

North West Regional Energy Strategy Derry City & Strabane District Council & Donegal County Council

Abstract

The North West Regional Energy Strategy aims to evaluate the energy opportunities and local measures that are available to both councils within the North-West Region of Ireland to encourage the growth of a sustainable low carbon economy. To do this, a clear strategy and roadmap has been developed which shows the local measures that can be taken to decarbonise the Region by 2045. Derry is a Follower City in the EU H2020 Stardust Smart Cities project, and a Replication Plan will capture the learnings, helping to inform an action plan and the design of smart energy projects, which include a Pre-Feasibility analysis into a new District Heating network for Derry, as inspired by the city of Pamplona.

Key points

Smart Energy Management

Renewable Generation & Energy Storage

Low Carbon Transport

Low Carbon Heating

Energy Efficiency

Smart Energy System

Introduction

The NW energy strategy intends to encourage a holistic view of the energy system within the North-West Region by coordinating multiple energy vectors together in order to optimise energy consumption across the area by both minimising greenhouse gas emissions and reducing customer bills. The North-West Region will thereby aim to become a leader in achieving national and international climate change targets and set long term goals to become a "Net Zero Carbon Region" by 2045.

Regional Energy Strategy & Roadmap

A Regional Energy Decarbonisation Roadmap has been developed based on the analysis of the North-West Region. The roadmap highlights five key areas of interest as shown below, in figure 6.1. However, the emphasis of this strategy is to create a pathway to a collaborative carbon neu-

tral Whole Energy System which brings together multiple energy vectors within the region and provides a detailed view on the optimal future energy system for the region given the specific challenges and opportunities identified within this report.

These five Target Sectors have been explored and core paths have been developed for each which together form an effective strategy for the North-West Region to deliver on pre-set objectives. The Roadmap shows the intended progression for each area, indicating milestones that align with national energy targets and strategies. The Roadmap therefore addresses two strategic imperatives:

- Definition of a coordinated North-West Regional Energy Decarbonisation plan with a target of achieving net zero carbon emission by 2045;
- A high level Whole Energy System implementation plan to deliver key objectives;

1) Smart Energy Management

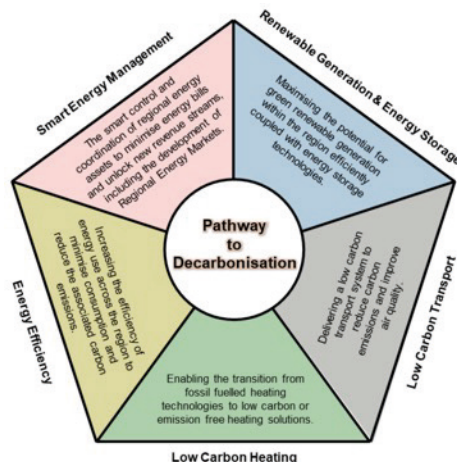
The smart control and coordination of regional energy assets to minimise energy bills and unlock new revenue streams.

2) Renewable Generation & Energy Storage

Maximising the potential for green renewable generation throughout the Region efficiently coupled with energy storage technologies.

3) Low Carbon Transport

Delivering a low carbon transport system to reduce carbon emissions and improve air quality.





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References

NORTH-WEST REGIONAL ENERGY STRATEGY - Final Report

Learn more about STARDUST project:
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This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement N° 774094.

4) Low Carbon Heating

Enabling the transition from fossil fuelled heating technologies to low carbon or emission free heating solutions.

5) Energy Efficiency

Increasing the efficiency of energy use within buildings across the Region to minimise consumption and reduce the associated carbon emissions.

Conclusions

Both Derry City & Strabane District Council (DCSDC) and Donegal County Council (DCC) have joined forces to build a sustainable and low carbon North-West Region which can encourage further economic growth whilst reducing the carbon emissions arising from the use of energy within the North-West Region. This North-West Regional Energy Strategy has defined the current energy system within the region and potential opportunities that are available to help meet binding national and European carbon reduction targets. These opportunities have been mapped against five themed areas as described below. A number of recommended immediate next steps have been proposed in order to provide a foundation for the creation of a Regional Whole Energy decarbonisation programme that is capable of realising the goal of Net Zero by 2045.

It is clear from above that there is a considerable amount of work over many years requiring a coordinated effort in order to develop and deliver, the projects set out within the North West Regional Energy Strategy. We are aware that as we are consulting on this strategy, the NI Energy Strategy is also being developed, and the intention is that both strategies are finalised towards the end of 2020. In keeping with similar organisational arrangements in both Ireland and England, we are confident that a delivery body such as a Regional Energy hub would work well in the North West of Ireland.

Recommendations & Next Steps

THE NORTH-WEST SMART ENERGY SYSTEM (NWSSES) STUDY

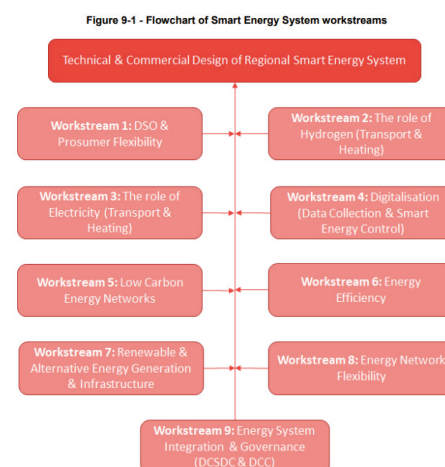
Broadly speaking the following steps are recommended to allow a fit-for-purpose Smart Energy System for the North-West to be designed:

- Develop a Regional Spatial Energy Demand Analysis to map energy information for the Region and create respective geographic energy profiles for the

commercial, residential and municipal sectors;

- Define and propose revolutionary market and business model options for the provision of cross boarder Smart Energy Systems;
- Develop selection criteria to assess the suitability of the market and business models;
- Investigate possible funding models and structures to finance the project. Ensure business model will attract finance and investment;
- Perform impact assessments to compare effects of business models on value chain for Whole Energy System. Develop financing proposals that share benefits and risks fairly between investors, consumers, utilities and authorities;
- Validate revenue streams and value proposition of the proposed business models. Recommend most appropriate model that aligns with strategic objectives of the North-West region;
- Develop detailed design for chosen business model and determine expected outcomes. Implement business model to build financial structure of project;
- Deliver a strong communication, engagement plan, recommend activities to achieve strategic objectives of the project and to share operations with projects in other localities.

Once this overarching view of the Smart Energy System of the future has been defined for the region the following technical and commercial Workstreams will further act to prove and demonstrate how the modelled energy system will operate both technically and commercially. This is shown in Figure 9-1, below.



As the workstreams outlined in this section begin to develop and grow, it is recommended that the Councils explore all avenues of funding in order to progress the establishment of the North West Regional Energy Hub.