

DERRY CITY AND STRABANE DISTRICT COUNCIL

LOCAL DEVELOPMENT PLAN (LDP) 2032



EVIDENCE BASE EVB 14

RENEWABLE ENERGY

(Updated May 2017)

This Document is one in a series, which builds up to form the 'evidence base' that informs the preparation of the Local Development Plan (LDP).

It comprises initial Workshop Paper(s) on this Planning topic that were presented to Council Members during 2016 / 2017, which have been subject to Member discussion and input, before further discussion at the Planning Committee (LDP) and in turn feeding into the LDP Preferred Options Paper (POP) and then the Plan Strategy (PS) and eventually the Local Policies Plan (LPP) which together forms the LDP.

Therefore, the afore-mentioned evidence base will be continually updated, to additionally include the latest information, input from public engagement, statutory consultees, stakeholder groups, Sustainability Appraisal and from other Departments within the Council, including Community Planning.

The Evidence Base is published as a 'supporting document' in accordance with Article 10(a) and 15(a) of the Planning (LDP) Regulations (NI) 2015.



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Appendix 1 Planning History for Hydro-Electric Development in the District

Paper 2: Renewable Energy

Purpose of Paper: The purpose of this paper is to advise Members on the following: an overview of the legislation / policy on the production and promotion of energy from Renewable sources; a summary of the current renewable energy generation in Northern Ireland and a review of renewable energy sources and development within the District. Then to consider how the LDP can utilise designations and policy that encourage the development of a range of renewable sources of energy that is both adaptive to emerging technologies and flexible to protect the built and natural environmental and residential amenity from potential damage.

Content: The paper provides information on:-

- (i) The European and Regional policy context in place to promote renewable sources of energy;
- (ii) A brief overview of current energy and renewable energy consumption in Northern Ireland;
- (iii) A summary of renewable energy development within the District and planning consideration;
- (iv) What should the LDP deliver?

Conclusion: Councillors should note the contents of this paper which will assist the Council in developing an informed and innovative approach to setting clearly defined aims and objectives for its new LDP.

1.0 Introduction to Paper

- 1.1 This Paper is one in a series, building up the ‘evidence base’ that will inform the preparation of the Local Development Plan (LDP). The LDP will have a new approach to working with stakeholders to develop a secure and reliable Renewable Energy Sector.
- 1.2 The discussion and input from Council Members at Workshop 7 will then feed into a forthcoming ‘Options’ Paper on these matters to the Planning Committee (LDP) - for decision, which will in turn feed into the LDP Preferred Options Paper (POP) which is due out in Spring 2017.
- 1.3 The information presented in this paper will assist the Council in developing an informed and innovative approach to setting clearly defined aims and objectives for the further development of renewable sources of energy in the District.
- 1.4 This paper will provide the evidence base information to assist members and officials in considering how the LDP can deliver a range of renewable sources of energy to meet EU and Regional targets. This will enable Members to begin to:
 - Have an understanding of the potential for renewable energy generation in our District.
 - Consider any preferred strategies for encouraging the development of renewable energy - both large scale and micro generation, while protecting the built and natural environment, sensitive landscapes and residential amenity.
 - Consider how the LDP can facilitate growth in the renewable energy sector and emerging renewable technology in line with the Derry and Strabane Draft Economic Development Strategy and forecasts for the manufacturing sector provided by DETI. (please refer to the Economic Paper paras 3.17-3.19)

What is renewable energy and what are the benefits?

- 1.5 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).

- 1.6 As well as assisting in countering the effects of climate change, using 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.

2.0 Legislation and Regional Policy Framework

European 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. This 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 (SEF) (DETI 2010) set new and challenging renewable energy targets for Northern Ireland. The SEF makes it clear that on shore wind will continue to provide the largest proportion of renewable electricity generation in the period to 2020. The SEF states that NI will seek to achieve 40% of electricity consumption from renewable sources by 2020.
- 2.4 Sustainable Energy Action Plan 2012-2015 and beyond aims 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 have been set by the Programme for Government 2011-2015, this requires 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 is 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 No2 of the PFG is to be a society which lives and works sustainably- protecting the environment. This

document is currently in its consultation stage, the full draft Programme for Government Framework 2016 will be published in due course.

- 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.

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 will require 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 will be 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 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 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 renewable energy proposals, including wind turbines, without detriment to the region's cultural and natural heritage assets.

- 2.18 Development that generates energy from renewable 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, 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 particularity 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.

2.22 Overall, while the Council is broadly content with the policy contained within the SPPS, it was felt that there was a need and scope for the LDP to set additional local policy in term of landscape protection and community benefit in relation to wind energy proposals, whilst simultaneously recognising there are other forms of renewable energy development that can be catered within valued landscapes.

Marine Consideration

2.23 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.

2.24 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.

2.25 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 off-shore 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.
- 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 Community Plan.**
The District's Community Plan is expected in Spring 2017, with higher level strategic policies, as well as incorporating existing strategies/proposals for the District.
- 2.41 The new style of LDP provides a unique opportunity for the Council to genuinely shape the district for local communities and will enable them to adopt a joined up approach, incorporating linkages to other functions such as regeneration, local economic development and community planning. 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 – which provides the higher-level strategic aspirations for economic development in the District. It is intended that the LDP will be the spatial reflection of the CP 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.

2.42 **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.

- 2.43 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.

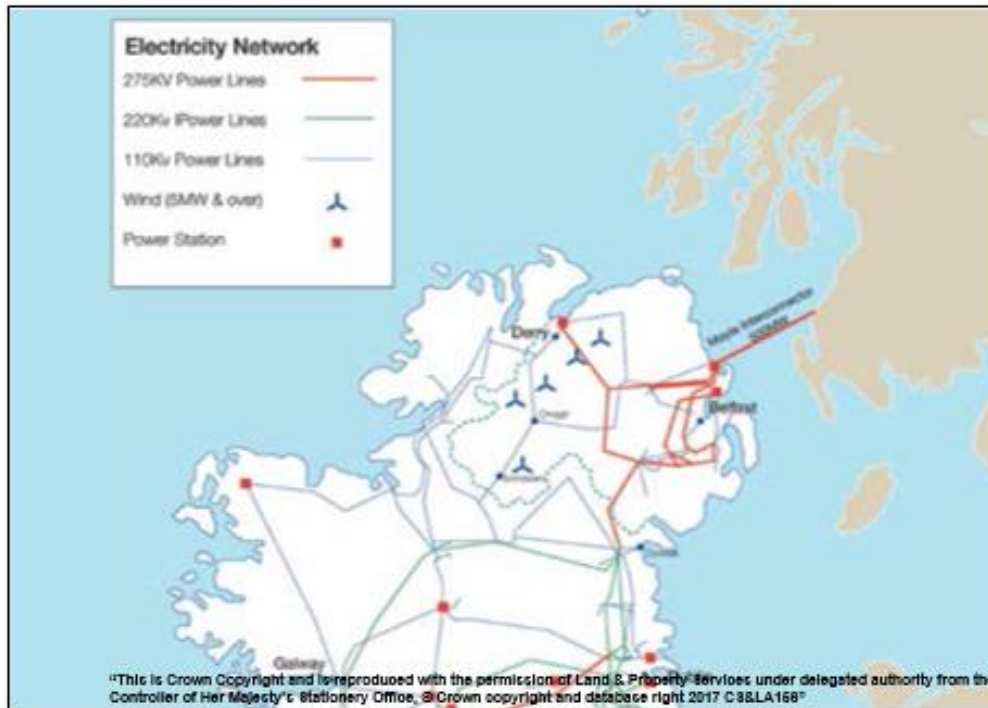
3.0 Locations of Significant Electricity Generation in Northern Ireland

3.1 Northern Ireland has three major fossil-fuel based electricity generating plants:

1. Ballymunford, Islandmagee, Antrim, Closed Cycle Gas Turbine generating 1,300 MW of Electricity (DETI 2016).
2. Coolkeeragh Powerstation Derry, Closed Cycle Gas Turbine generating 460 MW of electricity (DETI 2016).
3. Kilroot Powerstation, Carrickfergus, Antrim Coal/Oil generating 660 MW of electricity.(DETI 2016)

3.2 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).

3.3 Map1 below illustrates the Transmission System Network for Northern Ireland showing the 3 main power stations located at Ballylumford (Islandmagee, Antrim), Kilroot (Carrickfergus) and Coolkeeragh (L'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.



Map 1 The Electricity Network- Framework for Co-operation: Spatial Strategies of Northern Ireland & The Republic of Ireland.¹

Renewable Energy Consumption in Northern Ireland

- 3.4 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 2016. 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 2015-March 2016, 25.4% of total electricity consumption in Northern Ireland was generated from renewable sources located within Northern Ireland. An increase of 6.4% from the previous year.
 - 90.2% of this electricity generated was from wind.

¹ <http://www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/Planning/FileDownload%2C33970%2Cen.pdf>

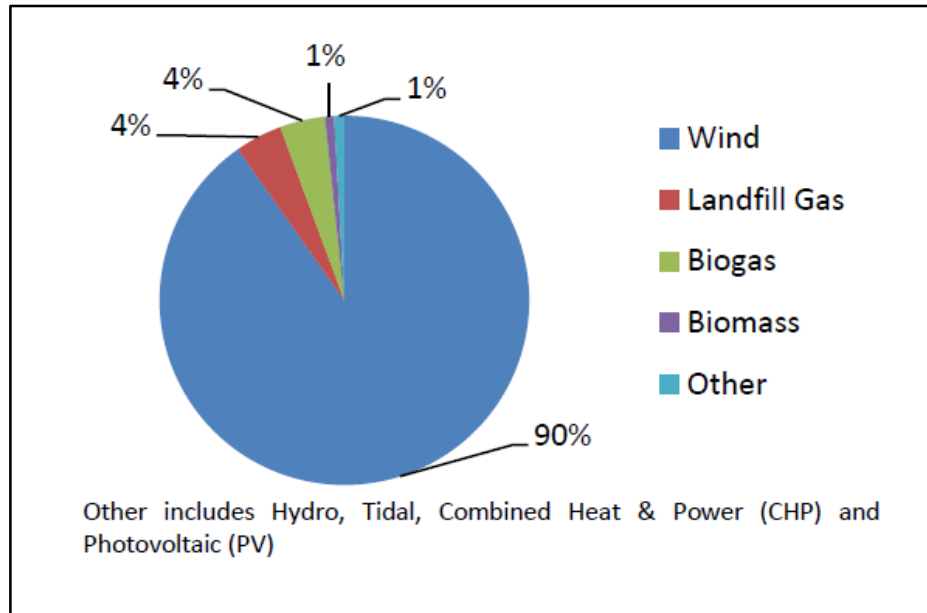


Figure 1: Renewable electricity generation by type of generation (April 2015 to March 2016) (NISRA Electricity Consumption and Renewable Generation in Northern Ireland: Year Ending March 2016.).

3.5 Rolling 12 Month Average

Chart 1 below shows the trend in the percentage of electricity consumption in Northern Ireland from renewable sources. In the 12 month period ending June 2009, some 8.1% of total electricity consumption in Northern Ireland was generated from renewable sources. This proportion has grown considerably with over a quarter (25.4%) of total electricity consumption in Northern Ireland being generated from renewable sources for the 12 month period ending December 2015. This represents a threefold increase in average renewable generation volumes in comparison to the 12 month period ending June 2009. As the chart shows, the PFG target of 20% was exceeded during 2015 and reached a peak of 25.4% for the 12 month period ending December 2015.

3.6 Annual Proportion

Chart 1 below also shows the proportion of total electricity consumption from renewable sources for each calendar year end. After a slight drop in the renewable proportion between 2009 (9.7%) and 2010 (8.4%), electricity generation from renewable sources in Northern Ireland as a percentage of electricity consumption in Northern Ireland has risen steadily to 25.4% in 2015. In particular, there were large rises of around 4 percentage points between 2010 and 2011 (from 8.4% to 12.5%) and between 2012 and 2013 (from 13.6% to 17.3%) and a rise of over 6 percentage points between 2014 and 2015 (19.0% to 25.4%). Such large rises are usually attributable to new renewable generation facilities coming on line and/or increased wind levels during the year.

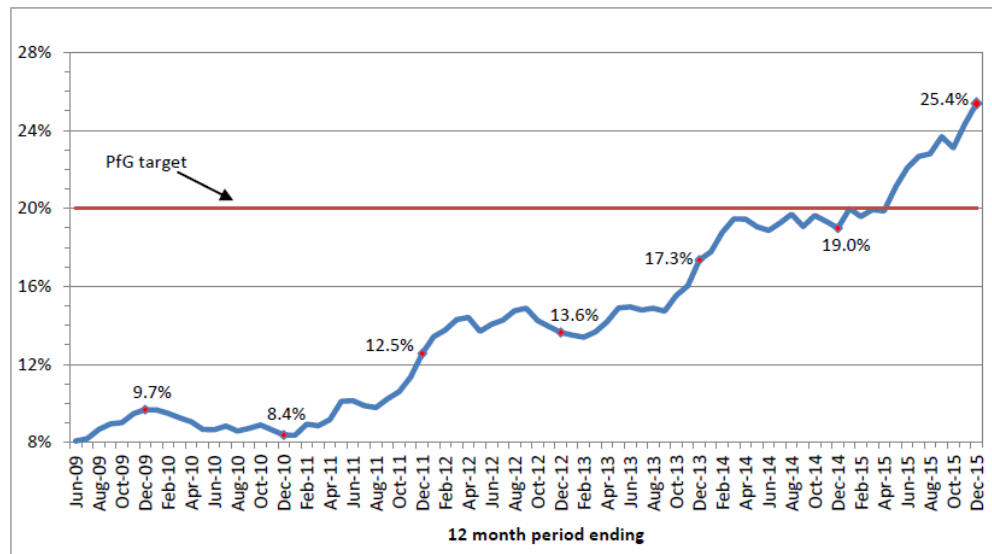


Chart 1: Rolling 12 month Average % Electricity Consumption from Renewable Sources

3.7 Monthly Proportion

The proportion of electricity consumption derived from renewable sources varies markedly from month to month, as shown below in chart 2. For example, in December 2015, generation from renewable sources located in Northern Ireland accounted for almost two fifths (38.2%) of all electricity consumed in Northern Ireland in that month. However, this compares to around 8% in July 2013 and September 2014. Such variation is due to large fluctuations in renewable electricity generation each month, caused mainly by changing weather conditions. Given the reliance on wind generation in Northern Ireland, weather plays an important role in the volume of renewable electricity generation. Other factors, such as new renewable generation facilities coming on line at various points, can also contribute to shifts in the renewable proportion. 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).

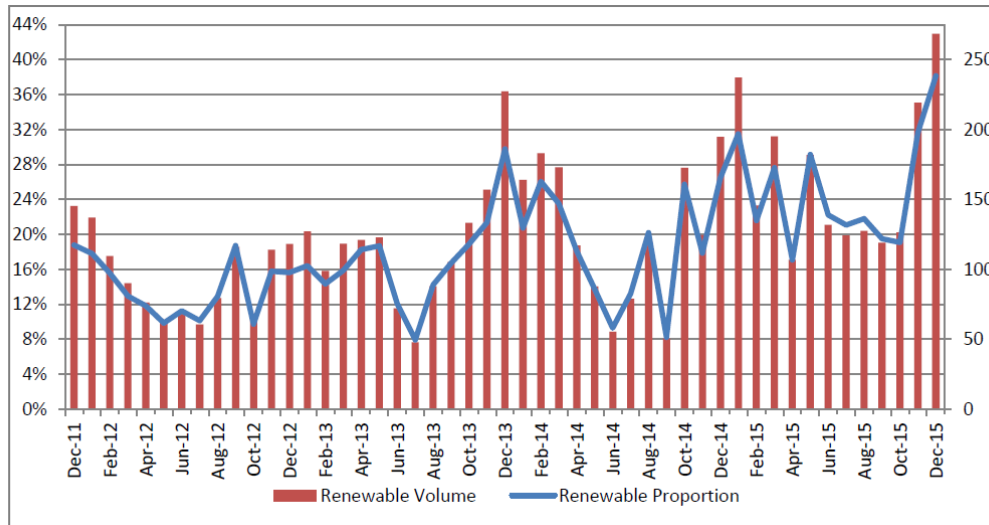


Chart 2: Percentage of Electricity Consumption from Renewable Sources and Renewable Generation Volume (GWh) by month, December 2011 – December 2015 (Source DETI)

3.8 Table 1 below shows that renewable generation and capacity is not shared equally among District Council Areas. Indeed almost two thirds (64%) of generation is accounted for by only four council areas: Strabane (24%), Fermanagh (19%), Omagh (11%) and Limavady (10%). This is perhaps unsurprising given that the majority of the large onshore wind turbines are located in these council areas.

District Council	Number of sites	Capacity (MW)	Generation (MWh)
Antrim	25	9.7	19,907
Ards	5	0.4	530
Armagh	14	3.8	10,616
Ballymena	27	23.0	53,859
Ballymoney	20	48.2	115,813
Banbridge	14	1.5	2,411
Belfast	7	6.0	15,457
Carrickfergus	4	0.5	1,110
Castlereagh	5	0.4	462
Coleraine	15	3.9	15,732
Cookstown	15	2.0	2,780
Craigavon	7	0.9	5,314
Derry	13	36.4	107,119
Down	18	3.4	6,368
Dungannon	23	39.9	82,572
Fermanagh	26	126.1	319,891
Larne	16	1.7	3,539
Limavady	11	106.1	166,630
Lisburn	15	3.4	11,478
Magherafelt	21	3.2	8,142
Moyle	5	0.7	454
Newry & Mourne	13	3.9	19,458
Newtownabbey	10	20.8	62,365
North Down	5	1.6	4,954
Omagh	29	111.1	193,943
Strabane	44	169.8	401,165
Unallocated	12,294	67.5	54,807
Total	12,701	796.0	1,686,875
Unallocated (%)	97%	8%	3%

Table 1 Sub-regional renewable electricity data at end 2014 – ‘old’ 26 district council areas. (Source Department of Energy and Climate Change)

- 3.9 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.²
- 3.10 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.

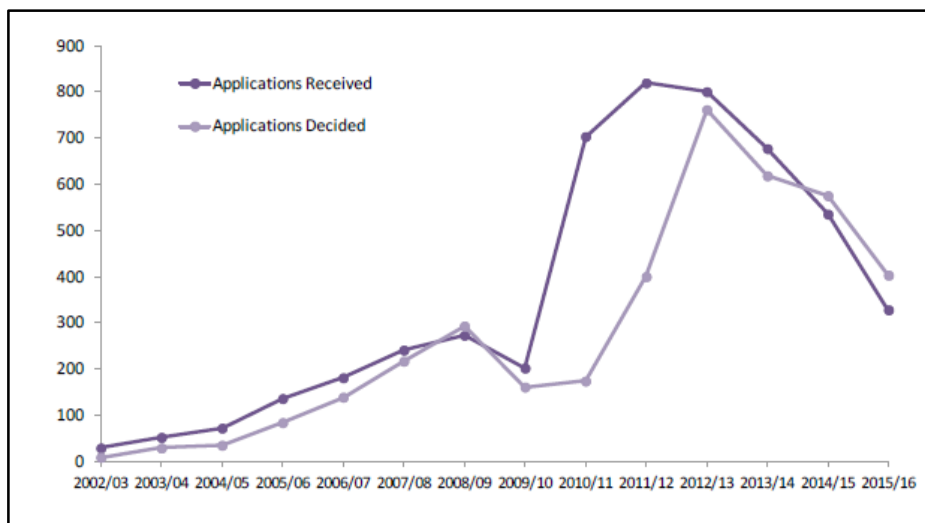


Chart 3 Renewable energy applications annually from 2002/03- 2015/16 (Northern Ireland Planning Statistics 2015/16 Annual Statistical Bulletin April 2015-March 2016) (publication 30th June 2016).

- 3.11 A recent 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 is likely to have a negative impact on the Renewable Energy sector in Northern Ireland and will bring about an overall reduction in the number of planning applications for Wind Energy Development moving forward.

² Northern Ireland Planning statistics 2016/2017 Third Quarterly Statistical Bulletin <https://www.infrastructure-ni.gov.uk/articles/planning-activity-statistics>

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

4.0 Types of Renewable Energy Development in the District

4.1 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%).

4.2 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.

4.3 Wind Energy in the District

At present in the Derry City and Strabane District, there are 17 wind farms which have received planning permission with a further 6 proposals under consideration and 1 under appeal. See Tables 2, 3 and 4 below.

Table 2 Existing and Extant Planning Approval for Wind Farm Development

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

34	J/2005/0211/F	Carrickatane	9	27
28	J/2005/0104/F	Tievenamenta	15	45
56	J/2006/0883/F	Seegronan	16	14
99	A/2009/0868/F	Monnaboy	4	10
79	J/2008/0088/F	Slieveglass	3	6.9
33	A/2005/0223/F	Eglish	6	15
115	A/2011/0202/F	Slieve Kirk (ext)	5	15
86	J/2008/0240/F	Meenakeeran	4	12
145	A/2014/0630/F	Ballyhanedin	8	24

Local Development Plan Team Derry City and Strabane District Council May 2017.

Table 3 Current applications for wind farm development

Current Applications				
Nos	Reference	Name	No. of Turbines	Capacity (MW)
70	J/2007/0667/F	Gronan	4	9.2
102	J/2010/0481/F	Craignagapple	9	20.7
107	J/2011/0082/F	Crighshane Ext	5	11.5
122	A/2012/0401/F	Barr Cregg	7	17.5
133	J/2013/0183/F	Church Hill Ext.	1	2.3
138	J/2013/0287/F	Meenamullan	5	12.5
145	A/2014/0630/F	Ballyhanendin	8	24

Local Development Plan Team Derry City and Strabane District Council May 2017.

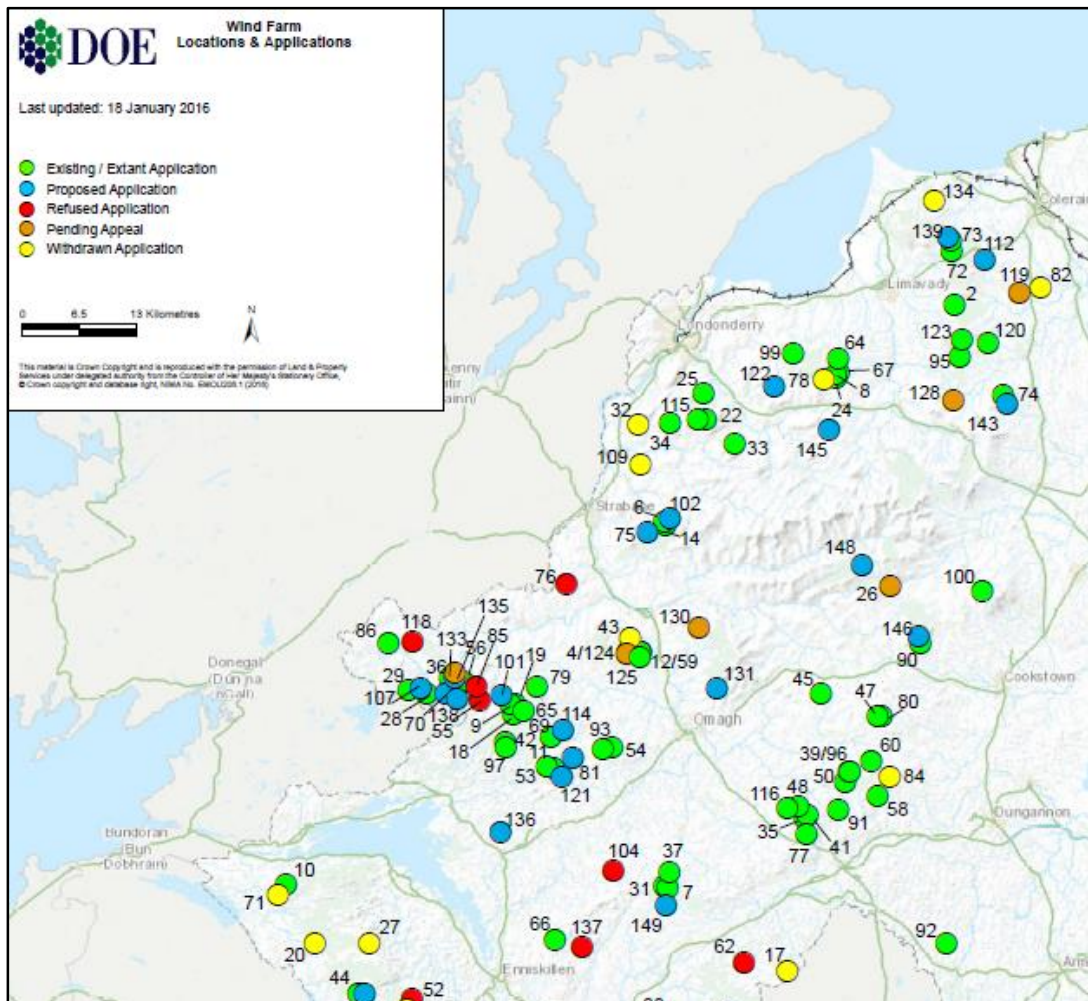
Table 4 Applications under appeal for wind farm development

Application Under Appeal				
Nos	Reference	Name	No. of Turbines	Capacity (MW)
122	A/2012/0401/F	Barr Cregg	7	17.5

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- 4.4 Map 2 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.

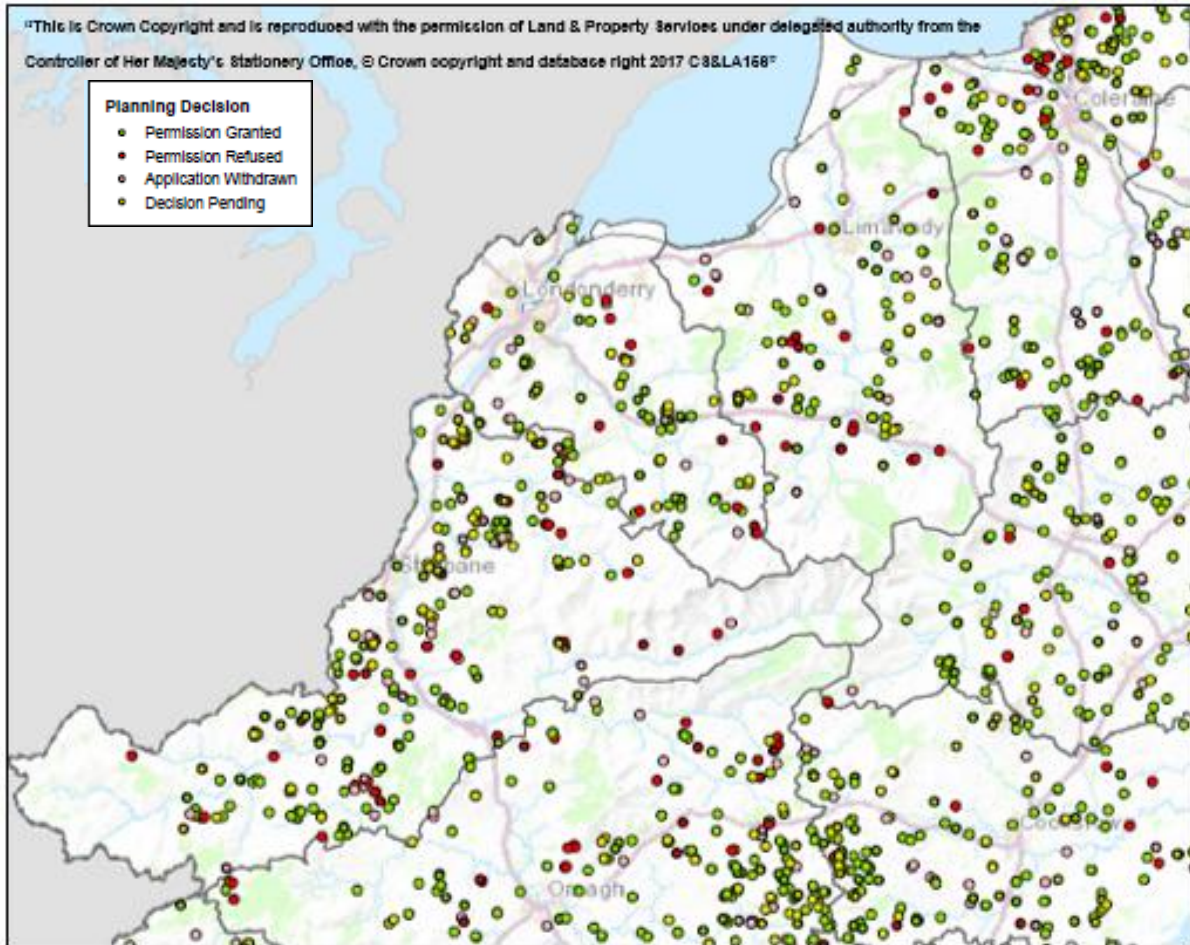


Map 2 Wind Farm map (Source DFI 2016).

4.5 Applications for Single Wind turbines in the District

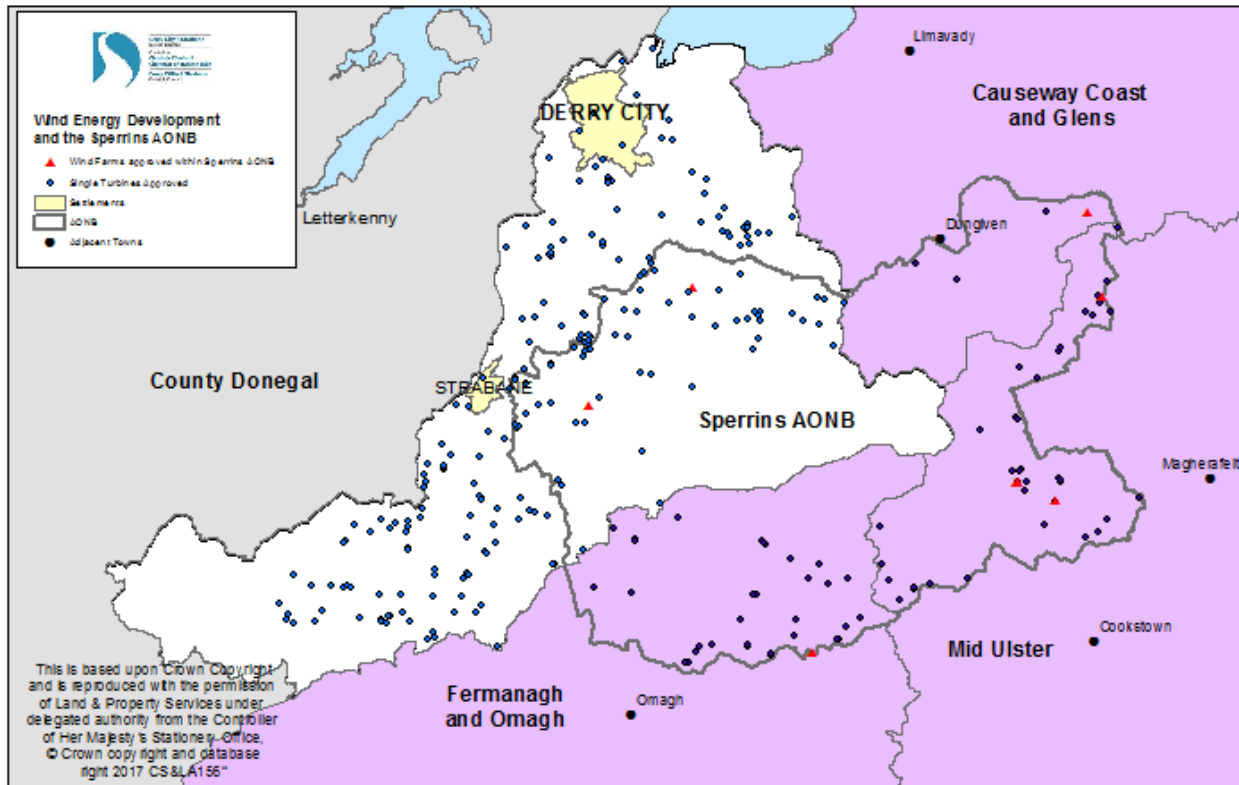
In 2014/15 in the Strabane district, 22 applications were received of which 12 were decided with 5 approvals. In the Derry District, 14 applications were received of which 10 were decided with 5 approvals. While in 2013-2014, in the Strabane District, 29 applications were received of which 35 applications were decided with 28 approvals. In the Derry District, 12 applications were received of which 17 applications were decided - with 17 approvals.

4.6 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 3 Planning Applications for Single Wind Turbines April 2002- 2015 (DFI renewable statistics 2016)

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 (DFI2016)

- 4.7 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.
- 4.8 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.³

- 4.9 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.
- 4.10 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

- 4.11 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.
- 4.12 Emissions and waste products from biomass energy production include airborne emissions, emissions to watercourses and ash.
- 4.13 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;
 - Traffic to and from the site in order to transport biomass fuel and subsequent by-products; and
 - Odour.

³ The Wind Power Debate DOE Analytical Services Branch.

4.14 **Biomass Energy in the District**

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 bio degradable 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.

4.15 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 a 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.

4.16 **Heat**

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.

4.17 **Solar**

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 free standing 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 farm i.e grid connection and road access.

4.18 **Planning Consideration for small scale Heat and Solar PV**

Small scale PV and ground and air heat pumps are particularly well suited to small scale domestic installation as they are clean and silent operators.

4.19 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.

4.20 **Solar PV in our District**

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.

4.21 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.

4.22 **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.

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

4.24 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,

4.25 **Planning Considerations with Hydro power**

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

4.26 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 hydro power 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 in 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.

4.27 **Hydro Power in our District**

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

4.28 Appendix 2 details the planning history of Hydro-electric energy developments within the District.

4.29 **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.

4.30 **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.

5.0 Conclusions

What should the LDP deliver?

- 5.1 Northern Ireland has 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. Wind energy provides the greatest contribution toward renewable energy consumption but as a knock-on effect of the announcement of closure of the ROC scheme, wind farm and single turbine planning applications have significantly declined in numbers. Council must consider the strategy it wants to take regarding promoting wind energy development, or whether it should be allowed to decline with a new focus on other sources of renewable energy generation. 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 (a later paper will consider Coastal Development in accordance with the Marine Plan – of which wave and wind turbines will be an important potential).
 5. Adopt proactive policies taking account of future technology development eg solar farms, hydro or biomass and their related infrastructure.

Recommendation

- 5.2 The paper has 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.
- 5.3 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, Council must 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 must strike a balance between encouraging the development of a range of renewable energies while protecting the environment and residential amenity from inappropriate development.
- 5.4 Policies in the LDP must therefore be flexible and responsive to developing technology and government incentives.

Member input is invited.

6.0 Preferred Option For Renewable Energy

The research findings contained in this paper together with Members views and advice from the relevant parties/consultees have informed the following options which have been 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

- 6.1 In the absence of firm proposals from the relevant authorities, further feedback will be required to enable the LDP to be fully informed of future proposals which can subsequently be subjected to the SA/SE appraisal.

Appendix 1

Planning Applications for Hydro-electric development in the District

Application Ref	Address	Description	Status
J/2007/0072/F	190m south east of 26 Letterbratt Road, Plumbridge	Hydro electric 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 pipe line and underground hydro electric 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 hydro electric powerhouse.	Granted
J/2011/0193/F	100m due North of 11 Grove Road Castledearg	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 hydro-electric turbine including fish pass, modifications to existing intake, alterations to existing mill race and construction of a new turbine house.	Under consideration
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 weir, restored mill race and installation of a fish friendly archimedes screw turbine. Capacity 109 KW.	Under Consideration
A/2011/0246/F	Lands at Ardmore mill complex Bleach Green, Green Road Ardmore	Proposed redevelopment of hydro-electric 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.	Under Consideration
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.	Under Consideration
J/2012/0087/F	Turbine House 150m NW Of 44 Lettercran Road Castledearg. Intake Structure 800m Due South Of 41 Lettercarn Road Castledearg	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	Hydro electric scheme. Construct an intake and turbine house. Connect the intake to the turbine house via a buried pipeline. Develop the site to produce hydroelectric power to supply the grid.	Granted
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 hydro electric turbine.	Under Consideration
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 microhydro electricity generating renewable energy system (124kw) on the Glenmornan River on the outskirts of Ballymagorry. Electricity generated to be exported to the grid.	Under Consideration
LA11/2015/0592/F	Development with Baronscourt Estate and Turbine House locates	Proposed construction and installation of 45kW Hydro	Under consideration

	<p>198m sw Baronscourt Mansion House. Intake 1 located 2000m east of Baronscourt Mansion House. Intake 2 located 1600m east of Baronscourt Manison House. Intake 3 located 1200 m south east of Baronscourt Mansion House. Intake 4 located 1350m south east of Baronscourt Mansion House.</p>	<p>Electric turbine including, 4 intakes, associated penstock, Turbine House and return point to Lough Fanny.</p>	
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