused
A/2011/0516/F	Turbine house 50m north west of 10 Altinure Road Park Claudy. Intake structure 330m south south east of Turbine House.	To develop a microhydro electricity generating renewable energy system (5kw) on the adjoining stream on the outskirts of Park, Claudy. Electricity generated will be exported to the grid.	Granted
A/2012/0005/F	Turbine house is 120m ssw of 59 Barnes Road Claudy and intake structure is 650m SSE of 59 Barnes Road Claudy	To develop a microhydro electricity generating renewable energy system (20kw) on a tributary stream joining Sluggada Burn. Electricity generated to be exported to the grid.	Withdrawn
J/2012/0087/F	Turbine House 150m NW Of 44 Lettercran Road Castlederg. Intake Structure 800m Due South Of 41 Lettercarn Road Castlederg	To develop a microhydro electricity renewable energy system (16kW) on a mountain stream flowing into the Fairywater River. Electricity generated to be exported to the grid.	Granted
J/2012/0403/F	305m south west of 21 Warren Road Dunamanagh Co Tyrone	Hydroelectric scheme. Construct an intake and turbine house. Connect the intake to the turbine house via a	Granted

		buried pipeline. Develop the site to produce hydroelectric power to supply the grid.	
A/2012/0553/F	Lands Adjacent To 41 Lower Ballyartan Road Lettermuck Claudy Londonderry BT47 3SY	Proposed installation of a fish pass to existing weir. Application associated with current planning application - A/2011/0219/F - Proposed Archimedes screw hydroelectric turbine.	Refused
J/2013/0322/F	Turbine house 100m SWW of 36 Station Road Ballymagorry Co Tyrone - Intake structure 260m NEE of 36 Station Road Ballymagorry Co Tyrone	To develop a micro hydro electricity generating renewable energy system (124kw) on the Glenmoran River on the outskirts of Ballymagorry. Electricity generated to be exported to the grid.	Granted
LA11/2015/0592/F	Development with Baronscourt Estate and Turbine House locates 198m SW Baronscourt Mansion House. Intake 1 located 2000m east of Baronscourt Mansion House. Intake 2 located 1600m east of Baronscourt Mansion House. Intake 3 located 1200 m south east of Baronscourt Mansion House. Intake 4 located 1350m south east of Baronscourt Mansion House.	Proposed construction and installation of 45kW Hydro Electric turbine including, 4 intakes, associated penstock, Turbine House and return point to Lough Fanny.	Granted

Appendix 2

Regional Landscape Character Areas

RLCA 5 - PPS18 SPG Wind Energy Development Consideration: (RLCA 5 encompasses, all or in part, LCA 14, 19, 20, 21, & 26)

West Tyrone Hills – NI RLCA 5

- 1.1 A distinct upland ridge extends into the District from Donegal, from Killeter Forest to Pollnalaght. The broad upland valleys of the Derg and Fairy Water are closely associated with these hills, forming a rural and relatively remote landscape of marginal farming. The ridge and the associated valleys are increasingly becoming the focus of wind turbine development.
- 1.2 Development pressure is restricted mostly to the eastern half of the RLCA along the lower valley side sand bottoms or along the dispersed road network. The upland topography of the western side effectively precludes development opportunities. The main focus and pressure for rural applications in the last 10 years is around Spamount; to the north west of Castlederg and to the south west of Killeter along the upper reaches of the Derg Valley. Such rural development frequently ‘urbanises’ the countryside with suburban style detailing within front gardens – gates, pillars, ornate railings and lighting etc.
- 1.3 Single turbines are a prominent feature in this RLCA, analysis over the last 15 years records hotspots on the rising ground to the north of the Fyfin Rd / Strabane Rd from Victoria Bridge to Castlederg. Similar concentrations are recorded south of Killen and Garvetagh and on the valley sides from Garvetagh and Ardstraw. The varied nature in terms of height, size and construction of such turbines increases their visual significance in the landscape. They also read cumulatively in the landscape with the prominent operational windfarms along the southern edges of this RLCA.
- 1.4 The PPS18 SPG on Wind Energy Development in NI’s Landscapes (PPS18 SPG) highlights, as previously detailed, the High – Medium sensitivity of the southern part of this open RLCA landscape to such development and stresses the need to consider cumulative impacts of further development, separation distances and the importance of avoiding visual linkage which could create a landscape dominated by windfarms.
- 1.5 Climate change impacts that may affect this RLCA during the lifetime of this LDP could include;
 - Increase conifer plantation coverage as warmer wetter conditions offer enhanced growing conditions;

- Vernacular infrastructure - integrity of traditionally designed local bridges etc. could be at risk to future extreme flooding occurrences;

Potential for future forms of alternative energy – hybrid solar farms in association with existing windfarm infrastructure.

- 1.6 **LCA 14 - Lough Bradan:** The broad, convex, rounded summits of the upland areas within this LCA are relatively well-suited to wind energy development. Sensitivity is further reduced, over wide areas, by the presence of extensive commercial forestry and other man-made influences. However areas of heather moorland and bog would be highly sensitive to wind farm development, especially to the impacts of access track construction, as would river valleys such as the Glendurragh and Kesh valleys. Overall, therefore, landscape sensitivity to wind energy development is medium.

Overall Sensitivity - Medium

Location, siting, layout and design considerations

- 1.7 The best locations for wind energy development are towards the tops of the broader, convex summits, where the rounded landform and – in the north and west – forestry provide partial screening. Existing forest access tracks could potentially be utilised for wind energy development. In this LCA wind energy development must be careful to avoid overwhelming the landscape. Care should be taken to avoid adverse impacts on the particularly sensitive northern edge of the plateau, as this edge is prominent and widely visible from the Derg valley. Based on the findings of the Development Pressure Analysis, there have been one planning approval and one planning refusal for single turbines over the time period from 2002 to 2017-18 Q3 and one approval granted and refusal for wind farms over the same time period. There is currently one operational wind farm consisting of 6 turbines and no operational single turbines in this LCA. This is according to LPS data, SONI and ortho photography inspection.

- 1.8 Cumulative impact is already an issue, affecting the setting of the Derg valley to the north. Ideally the strategy should be to seek to create distinct areas of wind energy development, clearly separated by areas of undeveloped landscape. Significant separation distances between clusters may be required to prevent the main ridgelines becoming dominated by turbines. Significant separation from wind farms in the Killeter Uplands LCA to the west is also desirable. There are also potential transboundary impacts in the west where the LCA borders County Donegal.

LCA 19 – Killeter Uplands:

- 1.9 The generally large scale and simple, homogenous character of this LCA, combined with the presence of rounded hills and extensive afforestation, indicate reduced landscape sensitivity to wind energy development. In visual terms sensitivity is also relatively low, as much of the area is isolated, inaccessible and not visible from public roads or settlements. In addition, there are relatively few scenic, natural or cultural heritage interests.

- 1.10 The south-western part of the LCA contains craggier landform of somewhat higher sensitivity as the rugged hill profiles in this area lend a sense of scale and form part of the scenic setting of Lough Derg in County Donegal. Open upland areas are also more sensitive than forested areas, as they retain the strongest sense of wildness. Overall Sensitivity – Medium

Location, siting, layout and design considerations

- 1.11 The broken, undulating character of the main ridgeline suggests that inappropriate wind energy development could dominate and flatten the landscape. The more rounded, broader hills in the north and west may be best able to accommodate wind energy development, and minor ridgelines may afford some topographic screening.
- 1.12 The south-western part of the LCA contains rockier and craggier tops that are more sensitive, although the lower ridges may also provide suitable locations. Siting within or close to forestry plantations may be beneficial, reducing impacts on the area's wild character. Existing forest tracks might prove useful to access wind energy development.
- 1.13 Care should be taken to avoid adverse impacts on important skylines at the head of the Derg valley and to the south above Lough Derg. Care should also be taken to avoid detrimental impacts on River Valleys and the wild character of intact moorland and bogs. Based on the findings of the Development Pressure Analysis, there have been 5 planning approvals granted and 3 planning refusals over a time period from 2002 to 2017-18 Q3. Over the same time period there have been planning approval for 6 wind farms and 2 planning refusals. Currently, there are 4 operational wind farms in this LCA comprising of 44 turbines. This is according to LPS data, SONI and ortho photography inspection.
- 1.14 There are issues of cumulative impact affecting the Derg valley to the north. There are also potential transboundary impacts in the west where the LCA borders County Donegal near Lough Derg. The recommended strategy in this LCA would be to create distinct areas of wind energy development, clearly separated by areas of undeveloped landscape. Adequate separation distances between wind energy developments or clusters will be a very important issue to help conserve its wild character.

LCA 20 – Derg Valley:

- 1.15 This LCA is generally broad in form and enclosed by rounded hills. There are relatively few important views or natural, cultural or recreational interests. These factors suggest reduced sensitivity to wind energy development. However the relatively low elevation of the hills and the fact that some of them have a distinctive form and provide local landmarks, as well as the unspoilt, tranquil character of the area as a whole, tend to increase sensitivity. The areas that are least sensitive to wind energy development are likely to be the flatter summits on the edges of the

LCA; the more prominent outlier hills would be highly sensitive. The height of the hills is likely to be a key constraint on turbine size, as many turbines would be out of scale with these low hills.

Overall Sensitivity - High to medium

Location, siting, layout and design considerations

- 1.16 The river valleys and distinctive outlier hills are the most sensitive parts of this LCA for wind energy development. The flatter, undulating hills north and south of Castleberg may have better capacity but nonetheless care will be needed to avoid adverse impacts on locally important skylines, especially to the north. It is recommended that wind energy development reflects the relatively low elevation of the hills in this LCA and the presence of small scale landscape features.
- 1.17 Care should be taken to avoid adverse impacts on the highly sensitive broad and open character of the central section of the valley, as development here could visually link the wind energy sites in the adjoining LCAs, creating a landscape dominated by wind farms. Skylines should be respected.
- 1.18 Based on the findings of the Development Pressure Analysis, there have been . However the three adjacent LCAs all contained operational and consented wind farms as well as further application sites. Hence cumulative impacts on this largely low-lying LCA are likely to become an issue in the future. Potentially there could also be transboundary issues as the LCA adjoins County Donegal north of Castleberg. It is recommended that wind energy developments be well-separated. This is according to LPS data, SONI and ortho photography inspection.

LCA 21 – Fairy Valley Water

- 1.19 This LCA, with its open character, its many small scale landscape features, and its sense of remoteness, is relatively sensitive to wind energy development, notwithstanding the sometimes degraded landscape quality and relatively few recreational interests. It provides a strong sense of contrast with surrounding upland and lowland areas, and is vulnerable to the introduction of tall structures.
- 1.20 There might be limited areas of lower sensitivity in the undulating foothills to the south and south-west where small coniferous plantations also provide enclosure, but open floodplain areas would be very sensitive to wind energy development, which could be widely visible.
- Overall Sensitivity - High to medium

Location, siting, layout and design considerations

- 1.21 Wind energy development could easily overwhelm the small scale intimate landscape of this LCA. The more undulating foothills of the south and south-west of this LCA are least sensitive to turbine development, particularly where woodland

plantations offer screening. It is recommended that turbine development be carefully integrated with and reflects the scale of landform and vegetation.

- 1.22 Care should be taken to avoid adverse impacts on the very sensitive broad, low river floodplain, the settings of the many small loughs, and the attractive setting of Drumquin and the Drumquin river valley. Based on the findings of the Development Pressure Analysis, 7 single turbine applications have been approved and none have been refused over the period from 2002 to 2017-18 Q3 and over the same period, no wind farm applications have been received. There are currently no operational single turbines or wind farms in this LCA. This is according to LPS data, SONI and ortho photography inspection.

Cumulative impacts are an issue of growing importance and are a key consideration for wind energy development in this LCA.

LCA 26 – Bessy Bell and Gortin

- 1.23 The majority of this landscape is highly sensitive to wind energy development, notwithstanding the presence of existing and consented wind farms. This is an iconic and widely visible Sperrin landscape, whose summits and steep upper slopes are particularly sensitive to the introduction of any new structures. Sensitivity is further increased by the LCA’s popularity for outdoor recreation. Overall Sensitivity - High

Location, siting, layout and design considerations

- 1.24 The south-western hill shoulder of Bessy Bell may be the most suitable area for wind energy development. However, it is recommended that design and layouts are consistent between any adjacent sites and should ideally read as a cluster.
- 1.25 Care should be taken to avoid adverse impacts on skylines, views from the Strule valley, A5, Gortin Glen Forest Park and Mullaghcarn and on the setting of the Heritage Park at Baronscourt. Based on the findings of the Development Pressure Analysis, there have been 16 planning approvals granted for single wind turbines and 5 refusals over the period from 2002 to 2017-18 Q3. There has been no wind farm applications received over the same period. There is currently one operational wind farm comprising of ten turbines within this LCA and three single turbines, this is based on data obtained from LPS, SONI and Ortho-photography inspection. These give rise to issues of cumulative impact, both locally and over a wider area to the west, where there are two existing wind farms around 15km away in Lough Bradan LCA (LCA 14)

RCLA 6 - PPS18 SPG Wind Energy Development Consideration: (RCLA 6 encompasses, all or in part, LCA 20, 19, 26, 27, 29, 30, 31 & 32)

Foyle Valley – NI RLCA 6

- 1.26 **Summary** - The Foyle and the Foyle Valley RLCA forms the border with Co. Donegal. The Foyle flows through this broad valley which extends both sides of this

boundary. The city of Derry has an essential setting in the wooded river valley. South of Strabane the valley narrows to Newtownstewart where its character changes to an upland valley in the Sperrins. The Foyle Valley system unites these landscapes, well known as a salmon river, and a key transport route.

- 1.27 Hotspots for rural development pressure were noted surrounding Strabane, particularly to the east and south west where the higher lands of Knockavoe, wooded grounds around Hollyhill and the setting of Craignagore provide attractive potential locations for dwellings. Concentrations of applications were recorded around Sion Mills, Glebe, Victoria Bridge and Douglas Bridge demonstrating a desire for rural living but in close proximity to the A5 with its easy links to Strabane, Derry northwards or Omagh to the south. Suburban form and design is also impacting on the rural landscape within this RLCA. Visual intrusion was recorded from recent housing developments along Crescent Link in Derry on the skyline along the western valley ridge line of the Lower Faughan River which forms the setting of the city. Significant WW2 ordnance storage sites still remain in this valley setting at Fincarn and Kilnappy.
- 1.28 Single turbines are a common feature along this valley landscape and are readily visible along valley sides and summits. Hotspots were recorded to the south of Magheramason and to the south west of Sion Mills. Again the variety and style make them a prominent feature and careful consideration will be required about any future siting to avoid cumulative visual linkage on skylines and also in association with existing windfarms within the District or transboundary into Co Donegal.
- 1.29 The PPS18 SPG highlights, the High – Medium sensitivity of this RLCA. Given its prominence in long views, links to the Sperrins, its key transport route (A5) and the significant setting it provides to Derry, Strabane and Newtownstewart, careful consideration needs to be given to avoid adverse detrimental visual impacts on the significant features. This will be particularly relevant to the rising landscape setting to both Derry and Strabane provided by Sheriff's Mountain and Knockavoe to ensure that there is no intensification of tall structures in these readily visible areas. Likewise important skylines and the cultural heritage setting around Sion Mills Conservation Area should also be respected.
- 1.30 The proposed future development of the A5 through this RLCA is likely to have a significant impact along its length with associated earthworks and mitigating planting. This will be particularly noticeable where the proposed new sections deviate from the long established current road corridor – e.g. along the low lying sides of the River Foyle. Such planting will take many years to mature before eventually softening the impact of this major road infrastructure project.
- 1.31 Climate change impacts that may impact on this RLCA during the lifetime of this LDP could include;

- Increase conifer plantation coverage as warmer wetter conditions offer enhanced growing conditions;
- Vernacular infrastructure - integrity of traditionally designed local bridges etc. could be at risk to future extreme flooding occurrences;
- Potential for future forms of alternative energy – hybrid solar farms in association with existing windfarm infrastructure.
- Increased possibility for enhanced flood protection / inundation measures around the key settlements of Derry, Strabane and Newtownstewart.

1.32 **LCA 20 – Derg Valley:** This LCA is generally broad in form and enclosed by rounded hills. There are relatively few important views or natural, cultural or recreational interests. These factors suggest reduced sensitivity to wind energy development. However the relatively low elevation of the hills and the fact that some of them have a distinctive form and provide local landmarks, as well as the unspoilt, tranquil character of the area as a whole, tend to increase sensitivity. The areas that are least sensitive to wind energy development are likely to be the flatter summits on the edges of the LCA; the more prominent outlier hills would be highly sensitive. The height of the hills is likely to be a key constraint on turbine size, as many turbines would be out of scale with these low hills.
Overall Sensitivity - High to medium

Location, siting, layout and design considerations

- 1.33 The river valleys and distinctive outlier hills are the most sensitive parts of this LCA for wind energy development. The flatter, undulating hills north and south of Castlederg may have better capacity but nonetheless care will be needed to avoid adverse impacts on locally important skylines, especially to the north. It is recommended that wind energy development reflects the relatively low elevation of the hills in this LCA and the presence of small scale landscape features.
- 1.34 Care should be taken to avoid adverse impacts on the highly sensitive broad and open character of the central section of the valley, as development here could visually link the wind energy sites in the adjoining LCAs, creating a landscape dominated by wind farms. Skylines should be respected.
- 1.35 Based on the findings of the Development Pressure Analysis, there have been 44 planning approvals and 16 planning refusals for single wind turbine applications over the period from 2002 to 2017-18 Q3. There has been one wind farm approval granted over the same period. There are currently 17 operational turbines in this LCA based on data obtained from LPS, SONI and Ortho-photography inspection. The three adjacent LCAs all contained operational and consented wind farms as well as further application sites. Hence cumulative impacts on this largely low-lying LCA are likely to become an issue in the future. Potentially there could also be trans-

boundary issues as the LCA adjoins County Donegal north of Castledearg. It is recommended that wind energy developments be well-separated.

- 1.36 **LCA 26 – Bessy Bell and Gortin:** The majority of this landscape is highly sensitive to wind energy development, notwithstanding the presence of existing and consented wind farms. This is an iconic and widely visible Sperrin landscape, whose summits and steep upper slopes are particularly sensitive to the introduction of any new structures. Sensitivity is further increased by the LCA's popularity for outdoor recreation.

Overall Sensitivity - High

Location, siting, layout and design considerations

- 1.37 The south-western hill shoulder of Bessy Bell may be the most suitable area for wind energy development. However, it is recommended that design and layouts are consistent between any adjacent sites and should ideally read as a cluster.

- 1.38 Care should be taken to avoid adverse impacts on skylines, views from the Strule valley, A5, Gortin Glen Forest Park and Mullaghcarn and on the setting of the Heritage Park at Baronscourt. Based on the findings of the Development Pressure Analysis, there have been 16 planning approvals granted for single wind turbines and 5 refusals over the period from 2002 to 2017-18 Q3. There has been no wind farm applications received over the same period. There is currently one operational wind farm comprising of ten turbines within this LCA and three single turbines, this is based on data obtained from LPS, SONI and Ortho-photography inspection. These give rise to issues of cumulative impact, both locally and over a wider area to the west, where there are two existing wind farms around 15km away in Lough Bradan LCA (LCA 14).

- 1.39 **LCA 27 – Foyle Valley:** The alluvial plain and steep valley sides on the western margins of the Sperrin Foothills and Sperrin Mountains are very sensitive to change, not only because of their complex and varied character, but because they form a backdrop to views along the valley. They are a key part of the landscape setting of the mountains as well as the towns of Strabane (Knockavoe) and Newtownstewart. The western edge of the valley south of Strabane (where this lies in Northern Ireland) has less landscape and visual constraints to wind energy development.

Overall Sensitivity - High to medium

Location, siting, layout and design considerations

- 1.40 This LCA has relatively high sensitivity. The western edge of the valley south of Strabane would be the most suitable location for some form of wind energy development. It is recommended that wind energy developments reflect the complexity and sensitivity of the landscape setting and the relatively small landform scale. Within this LCA care should be taken to avoid adverse impacts on the settings

of Derry, Strabane and Newtownstewart. Care should also be taken to avoid detrimental visual impacts on the Sperrins and the A5 tourist route. The settings of important natural and cultural heritage features (eg Sion Mills Conservation Area) should be respected as should important skylines and settings within the valley.

1.41 Based on the findings of the Development Pressure Analysis, there have been 32 planning approvals for single turbines granted over the time period from 2002 to 2017-18 Q3 and 8 refusals over the same period. There have been no wind farm planning applications received over this time period. Currently, there are 9 operational single turbines according to data obtained from LPS, SONI and ortho-photography inspection. Hence there are growing cumulative and transboundary impacts that require consideration.

1.42 **LCA 29 – Sperrin Mountains:** This LCA lies at the heart of the Sperrins. The scale and landform of at least parts of the area are in theory well-suited to wind energy development. However, this is generally outweighed by the sheer visual prominence of the Sperrin Mountains over a wide area of Northern Ireland. This is an iconic landscape of immense appeal for tourism and recreation; its core landscapes are highly sensitive to any wind energy development. In addition, it has a strong wild character and many natural and cultural features that are highly vulnerable to the introduction of wind turbines and associated access tracks and infrastructure. Hence the majority of this landscape is highly sensitive to wind energy development, notwithstanding the presence of existing and consented wind farms.

Overall Sensitivity - High

Location, siting, layout and design considerations

1.43 Owenreagh, in the west of this LCA, is the specific area in this LCA that is most suited to wind energy development. Consideration could be given to siting turbines on hill flanks where they might be seen against a backdrop of land. Care should be taken to avoid adverse impacts on skylines, views and the visual amenity, recreational value and wild character of this LCA. Open exposed slopes and ridgelines should be respected as should natural and cultural heritage landscape interests. Care should be taken to ensure that wind energy developments do not dominate and flatten this topographically complex landscape. Based on the findings of the Development Pressure Analysis, there have been 21 planning approvals granted for single wind turbines from the period of 2002 to 2017-18 Q3 and 14 planning refusals for the same period along with one approval for a wind farm. Currently there are 4 operational single turbines and 1 operational wind farm in this LCA. According to data obtained from LPS, SONI and ortho-photography inspection. Hence there are growing cumulative/ transboundary impacts in this LCA.

1.44 **LCA 30 – Sperrin Foothills:** Theoretically the simple, convex forms of some of the hills in this LCA are suited to wind energy development, and the widespread tree cover could provide screening. However the relatively small size of the hills, the

intimate character of the adjoining valleys, the small scale field patterns on the hill slopes, and the many sudden, short range views tend to increase landscape sensitivity to wind energy development. A further constraint is the fact that the LCA forms a foreground to some of the most important views of the Sperrins: hence any wind energy development on this northern fringe of the Sperrins could have widespread and significant impacts on landscape character and visual amenity. The north-eastern and north-western fringes of the LCA might be of slightly lower sensitivity.

Overall Sensitivity – High

Location, siting, layout and design considerations

- 1.45 This LCA has a diverse, often intimate character and intrinsically high scenic quality. The areas most suitable for some form of wind energy development are on the north-eastern fringes of the LCA (north of the A6) and on outlying hills north-west of Slievekirk. It is recommended that wind energy developments reflect the fact that turbines may be seen in very close juxtaposition with small scale field patterns and landscape features. Care should be taken to avoid adverse impacts on the highly sensitive prominent ridgelines such as those around Slievekirk or in views to the Sperrin Mountains (notably from the B74 and A6) as development in these locations could dominate the landscape. Care should also be taken to avoid adverse impacts on the setting of Learmount Castle, Dunnamanagh and Claudy and visual impacts on the Sperrins and the A5 tourist route. The settings of important natural and cultural heritage features should be respected.
- 1.46 Based on the findings of the Development Pressure Analysis, there have been 58 planning approvals granted for single turbines during the period from 2002 to 2017-18 Q3 and 27 planning refusals. Over the same period there have been approvals granted for 7 wind farms. Currently, there are 6 operational single turbines and 4 operational wind farms comprising of 32 wind turbines. This is according to data obtained from LPS, SONI and ortho-photography inspection.
- 1.47 If any further wind energy developments were to be proposed in the area between these sites the issue of cumulative impacts would be a significant consideration. It is recommended that wind energy developments are visually well separated from each other and from existing development in adjoining LCAs.
- 1.48 **LCA 31 – Burngibbah & Drumahoe:** This LCA is generally very sensitive to wind energy development due to its strong form and field patterns extending high up the valley sides, its wide visibility, particularly from the south and west, and its proximity to the city of Derry. Its open summits and ridges are distinctive and characteristic landscape features; development on these summits could interrupt and diminish these characteristic skylines. The northern part is more degraded with pylons and former mineral workings so is somewhat less sensitive in that respect, although also

more heavily settled. The southern part retains a remote, unspoilt intact character that would be highly sensitive to wind energy development.
Overall Sensitivity - High to medium

Location, siting, layout and design considerations

- 1.49 The northern part of this LCA, which has more rounded landform and a more degraded character, is more suitable for wind energy development than other locations in this LCA. Consideration could be given to setting turbines well back from the steep valley sides to reduce their prominence and to help contain visibility. It is recommended that wind energy development reflects the limited height of the hills and the importance of this area as part of the approaches to and setting of the Foyle estuary and Derry. Care should be taken to avoid adverse impacts on the more dramatic and scenic southern part of this LCA. Open skylines should be respected. Based on the findings of the Development Pressure Analysis, there have been 20 planning approvals granted and 6 planning refusals over the time period from 2002 to 2017-18 Q3. Over the same period, there have been no applications submitted for wind farms. There are currently 3 operational single turbines in this LCA, this is according to data obtained from LPS, SONI and ortho-photography inspection. There might also be transboundary issues if wind farm development occurs west of the Foyle in County Donegal.

- 1.50 **LCA 32 – Derry Slopes:** This LCA’s gateway role and proximity to the historic city of Derry and the Foyle increases its sensitivity to wind energy development, which could be highly visible. These western slopes of Sheriff’s Mountain frame the city and provide a scenic landscape setting. The River Foyle waterside and the area’s many small historic parks and estates are also highly sensitive. However, the undulating slopes and urban fringe areas, particularly where already affected by man-made influences, might be somewhat less sensitive to development that is carefully sited and appropriate in scale.
Overall Sensitivity - High to medium

- 1.51 **Location, siting, layout and design considerations**
The undulating lower slopes in the southern part of this LCA are least sensitive to wind energy development. Consideration could be given to siting on mid-slope locations, particularly where topography could offer some screening. Care should be taken in relation to access roads which could be highly visible from across the river. Developed areas such as urban fringe industrial estates may also offer some opportunities for turbine development. It is recommended that any wind energy development reflects the scale of the relatively small surrounding hills and existing built features that lend a sense of scale in this LCA.

- 1.52 Care should be taken to avoid adverse impacts on the highly sensitive historic setting of Derry, its surrounding steep slopes and skylines, the River Foyle and its adjacent lands, and estates and estate woodlands. Although Holywell and Minkey Hills have a number of telecommunications masts, care should be taken to avoid

adverse impacts on these hills as they are on a prominent skyline. Care should be taken to ensure that wind energy developments do not dominate or intrude unacceptably on the sensitive settings in this LCA.

- 1.53 Based on the findings of the Development Pressure Analysis, there have been 5 planning approvals granted along with three planning refusals over a time period from 2002 to 2017-18 Q3. Over this same period, there have been no applications for wind farms. There are currently no operational wind farms or single turbines in this LCA according to data obtained from LPS, SONI and ortho-photography inspection. Transboundary issues might arise as this LCA shares a border with County Donegal.

**RCLA 7 - PPS18 SPG Wind Energy Development Consideration:
(RCLA 7 encompasses, all or in part, LCA 24, 26, 27, 28, 29, 30)**

Sperrins – NI RCLA 7

- 1.54 **Summary** - The principal mountain range of the north-west, the Sperrins comprise some of the wildest and most rugged terrain in Northern Ireland. The main ridges, divided by the scenic Glenelly valley, are surrounded by a series of outliers including Bessy Bell and Mullaghcarn above the River Strule, Slieve Gallion in the east, and Benbradagh across the Glenshane Pass. The boundaries follow the main east-west ridges of the Sperrins, separating them from the lower hills to north and south. Much of the Sperrins RLCA, of which approximately 50% lies within this District, is covered by the Sperrins AONB designation. The Sperrins are a sparsely settled area with a high degree of remoteness and tranquillity. The mountains and upper glens have significant wildness character arising from their inaccessibility,
- 1.55 Over the past 15 years, the pressure for rural dwellings has been along the main road network which navigates the lower reaches and valleys of the Sperrins landscape. The thrust of applications were along the lower, more accessible northern fringe of the RLCA, although noticeable linear concentrations were also apparent along the roads radiating out from Plumbridge as follows:
- Lisnaragh Rd - north to Donemana;
 - Dergbrough Rd - south west to Newtownstewart;
 - Culvacullion Rd – south to Gortin;
 - Glenelly Rd – west along the Glenelly Rd.
- 1.56 A number of these approvals are at the ‘implemented’ (foundations constructed) stage and have yet to fully make their true cumulative visual impact on the landscape. More recent planning permissions in this RCLA have broadly followed the same location pattern. Similarly, suburban form and design and linear development is also impacting on the rural landscape within this RLCA and careful consideration will be required to ensure that future rural housing demand and forms

of development does not diminish the intrinsic character of this significant upland / valley complex.

- 1.57 Single turbine development pressure has mostly been restricted to the lower northern foothills and north western fringes of this RCLA. As a result, the cumulative impact of their siting often reads in long distance views with other single turbines / windfarms to compound their impact within the AONB setting. The very inaccessible and remote uplands of the Sperrins and the enclosed Glenelly Valley have remained virtually free of such development and maintain their natural character.
- 1.58 The PPS18 SPG considers this landscape to be of a very high sensitivity to future wind development, with slightly lesser sensitivity in the extreme west. The significant recreation and tourism appeal of the landscape is considered iconic and its core landscapes, with their strong wild character are highly vulnerable to the introduction of wind turbines and associated access tracks and infrastructure. Similarly, the inherent scale, form and complexity of the Glenelly Valley with its visually significant skylines above make it highly sensitive to wind energy development. In addition, the elevated nature of this RLCA provide for long distance views into Donegal and growing cumulative transboundary windfarm impacts.
- 1.59 Climate change impacts that may impact on this RLCA during the lifetime of this LDP could include;
- Increase conifer plantation coverage as warmer wetter conditions offer enhanced growing conditions;
 - Vernacular infrastructure - integrity of traditionally designed local bridges etc. could be at risk to future extreme flooding occurrences;
 - Future flooding, associated landscape erosion and loss of agricultural lands in the riverside glacial sands and gravels complexes contained within the main valleys;
 - Continuing pressure for renewables development;
 - Increased possibility for enhanced flood protection / inundation measures – valley / riverside tree planting to alleviate future flood flows.
- 1.60 **LCA 24 – South Sperrin:** While the large scale and relatively simple landform and landcover of this LCA are in theory suited to wind energy development, most of the area of this LCA has an unspoilt character and many valued characteristics and features that make it highly sensitive to change. The dramatic, enclosed lower valley reaches are especially sensitive; wind energy development on the slopes or tops above could potentially have an overwhelming landscape impact.
- 1.61 Further east, where the valleys have a more open form and where there is extensive forestry, the character of the landscape appears better suited to wind energy

development. However this is outweighed by the very wide visibility of this part of the South Sperrins. In views from the south particularly, Mullaghturk and Carnanelly appear as focal points, and the landscape is very sensitive to wind energy development.

Overall Sensitivity - High

Location, siting, layout and design considerations

1.62 This LCA has a sensitive landscape setting and wide visibility. Ideally turbines should be associated with and reflect the scale of groups of buildings and trees or forestry plantation. Care should be taken to avoid adverse impacts on the extremely sensitive skylines and the open, exposed and largely uninhabited landscapes of the upper slopes. Care should also be taken to avoid adverse effects on the character and setting of features of natural and cultural heritage landscape interest (as noted in this section), on the area’s sense of wildness, and on views from the South Sperrins Way.

1.63 Based on the findings of the Development Pressure Analysis, one wind turbine approval has been approved over the period of 2002 to 2017-18 Q3 and there have been no refusals. There have been no wind farm applications received over this period. There are currently no operational wind turbines in this LCA. This is according to LPS data, SONI and ortho photography inspection.

1.64 **LCA 26 – Bessy Bell and Gortin:** The majority of this landscape is highly sensitive to wind energy development, notwithstanding the presence of existing and consented wind farms. This is an iconic and widely visible Sperrin landscape, whose summits and steep upper slopes are particularly sensitive to the introduction of any new structures. Sensitivity is further increased by the LCA’s popularity for outdoor recreation.

Overall Sensitivity - High

Location, siting, layout and design considerations

1.65 The south-western hill shoulder of Bessy Bell may be the most suitable area for wind energy development. However, it is recommended that design and layouts are consistent between any adjacent sites and should ideally read as a cluster.

1.66 Care should be taken to avoid adverse impacts on skylines, views from the Strule valley, A5, Gortin Glen Forest Park and Mullaghcarn and on the setting of the Heritage Park at Baronscourt. Based on the findings of the Development Pressure Analysis, there have been 16 planning approvals granted for single wind turbines and 5 refusals over the period from 2002 to 2017-18 Q3. There has been no wind farm applications received over the same period. There is currently one operational wind farm comprising of ten turbines within this LCA and three single turbines, this is based on data obtained from LPS, SONI and Ortho-photography inspection. These give rise to issues of cumulative impact, both locally and over a wider area

to the west, where there are two existing wind farms around 15km away in Lough Bradan LCA (LCA 14).

- 1.67 **LCA 27 – Foyle Valley:** The alluvial plain and steep valley sides on the western margins of the Sperrin Foothills and Sperrin Mountains are very sensitive to change, not only because of their complex and varied character, but because they form a backdrop to views along the valley. They are a key part of the landscape setting of the mountains as well as the towns of Strabane and Newtownstewart. The western edge of the valley south of Strabane (where this lies in Northern Ireland) has less landscape and visual constraints to wind energy development.
Overall Sensitivity - High to medium

Location, siting, layout and design considerations

- 1.68 This LCA has relatively high sensitivity. The western edge of the valley south of Strabane would be the most suitable location for some form of wind energy development. It is recommended that wind energy developments reflect the complexity and sensitivity of the landscape setting and the relatively small landform scale. Within this LCA care should be taken to avoid adverse impacts on the settings of Derry, Strabane and Newtownstewart. Care should also be taken to avoid detrimental visual impacts on the Sperrins and the A5 tourist route. The settings of important natural and cultural heritage features (eg Sion Mills Conservation Area) should be respected as should important skylines and settings within the valley.
- 1.69 Based on the findings of the Development Pressure Analysis, there have been 32 planning approvals and 8 refusals in this LCA over the period of 2002 to 2017-18 Q3. During this same period of time, there have been no wind farm applications. This is according to LPS data, SONI and ortho photography inspection. Hence there are growing cumulative and transboundary impacts that require consideration.
- 1.70 **LCA 28 – Glenelly Valley:** The inherent scale, form and complexity to the intimate valley landscapes of this LCA, which are in addition very strongly influenced visually by the skylines above, make Glenelly Valley highly sensitive to wind energy development. Any wind energy development on the slopes or skylines would be extremely intrusive. In addition, the landscape is sensitive because it is highly valued for its scenic beauty, historic field patterns and significant archaeological sites.
Overall Sensitivity – High

Location, siting, layout and design considerations

- 1.71 This LCA has very high landscape and visual sensitivity. It is recommended that any turbine development be closely associated with and reflects the scale of farm buildings and sheltering woodland. Care would have to be taken to avoid adverse impacts on the extremely sensitive open, exposed slopes and ridgelines and on the key landscapes and visual characteristics and values that were described in this section. At the time of assessment there were no operational or consented wind

farms in this LCA. The nearest existing wind farm was at Owenreagh (total 16 turbines) 8km north-west of Plumbridge which is visible from some areas of higher ground around Plumbridge.

- 1.72 **LCA 29 – Sperrin Mountains:** This LCA lies at the heart of the Sperrins. The scale and landform of at least parts of the area are in theory well-suited to wind energy development. However, this is generally outweighed by the sheer visual prominence of the Sperrin Mountains over a wide area of Northern Ireland. This is an iconic landscape of immense appeal for tourism and recreation; its core landscapes are highly sensitive to any wind energy development. In addition, it has a strong wild character and many natural and cultural features that are highly vulnerable to the introduction of wind turbines and associated access tracks and infrastructure. Hence the majority of this landscape is highly sensitive to wind energy development, notwithstanding the presence of existing and consented wind farms.

Overall Sensitivity – High

Location, siting, layout and design considerations

- 1.73 Owenreagh, in the west of this LCA, is the specific area in this LCA that is most suited to wind energy development. Consideration could be given to siting turbines on hill flanks where they might be seen against a backdrop of land. Care should be taken to avoid adverse impacts on skylines, views and the visual amenity, recreational value and wild character of this LCA. Open exposed slopes and ridgelines should be respected as should natural and cultural heritage landscape interests. Care should be taken to ensure that wind energy developments do not dominate and flatten this topographically complex landscape. Based on the findings of the Development Pressure Analysis, there have been 21 planning approvals and 14 refusals in this LCA during the period of 2002 to 2017-18 Q3. During this period, there has been one planning approval granted for a wind farm. There are currently 4 operational single turbines and 1 operational wind farm comprising 16 turbines. This is according to LPS data, SONI and ortho photography inspections. Subsequently, there are three consented wind farms within 18 to 25km to the west in County Donegal. Hence there are growing cumulative/transboundary impacts in this LCA.
- 1.74 **LCA 30 – Sperrin Foothills:** Theoretically the simple, convex forms of some of the hills in this LCA are suited to wind energy development, and the widespread tree cover could provide screening. However the relatively small size of the hills, the intimate character of the adjoining valleys, the small scale field patterns on the hill slopes, and the many sudden, short range views tend to increase landscape sensitivity to wind energy development. A further constraint is the fact that the LCA forms a foreground to some of the most important views of the Sperrins: hence any wind energy development on this northern fringe of the Sperrins could have widespread and significant impacts on landscape character and visual amenity. The

north-eastern and north-western fringes of the LCA might be of slightly lower sensitivity.

Overall Sensitivity – High

Location, siting, layout and design considerations

- 1.75 This LCA has a diverse, often intimate character and intrinsically high scenic quality. The areas most suitable for some form of wind energy development are on the north-eastern fringes of the LCA (north of the A6) and on outlying hills north-west of Slievekirk. It is recommended that wind energy developments reflect the fact that turbines may be seen in very close juxtaposition with small scale field patterns and landscape features. Care should be taken to avoid adverse impacts on the highly sensitive prominent ridgelines such as those around Slievekirk or in views to the Sperrin Mountains (notably from the B74 and A6) as development in these locations could dominate the landscape. Care should also be taken to avoid adverse impacts on the setting of Learmount Castle, Dunnamanagh and Claudy and visual impacts on the Sperrins and the A5 tourist route. The settings of important natural and cultural heritage features should be respected.
- 1.76 Based on the findings of the Development Pressure Analysis, there are currently 58 planning approvals and 27 refusals for single wind turbines during the period from 2002 to 2017-18 Q3. During the same time period, there have been 7 wind farm approvals in this LCA. There are currently 4 operational wind farms in this LCA comprising of 32 wind turbines and 6 single turbines. This is according to LPS data, SONI and ortho photography inspection. If any further wind energy developments were to be proposed in the area between these sites the issue of cumulative impacts would be a significant consideration. It is recommended that wind energy developments are visually well separated from each other and from existing development in adjoining LCAs.

RCLA 8 - PPS18 SPG Wind Energy Development Consideration: (RCLA 8 encompasses, all or in part, LCA 27, 29, 30, 31, 33 & 34)

North Sperrins Hills & Valleys – NI RCLA 8

- 1.77 **Summary** - This complex series of hills, plateaux and valleys occupies the area between the Sperrins and Lough Foyle. The broad Roe Valley lies below the basalt ridge to the east, and gives access to the smaller and more intricate valleys around Claudy and Dunnamanagh. To north and west the hills overlook the Foyle with Donegal beyond. Approximately 60% of this RLCA lies within our District and a significant portion of the foothills of the Sperrins AONB comprises its southern boundary.
- 1.78 The North Sperrins Hills and Valleys is characterised by the series of varied hills and valleys which cover the area between the Foyle Valley in the west and the Binevenagh Ridge to the east. The landscape is interspersed with streams flow from the Sperrins through steep, narrow valleys that become broader to the north. Many

of the upper valleys are wooded, with limited settlement. Small villages are located lower down, with an increase in settlement towards the north.

- 1.79 The elevated nature of the foothills to the AONB and the appeal of the east – west trending wooded valleys and their convenient road access has made such locations extremely popular for those seeking a rural, but accessible, location to live. Rural application hotspot analysis indicates a central clustering of applications over the past 15 years north and south of the A6, with a noticeable concentrations in the lands to the south focusing in the Burngibbagh valley and to the west, along the Bigwood Rd and Ardkill Rd to the south of Armore. As in similar RLCAs, such development has brought a degree of urbanisation to the countryside with suburban style detailing within front gardens – gates, pillars, ornate railings and lighting etc.
- 1.80 Single turbines are common across this RLCA and are prominently sited on valley sides, and readily visible from adjacent roads. The variety of styles and heights adds to the visual clutter. Their prominence in the elevated landscape links them cumulatively with the existing prominent skyline windfarms at Curryfree, Carrickatane, SlieveKirk and Eglis. All are visually significant in long distance views across this RLCA and transboundary views of Co. Donegal windfarms add to the impact.
- 1.81 The PPS18 SPG considers RLCA 8 to possess a range of landscape sensitivity to future wind development. Not surprisingly, the rising lands and elevated peaks of the Sperrin foothills and Sperrin Mountains are considered to be of highest sensitivity. Future consideration is needed to avoid adverse impacts to skylines, views visual amenity, recreational value and the wild character of this RLCA.
- 1.82 Elsewhere it is considered that other landscapes within this RLCA are more suitable for wind energy development. Parts of the landscape around Loughermore Hills in the extreme west of the District are also considered suitable, given the large scale, rounded summits and extensive upland forestry.
- 1.83 The Woodland Trust community planted woods along the Faughan valley at Killaloo, Brackfield and the Oaks will continue to establish during the plan period. This should develop into a developing landscape feature adjacent to the A6 and will further enhance the well wooded nature of this location. The maturing woodland will be an attractive addition alongside the proposed A6 infrastructural improvements. Learmount Forest is a significant forestry feature and amenity resource within the North Sperrins Hills and Valleys RCLA.
- 1.84 The proposed A6 infrastructural upgrade is likely to have a significant long term impact as it cuts across this RLCA. Construction work has recently commenced, outside of this District, on the Dungiven bypass section of the A6 upgrade. In due course, construction work will significantly make its mark, within this District, across the North Sperrins Hills and Valleys. Initial work on the A6 approaches to Derry in

2018 was restricted to roadside tree felling / hedge removal. Effects will be greatest on the landscape where the proposed new road line deviates from the current well established route. While the associated planting will eventually soften the impact of the A6 upgrades, such mitigation is not likely to be felt for several years.

- 1.85 Ongoing sand and gravel extraction in this RLCA, while an important economic activity, has significant implications for landscape, particularly within the Sperrins AONB boundaries. Significant glacial deposits form important landscape terraces, many prominent in views across the valleys in the Claudy and Donemana. Such extraction can easily and quickly remove these noteworthy features to the detriment of the local landscape and the AONB and often leave highly visible and long lasting scars in the landscape. Such sites can often become the focus for illegal dumping activities and potential sources of pollution.
- 1.86 To a lesser degree, hard rock quarrying takes place across at a number of locations across this RLCA. Those quarries in a valley location tend to be relatively screened in terms of visual impact, but access roads, noise, dust and associated infrastructure can all negatively impact on the immediate character and tranquillity. Those quarries in upland areas, along peaks are much more readily apparent in longer views, especially from elevated and adjacent roads. Such sites, where activity has currently stopped, often have their impact compounded by the presence of rusting and decaying quarry buildings and equipment.
- 1.87 The future landscape impact of all types of existing quarries, and the need for new sites, within this RLCA could increase if the proposed major road infrastructural improvements along the A2, A5 & A6 are implemented.
- 1.88 Climate change impacts that may impact on this RLCA during the lifetime of this LDP could include;
 - Increase conifer plantation coverage as warmer wetter conditions offer enhanced growing conditions;
 - Vernacular infrastructure - integrity of traditionally designed local bridges etc. could be at risk to future extreme flooding occurrences;
 - Future flooding with associated landscape erosion and loss of agricultural lands in the riverside glacial sands and gravels complexes contained within the main valleys;
 - Continuing pressure for renewables development;
 - Increased possibility for enhanced flood protection / inundation measures – valley / riverside tree planting to alleviate future flood flows.
 - Potential for increased production of Short Rotation Crops (SRCs) for Biomass production and associated landscape changes during growth / felling.

- 1.89 **LCA 27 – Foyle Valley:** The alluvial plain and steep valley sides on the western margins of the Sperrin Foothills and Sperrin Mountains are very sensitive to change, not only because of their complex and varied character, but because they form a backdrop to views along the valley. They are a key part of the landscape setting of the mountains as well as the towns of Strabane and Newtownstewart. The western edge of the valley south of Strabane (where this lies in Northern Ireland) has less landscape and visual constraints to wind energy development.

Overall Sensitivity - High to medium

Location, siting, layout and design considerations

- 1.90 This LCA has relatively high sensitivity. The western edge of the valley south of Strabane would be the most suitable location for some form of wind energy development. It is recommended that wind energy developments reflect the complexity and sensitivity of the landscape setting and the relatively small landform scale. Within this LCA care should be taken to avoid adverse impacts on the settings of Derry, Strabane and Newtownstewart. Care should also be taken to avoid detrimental visual impacts on the Sperrins and the A5 tourist route. The settings of important natural and cultural heritage features (eg Sion Mills Conservation Area) should be respected as should important skylines and settings within the valley.

- 1.91 Based on the findings of the Development Pressure Analysis, there have been 32 planning approvals and 8 refusals in this LCA over the period of 2002 to 2017-18 Q3. During this same period of time, there have been no wind farm applications. This is according to LPS data, SONI and ortho photography inspection. Hence there are growing cumulative and transboundary impacts that require consideration.

- 1.92 **LCA 29 – Sperrin Mountains:** This LCA lies at the heart of the Sperrins. The scale and landform of at least parts of the area are in theory well-suited to wind energy development. However, this is generally outweighed by the sheer visual prominence of the Sperrin Mountains over a wide area of Northern Ireland. This is an iconic landscape of immense appeal for tourism and recreation; its core landscapes are highly sensitive to any wind energy development. In addition, it has a strong wild character and many natural and cultural features that are highly vulnerable to the introduction of wind turbines and associated access tracks and infrastructure. Hence the majority of this landscape is highly sensitive to wind energy development, notwithstanding the presence of existing and consented wind farms.

Overall Sensitivity - High

Location, siting, layout and design considerations

- 1.93 Owenreagh, in the west of this LCA, is the specific area in this LCA that is most suited to wind energy development. Consideration could be given to siting turbines on hill flanks where they might be seen against a backdrop of land. Care should be taken to avoid adverse impacts on skylines, views and the visual amenity,

recreational value and wild character of this LCA. Open exposed slopes and ridgelines should be respected as should natural and cultural heritage landscape interests. Care should be taken to ensure that wind energy developments do not dominate and flatten this topographically complex landscape. Based on the findings of the Development Pressure Analysis, there have been 21 planning approvals and 14 refusals in this LCA during the period of 2002 to 2017-18 Q3. During this period, there has been one planning approval granted for a wind farm. There are currently 4 operational single turbines and 1 operational wind farm comprising 16 turbines. This is according to LPS data, SONI and ortho photography inspections. Subsequently, there are three consented wind farms within 18 to 25km to the west in County Donegal. Hence there are growing cumulative/transboundary impacts in this LCA.

- 1.94 **LCA 30 – Sperrin Foothills:** Theoretically the simple, convex forms of some of the hills in this LCA are suited to wind energy development, and the widespread tree cover could provide screening. However the relatively small size of the hills, the intimate character of the adjoining valleys, the small scale field patterns on the hill slopes, and the many sudden, short range views tend to increase landscape sensitivity to wind energy development. A further constraint is the fact that the LCA forms a foreground to some of the most important views of the Sperrins: hence any wind energy development on this northern fringe of the Sperrins could have widespread and significant impacts on landscape character and visual amenity. The north-eastern and north-western fringes of the LCA might be of slightly lower sensitivity.
Overall Sensitivity – High

- 1.95 **Location, siting, layout and design considerations**
This LCA has a diverse, often intimate character and intrinsically high scenic quality. The areas most suitable for some form of wind energy development are on the north-eastern fringes of the LCA (north of the A6) and on outlying hills north-west of Slievekirk. It is recommended that wind energy developments reflect the fact that turbines may be seen in very close juxtaposition with small scale field patterns and landscape features. Care should be taken to avoid adverse impacts on the highly sensitive prominent ridgelines such as those around Slievekirk or in views to the Sperrin Mountains (notably from the B74 and A6) as development in these locations could dominate the landscape. Care should also be taken to avoid adverse impacts on the setting of Learmount Castle, Dunnamanagh and Claudy and visual impacts on the Sperrins and the A5 tourist route. The settings of important natural and cultural heritage features should be respected.

- 1.95 Based on the findings of the Development Pressure Analysis, there are currently 58 planning approvals and 27 refusals for single wind turbines during the period from 2002 to 2017-18 Q3. During the same time period, there have been 7 wind farm

approvals in this LCA. There are currently 4 operational wind farms in this LCA comprising of 32 wind turbines and 6 single turbines. This is according to LPS data, SONI and ortho photography inspection. If any further wind energy developments were to be proposed in the area between these sites the issue of cumulative impacts would be a significant consideration. It is recommended that wind energy developments are visually well separated from each other and from existing development in adjoining LCAs.

- 1.96 **LCA 31 – Burngibbah & Drumahoe:** This LCA is generally very sensitive to wind energy development due to its strong form and field patterns extending high up the valley sides, its wide visibility, particularly from the south and west, and its proximity to the city of Derry. Its open summits and ridges are distinctive and characteristic landscape features; development on these summits could interrupt and diminish these characteristic skylines. The northern part is more degraded with pylons and former mineral workings so is somewhat less sensitive in that respect, intact character that would be highly sensitive to wind energy development. although also more heavily settled. The southern part retains a remote, unspoilt
Overall Sensitivity - High to medium

1.97 **Location, siting, layout and design considerations**

The northern part of this LCA, which has more rounded landform and a more degraded character, is more suitable for wind energy development than other locations in this LCA. Consideration could be given to setting turbines well back from the steep valley sides to reduce their prominence and to help contain visibility. It is recommended that wind energy development reflects the limited height of the hills and the importance of this area as part of the approaches to and setting of the Foyle estuary and Derry. Care should be taken to avoid adverse impacts on the more dramatic and scenic southern part of this LCA. Open skylines should be respected. Based on the findings of the Development Pressure Analysis, there have been 20 planning approvals granted and 6 planning refusals over the time period from 2002 to 2017-18 Q3. Over the same period, there have been no applications submitted for wind farms. There are currently 3 operational single turbines in this LCA, this is according to data obtained from LPS, SONI and ortho-photography inspection. There might also be transboundary issues if wind farm development occurs west of the Foyle in County Donegal. There might also be transboundary issues if wind farm development occurs west of the Foyle in County Donegal.

- 1.98 **33 – Lough Foyle Alluvial Plain** - This LCA is of varied sensitivity to wind energy development. In the west the strongly industrial character with many large industrial structures suggests lower than average levels of sensitivity, especially given the presence of existing screening woodland along the A2. Further east, however, the low-lying, open farmland and coastal land is very sensitive, not least as any wind energy development could intrude upon iconic views to Binevenagh headland. Moreover, the ecological resources of this area are very significant with extensive mud flats and internationally important waterfowl present on Lough Foyle.

Overall Sensitivity - High to medium

1.99 Location, siting, layout and design considerations

The part of the LCA with most potential for some form of wind energy development is the industrial area north of Derry at the western end of the LCA, given careful attention to siting, scale and form relative to existing structures. The very open, exposed and low-lying coastal plain might also be able to accommodate some turbine development if it is very carefully sited and scaled in association with buildings and trees. Wind energy development would be less appropriate at the eastern side of this LCA. Care should be taken to avoid significant impacts on views to Binevenagh. Based on the findings of the Development Pressure Analysis, there has been one single turbine approved over the period of 2002 to 2017-18 Q3 and over the same period, there have been no planning applications submitted for wind farms. There are no operational turbines within this LCA. Seaward impacts may be a relevant issue in the future.

1.100 34 – Loughermore Hills - Much of this landscape is of low sensitivity and well-suited to wind energy development, having large scale, rounded, convex summits; simple, relatively homogeneous landcover; extensive upland forestry; and other man-made influences. The broad, central massif of the eastern part of the LCA, centred on Loughermore, is of lowest sensitivity to wind energy development. The lower margins of the upland, and some of the land further west which has a more distinctive landform, are of medium sensitivity. This is because these areas are more widely visible, and have a wider range of natural, cultural and amenity interests.

Overall Sensitivity - Medium to low

Location, siting, layout and design considerations

1.101 The large scale and horizontal form of this LCA indicates that parts of this LCA are well suited to wind energy development. The landscapes around Loughermore in the eastern part of the LCA are the most suited area to wind energy development. The creation of a large compact cluster of turbines, (possibly through expansion of the existing Altahullion wind farm), is likely to be the most successful solution in landscape and visual terms for this LCA, and would help minimise cumulative impacts on surrounding areas.

1.102 Consistent site layouts and turbine sizes and designs would be desirable within the cluster. It is recommended that attempts be made to minimise visual clutter where turbines would be seen in the context of electricity transmission lines. Consideration could be given to utilising forestry plantations for screening and access tracks.

1.103 However, open views to Loughermore summit itself from the north-east should be respected. The lower margins of the upland and land to the west, particularly the more prominent outlier hills, are less suited to wind energy development. The north side of the upland area might also be more sensitive because of views from Lough

Foyle. Care needs to be taken to avoid adverse impacts on skylines, particularly near the A6 and on the natural, cultural and recreational landscape interests in this LCA. Based on the findings from the Development Pressure Analysis, there have been 16 applications approved and 6 refused for single turbines during the period from 2002 to 2017-18 Q3. During this time period, there has also been one approval and one refusal for wind farms in this LCA. There is currently one operational wind farm comprising 4 turbines and 2 single turbines in this LCA. This is according to data obtained from LPS, SONI and ortho-photography inspection.

- 1.104 Hence there is potential for cumulative impacts. There is also some potential for transboundary impacts due to several existing and proposed wind farms on the southeastern edge of Inishowen in County Donegal. Adequate separation distances will be an issue. Ideally any additional wind energy development in this LCA would lie outside the zone of visual influence of these developments.

**RCLA 9 - PPS18 SPG Wind Energy Development Consideration:
(RCLA 9 encompasses, all or in part, LCA 31, 32 33 & 34)**

Lough Foyle Coast & Dunes – RLCA 9

- 1.105 **Summary** - The unique coastal flats fronting Lough Foyle include Magilligan Point and the reclaimed 'polders' around the lough shore. This area is defined by the lough and the backdrop of the Inishowen peninsula to the north, and by the Binevenagh Ridge which rises to the east forming an essential relationship recognised by AONB designation. A predominance of arable land makes this area stand out, as well as its use as a key route along the north coast. Within our District, the 19th Century sea wall and farm tracks associated with the reclaimed lands act as a recreational resource.
- 1.106 The area is characterised by the extremely flat alluvial plain on the edge of Lough Foyle. Towards the west, closer to the city, the Foyle Valley becomes more prominent in the landscape. The area is tied to and is of economic and power generation importance to the city with multiple industrial sites, Lisahally Port, Coolkeeragh and the City of Derry Airport around the settlements of Maydown, Strathfoyle and Eglinton respectively. The dramatic shoreline railway line runs the length of the coastline to the city providing rail travel to Coleraine and Belfast. In this open setting, the careful consideration of future development location or industrial expansion will be key.
- 1.107 Development pressure for rural dwellings has been comparably modest over the last 15 years. The most prominent hotspot clusters occurs to the north of the A2 along the Donneybrewer Rd and the Station Rd to the west. Both of these roads are traditionally quiet in terms of volume of daily traffic. Station Rd has further benefitted from now being detached by the A2 Clooney Rd upgrade and re-alignment works. Such development pressure has mostly been for infill possibilities or farm related dwellings. Depending on the level of surrounding screening from

vegetation or other structures, such development in an open landscape has the potential to be cumulatively intrusive. The coastal location with stunning lough views, particularly from the higher ground to the south of this RLCA, and the proximity of the A2 make this a potentially attractive place to live.

1.108 More recently, two model scale, social housing developments have been approved in the countryside to the north and west of Eglinton. Development has recently started on the scheme along Coolafinny Rd. The landscape effects of this scheme are yet to be fully felt, but both schemes are likely to blur the distinction between the developed form of Eglinton village and the surrounding countryside and intrude a degree of suburbanisation into this flat, open landscape.

1.108 Wind energy development has been minimal in this RLCA and are restricted to single turbines in Culmore and Ballyarnett. The potential for wind energy development in this RLCA is restricted due to restrictions in place around the City of Derry Airport to protect aircraft and their Line of Approach onto the runways. While the SPG considers there is potential for some turbine development on the flatter coastal plain around Campsie / Maydown, if it was very carefully sited and scaled, it is highly likely that the potential for such development will continue to be similarly restricted in the future.

1.109 The A2 dualling upgrade from Maydown to Derry was completed in 2011 and while still a very visible feature running through this RLCA, is beginning to soften in terms of its landscape setting. Maturing roadside planting is lessening the impact of the prominent roadside infrastructure, particularly around the new road junctions.

1.110 Climate change impacts that may impact on this RLCA during the lifetime of this LDP could include;

- Infrastructure - integrity of transport links – road / air and rail could be at risk to future storm flooding occurrences / coastal flooding;
- Future coastal flooding with associated coastal erosion and loss of low lying agricultural lands.
- Increased possibility for enhanced flood protection / inundation measures – along River Faughan to alleviate future flood flows.
- Managed retreat / loss of coastal landscape / habitat to prepare as future coastal / river flood inundation areas

Potential for increased production of Short Rotation Crops (SRCs) for Biomass production and associated landscape changes during growth / felling.

Renewable Energy and Further Capacity in our District

1.111 The aim of the LDP's renewable energy policies are to facilitate the siting of renewable energy generating facilities in appropriate locations within the built and

natural environment to contribute to Northern Ireland’s renewable energy targets and to realise the benefits of renewable energy.

1.112 In relation to wind energy development, the siting of such development can often be contentious. Landscape sensitivity to wind energy development is the extent to which the inherent character and visual amenity of a landscape are vulnerable to change due to wind energy development.

1.113 Landscape sensitivity to wind energy development depends on many factors. Each landscape has its own sensitivities, depending on its landform and landcover as well as on a range of other characteristics and values including, for example, enclosure, visibility, condition, scenic and perceptual qualities, natural and cultural heritage features and cultural associations. Importantly, sensitivity depends on landscape character as well as on landscape values.

1.114 It should be noted that within many of our LCAs there is considerable variation in sensitivity level across the area, reflecting the fact that the LCAs are broad character or identity areas. The overall sensitivity level of a LCA is indicative of the relative overall sensitivity of each LCA. A high sensitivity level does not necessarily mean that there is likely to be no capacity for wind energy development within the LCA and conversely a low sensitivity level does not mean that there are no constraints to development.

1.115 **LCA 31 – Burngibbah & Drumahoe:** This LCA is generally very sensitive to wind energy development due to its strong form and field patterns extending high up the valley sides, its wide visibility, particularly from the south and west, and its proximity to the city of Derry. Its open summits and ridges are distinctive and characteristic landscape features; development on these summits could interrupt and diminish these characteristic skylines. The northern part is more degraded with pylons and former mineral workings so is somewhat less sensitive in that respect, although also more heavily settled. The southern part retains a remote, unspoilt intact character that would be highly sensitive to wind energy development.

Overall Sensitivity - High to medium

Location, siting, layout and design considerations

1.118 The northern part of this LCA, which has more rounded landform and a more degraded character, is more suitable for wind energy development than other locations in this LCA. Consideration could be given to setting turbines well back from the steep valley sides to reduce their prominence and to help contain visibility. It is recommended that wind energy development reflects the limited height of the hills and the importance of this area as part of the approaches to and setting of the Foyle estuary and Derry. Care should be taken to avoid adverse impacts on the more dramatic and scenic southern part of this LCA. Open skylines should be respected. Based on the findings of the Development Pressure Analysis, there have been 20 planning approvals granted and 6 planning refusals over the time period

from 2002 to 2017-18 Q3. Over the same period, there have been no applications submitted for wind farms. There are currently 3 operational single turbines in this LCA, this is according to data obtained from LPS, SONI and ortho-photography inspection. There might also be transboundary issues if wind farm development occurs west of the Foyle in County Donegal. There might also be transboundary issues if wind farm development occurs west of the Foyle in County Donegal.

- 1.119 **32 – Derry Slopes** - This LCA's gateway role and proximity to the historic city of Derry and the Foyle increases its sensitivity to wind energy development, which could be highly visible. These western slopes frame the city and provide a scenic landscape setting. The River Foyle waterside and the area's many small historic parks and estates are also highly sensitive. However, the undulating slopes and urban fringe areas, particularly where already affected by man-made influences, might be somewhat less sensitive to development that is carefully sited and appropriate in scale.
Overall Sensitivity - High to medium

Location, siting, layout and design considerations

- 1.120 The undulating lower slopes in the southern part of this LCA are least sensitive to wind energy development. Consideration could be given to siting on mid-slope locations, particularly where topography could offer some screening. Care should be taken in relation to access roads which could be highly visible from across the river. Developed areas such as urban fringe industrial estates may also offer some opportunities for turbine development.
- 1.121 It is recommended that any wind energy development reflects the scale of the relatively small surrounding hills and existing built features that lend a sense of scale in this LCA. Care should be taken to avoid adverse impacts on the highly sensitive historic setting of Derry, its surrounding steep slopes and skylines, the River Foyle and its adjacent lands, and estates and estate woodlands. Although Holywell and Minkey Hills have a number of telecommunications masts, care should be taken to avoid adverse impacts on these hills as they are on a prominent skyline. Care should be taken to ensure that wind energy developments do not dominate or intrude unacceptably on the sensitive settings in this LCA. Based on the findings of the Development Pressure Analysis, there have been 5 planning approvals granted along with three planning refusals over a time period from 2002 to 2017-18 Q3. Over this same period, there have been no applications for wind farms. There are currently no operational wind farms or single turbines in this LCA according to data obtained from LPS, SONI and ortho-photography inspection. Transboundary issues might arise as this LCA shares a border with County Donegal.
- 1.123 **33 – Lough Foyle Alluvial Plain** - This LCA is of varied sensitivity to wind energy development. In the west the strongly industrial character with many large industrial structures suggests lower than average levels of sensitivity, especially given the presence of existing screening woodland along the A2. Further east, however, the

low-lying, open farmland and coastal land is very sensitive, not least as any wind energy development could intrude upon iconic views to Binevenagh headland. Moreover, the ecological resources of this area are very significant with extensive mud flats and internationally important waterfowl present on Lough Foyle.
Overall Sensitivity - High to medium

1.124 **Location, siting, layout and design considerations**

The part of the LCA with most potential for some form of wind energy development is the industrial area north of Derry at the western end of the LCA, given careful attention to siting, scale and form relative to existing structures. The very open, exposed and low-lying coastal plain might also be able to accommodate some turbine development if it is very carefully sited and scaled in association with buildings and trees. Wind energy development would be less appropriate at the eastern side of this LCA. Care should be taken to avoid significant impacts on views to Binevenagh. Based on the findings of the Development Pressure Analysis, there has been one single turbine approved over the period of 2002 to 2017-18 Q3 and over the same period, there have been no planning applications submitted for wind farms. There are no operational turbines within this LCA. Seaward impacts may be a relevant issue in the future.

- 1.125 **34 – Loughermore Hills** - Much of this landscape is of low sensitivity and well-suited to wind energy development, having large scale, rounded, convex summits; simple, relatively homogeneous landcover; extensive upland forestry; and other man-made influences. The broad, central massif of the eastern part of the LCA, centred on Loughermore, is of lowest sensitivity to wind energy development. The lower margins of the upland, and some of the land further west which has a more distinctive landform, are of medium sensitivity. This is because these areas are more widely visible, and have a wider range of natural, cultural and amenity interests.
Overall Sensitivity - Medium to low

1.126 **Location, siting, layout and design considerations**

The large scale and horizontal form of this LCA indicates that parts of this LCA are well suited to wind energy development. The landscapes around Loughermore in the eastern part of the LCA are the most suited area to wind energy development. The creation of a large compact cluster of turbines, (possibly through expansion of the existing Altahullion wind farm), is likely to be the most successful solution in landscape and visual terms for this LCA, and would help minimise cumulative impacts on surrounding areas.

- 1.127 Consistent site layouts and turbine sizes and designs would be desirable within the cluster. It is recommended that attempts be made to minimise visual clutter where turbines would be seen in the context of electricity transmission lines. Consideration could be given to utilising forestry plantations for screening and access tracks.

- 1.128 However, open views to Loughermore summit itself from the north-east should be respected. The lower margins of the upland and land to the west, particularly the more prominent outlier hills, are less suited to wind energy development. The north side of the upland area might also be more sensitive because of views from Lough Foyle. Care needs to be taken to avoid adverse impacts on skylines, particularly near the A6 and on the natural, cultural and recreational landscape interests in this LCA. Based on the findings from the Development Pressure Analysis, there have been 16 applications approved and 6 refused for single turbines during the period from 2002 to 2017-18 Q3. During this time period, there has also been one approval and one refusal for wind farms in this LCA. There is currently one operational wind farm comprising 4 turbines and 2 single turbines in this LCA. This is according to data obtained from LPS, SONI and ortho-photography inspection.
- 1.129 Hence there is potential for cumulative impacts. There is also some potential for transboundary impacts due to several existing and proposed wind farms on the southeastern edge of Inishowen in County Donegal. Adequate separation distances will be an issue. Ideally any additional wind energy development in this LCA would lie outside the zone of visual influence of these developments.