



# Derry City & Strabane District Council Climate Action

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Drivers for Climate Action

Planning for Climate Action

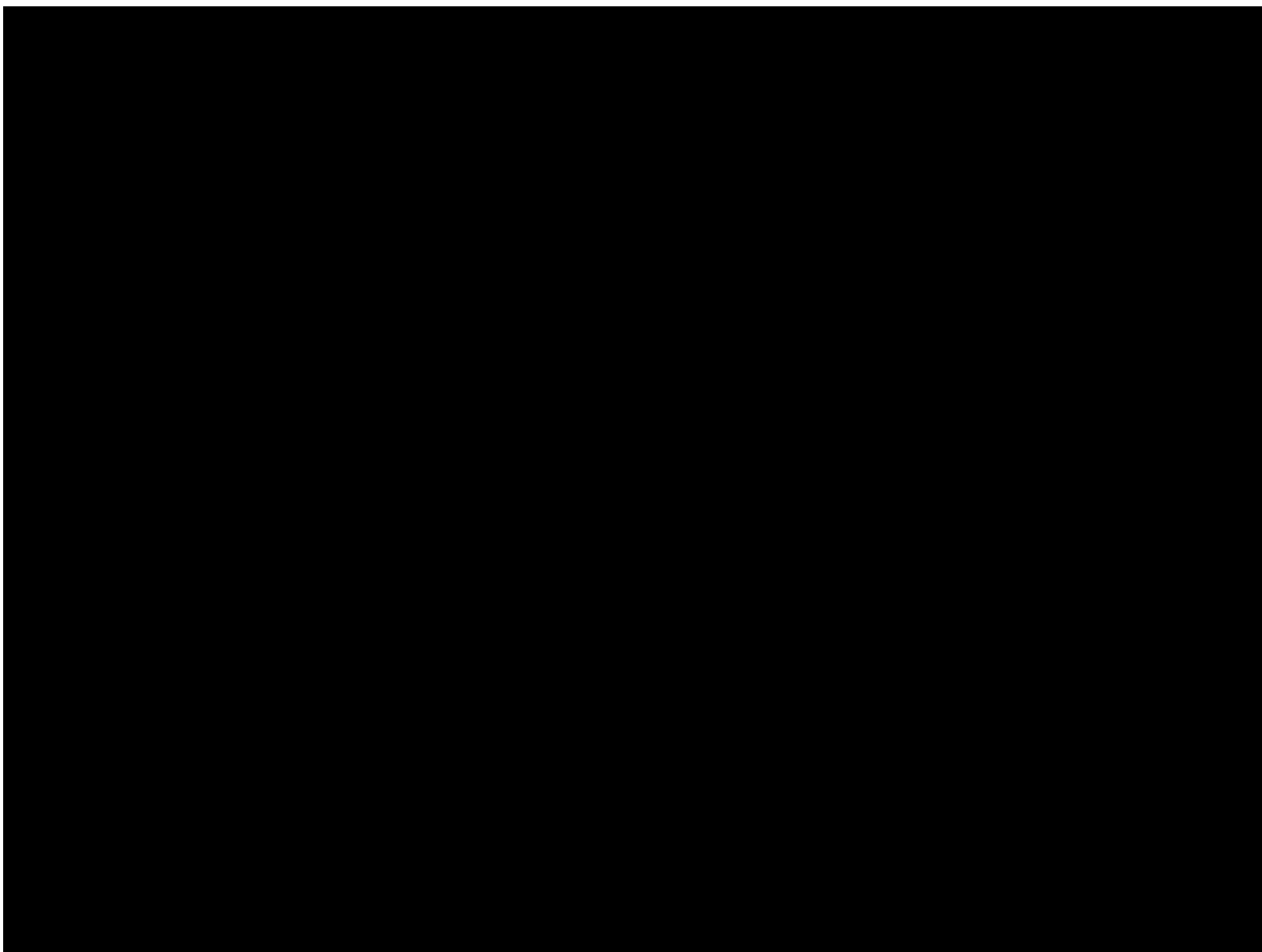
Challenges & Opportunities

Regional Energy Strategy & North West Climate Action



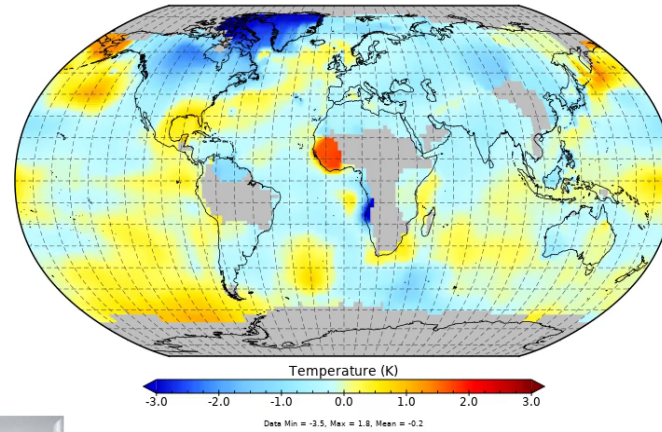
# Climate Change in the North West







Annual Surface Temperature Anomaly base 1951-1980  
1880-1884

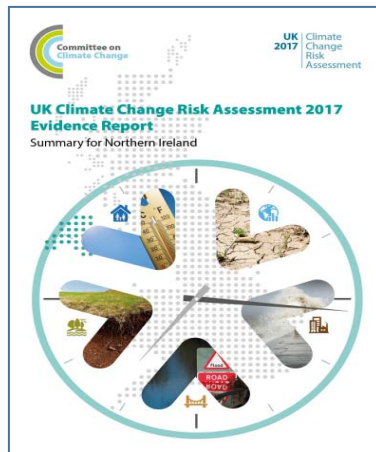
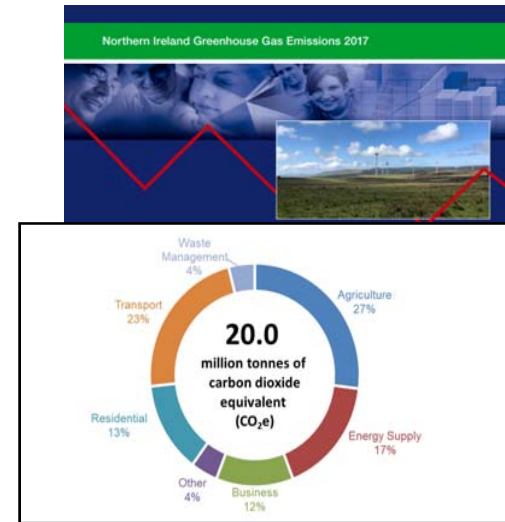
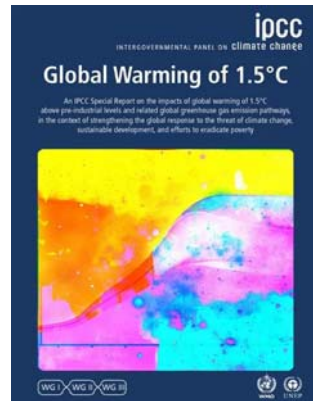


Met Office  
Hadley Centre

Headline result:

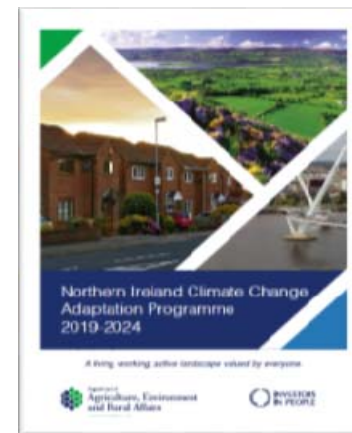
“a greater chance of warmer, wetter winters and hotter, drier summers”





**UKCCRA 2017 NI areas of risk & opportunity:**

- Natural Environment
- Infrastructure
- People & Built Environment
- Business & Industry
- International



## National & International Context



1997 | 2008 | 2010 | 2012 | 2013 | 2014 | 2015 | 2017 | 2018 | 2019 | 2020+



Policy



Regional & Local Plans

First Northern Ireland Climate Change Adaptation Programme  
January 2014

DCSDC Strategic Growth Plan  
2017-2032

DCSDC CLIMATE Programme  
2017-2020

Circular Economy Zero Waste Strategy  
2017

Second NI Climate Change Adaptation Programme  
2019  
DCSDC Green Infrastructure Plan  
2019-2032

NW Regional Energy Strategy  
2019

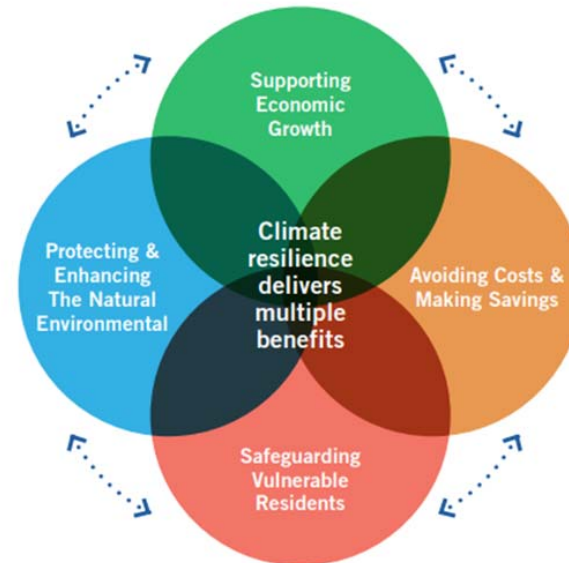
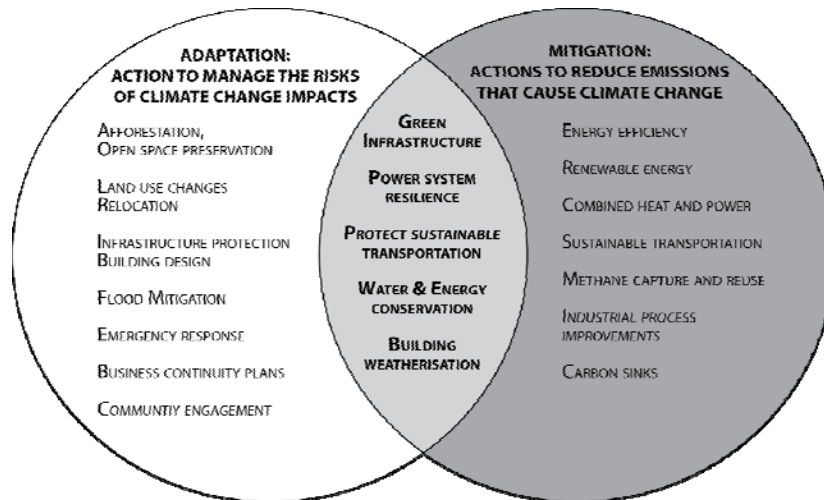
DCSDC Climate Adaptation Plan  
2020-2025  
North West Climate Action Plan  
Funding  
2019-2022

Regional & Derry City & Strabane District Council Context

# Climate Action



Key benefits for councils of developing climate resilience

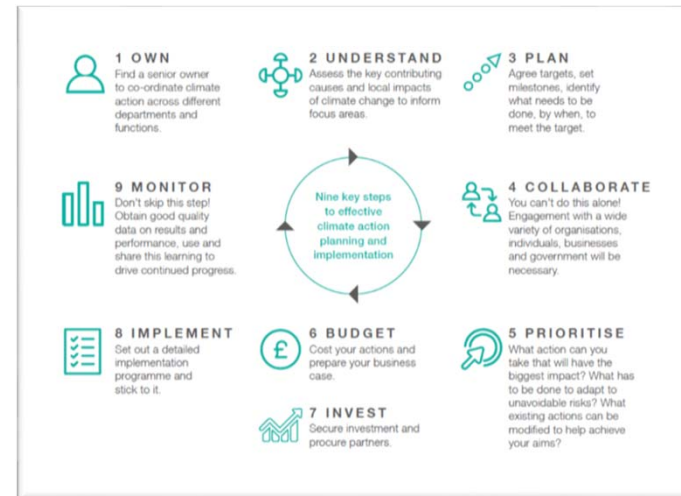






# Emergency Declaration & Climate Action Considerations

- Capacity & Resources
- Commitment
- Knowledge, skills & expertise
- Evidence Base
- Target Setting
- Networks & Collaboration
- Engagement
- Frameworks for action
- Legal authority
- Policy Decisions
- Risks



*Climate Emergency Declaration Guidance for Local Authorities Arup 2019*

# What are we doing?

- Climate Team & Working Group
- Emergency Declaration
- All Party Climate Emergency Working Group



- All Party Severe Weather Working Group
- North West Multi Agency Climate Emergency Working Group
- Evidence & Data
- Partnerships



- Draft Local Development Plan  
General Development Principles;  
Development should demonstrate how they  
“mitigate against the effects of climate change, adapt to its impacts, and to ensure resilience.”

- Infrastructure & Regeneration –  
Climate Change Risk & Opportunity Assessment

- Green Infrastructure Plan  
“Green Infrastructure will be maximized to mitigate against and adapt to the effects of climate change”



# Adaptation

Adaptation will be crucial in reducing vulnerability to climate change and is the only way to cope with the impacts that are inevitable.

Stern Review 2007



## Climate Adaptation Plan 2020 -2025

The Climate Adaptation Plan vision is that:

“Derry City & Strabane District Council is prepared for and resilient to the effects of climate change creating a safe and sustainable region for all”



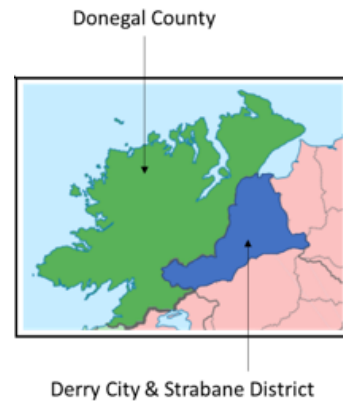
- Communication & Awareness
- NI Adaptation Planning Model & Toolkit
- Risk Analysis
- Emergency & Severe Weather Procedures
- Community Resilience Plans

# Mitigation

- Carbon Management Plan
  - Reduced emissions through asset management and staff behaviors
- Zero Waste Circular Economy Strategy
- **SECURE** – Smarter Energy Communities
- **SmartRENEW** – Smarter Renewable Energy & Heating Management
- **SMARCTIC** – Smart Energy Management in Remote Regions
- **STARDUST** – Holistic and Integrated Urban Model for Smart Cities
- Energy Efficiencies in Council Properties:
  - LED Lighting Council buildings
  - Solar Panels  
(Derg Valley Leisure Centre/Irish Street Community Centre Derry/ Strahans Rd Recycling Centre Strabane)
  - Air Source Heat Pump  
(Lincoln Court Community Centre)
  - Heating System Upgrades
  - Energy reduction targets
  - Building Management Systems
  - Smart IT Systems
- Transport
  - Hybrid vehicles for business travel
  - Bicycles for business travel
- Be Sustainable Campaign
- Life Tree Project
- Festivals & Events Waste Reduction Initiatives

# Cross Border Mitigation

## Derry City & Strabane District Council (DCSDC) & Donegal County Council (DCC) to define a *Regional Energy Strategy for the North West*



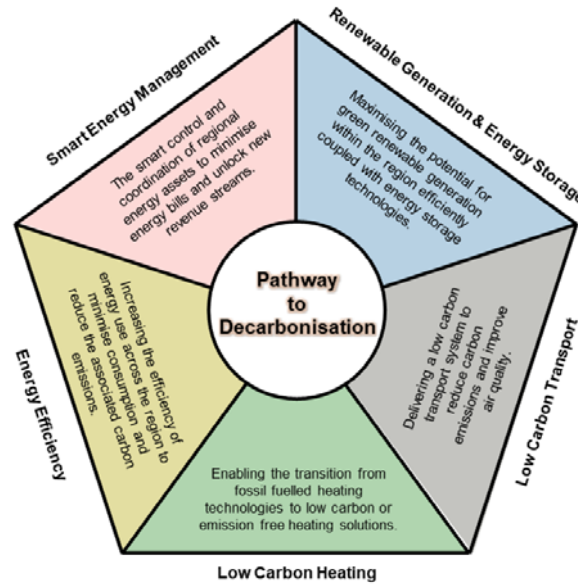
*A pathway to the lowest cost Smart Energy System which is “Net Zero” ...*

*... eliminating the North West’s contribution towards climate change by 2045*

# Mitigation

## Local Measures for 'Net Zero'

- Prosumer flexibility as a service to the DSO
- Private wire and virtual private wire connections
- Smart Energy Management systems
- Deployment of Microgrids
  
- Target homes with low efficiency banding and upgrade
- Encourage use of LED lighting in homes and businesses
- Increase penetration of LED street lighting



- Roll-out of Heat Pumps
- Use of District Heating schemes
- Generation of use of hydrogen for heating
- Support local production and use of Biofuels

- GIS Mapping of potential low carbon generation
- Increased installation of onshore wind
  - Deployment of battery storage
  - Rooftop solar

- Facilitate all forms of Low Carbon Transport
  - Implementation of Low Emission Zones
    - Investment in local greenways
    - Hydrogen for transportation

# Mitigation

	2020	Short Term	2030	Mid Term	2040	Long Term	2050
<b>1) Smart Energy Management</b> The smart control and coordination of regional energy assets to minimise energy bills and unlock new revenue streams.	<ul style="list-style-type: none"> <li>A detailed technical and commercial evaluation of the local energy system will be completed to understand the options available and costs of a carbon neutral energy system.</li> <li>Pilot small scale trial of the Smart Energy Management system of the Northwest Region will be completed.</li> <li>All assets / buildings with the potential for smart and future flexibility with DSR and ANM will be identified.</li> <li>Identified all potential microgrid areas and begun implementation of microgrid in rural area.</li> </ul>	<ul style="list-style-type: none"> <li>The design and initial implementation of a regional wide Smart Energy Management System will be completed.</li> <li>Further bids will be made on flexibility systems meaning DSR and ANM schemes will be widely spread and total energy cost will reduce.</li> <li>More rural areas will have microgrids installed.</li> </ul>	<ul style="list-style-type: none"> <li>Northwest Region will have a fully integrated and operational Smart Energy Management System that will include all network assets.</li> <li>Through DSR and ANM schemes, consumer energy bills will be significantly lower than 2020 prices and will be common place across the Northwest Region.</li> <li>All rural areas that have the potential to be part of a microgrid will be part of a microgrid system and this will be considered for all future settlement developments.</li> </ul>				
<b>2) Renewable Generation &amp; Energy Storage</b> Maximising the potential for green renewable generation throughout the Region efficiently coupled with energy storage technologies.	<ul style="list-style-type: none"> <li>A GIS map of the region identifying all possible installation locations for renewable generation (rooftop solar, onshore wind) will be created.</li> <li>Locations surrounding future wind farm developments will be reviewed.</li> <li>Identified and begun roll out of solar technology for council owned buildings.</li> <li>All future renewable development schemes will have or consider battery storage.</li> </ul>	<ul style="list-style-type: none"> <li>Northwest Region will be Ireland's major exporter of wind energy.</li> <li>Solar panels will be commonplace on council buildings.</li> <li>Generation mix will consist of different locally produced renewable energy - Battery storage schemes will be common place.</li> </ul>	<ul style="list-style-type: none"> <li>100% of all of the Northwest Region's energy consumption will come from renewable sources. This includes electricity, heat and transport.</li> <li>Energy will be generated from a mixture of sources however wind will continue to be the main contributor.</li> <li>Solar panels will be present on all council buildings and solar farms will be commonplace within the Northwest Region.</li> <li>Battery storage will be part of every renewable system and will be utilised within times of a energy tariffs, creating additional revenue.</li> </ul>				
<b>3) Low Carbon Transport</b> Delivering a low carbon transport system to reduce carbon emissions and improve air quality.	<ul style="list-style-type: none"> <li>Identified the EV and hydrogen transport infrastructure needed for the Northwest Region.</li> <li>Local council incentives will be put in place for EV and EV uptake will increase.</li> <li>Identified and developed the processes for Low Emission Zone in Derry City, Strabane, Buncrana and Laccagherry. The first Greenways will be installed and a car sharing scheme will be introduced to reduce congestion.</li> </ul>	<ul style="list-style-type: none"> <li>All petrol and diesel based vehicle sales will be banned within the Northwest Region.</li> <li>EVs will be commonplace across the region with the infrastructure needed for it constantly being implemented and upgraded.</li> <li>Greenways will continue to dominate the area with further incentives applied to reduce the total number of cars on the road.</li> <li>Roll out of hydrogen based long haul and HGV vehicles.</li> </ul>	<ul style="list-style-type: none"> <li>90% of all vehicles on the road within the Northwest Region will be low carbon based (either EV or hydrogen).</li> <li>The total number of cars on the road will have reduced by 50% with more people using greenways as a means for travelling and more people using increased levels of hydrogen public transport.</li> <li>EV infrastructure will be fully operational and the network will be able to handle all current and future uptake of EVs. Furthermore, charging points will be abundant, making EVs the most viable option.</li> <li>Heavy penalties on all fossil fuel based vehicles will make low carbon transport significantly more economically viable for all citizens.</li> </ul>				
<b>4) Low Carbon Heating</b> Enabling the transition from fossil fuelled heating technologies to low carbon or emission free heating solutions.	<ul style="list-style-type: none"> <li>Identified all target areas with Northwest Region based on what heat source should be used (Heat pumps, hydrogen etc.)</li> <li>Replace 20% of the natural gas in the network with hydrogen for heating.</li> <li>Electric heat pump programme applied with local industries provided for construction and installation of heat pumps.</li> <li>Increase local biofuel industry presence by replacing all burners with biofuel burners.</li> </ul>	<ul style="list-style-type: none"> <li>50% phase out of all oil and natural gas based heating systems in domestic and commercial premises.</li> <li>Replace 50% of the natural gas in the network with hydrogen for heating.</li> <li>Direct heating schemes will have been installed in rural areas.</li> <li>Heat pumps will be commonplace.</li> </ul>	<ul style="list-style-type: none"> <li>100% phase out of all oil and natural gas based heating systems in domestic and commercial premises.</li> <li>Northwest Region will have a localised hydrogen gas network that is produced locally and used for transport and heating.</li> <li>All homes not part of gas network will have heat pumps as their source of heating.</li> <li>Will have a localised production of biofuels that is used by industries in the area.</li> </ul>				
<b>5) Energy Efficiency</b> Increasing the efficiency of energy use across the Region to minimise consumption and reduce the associated carbon emissions.	<ul style="list-style-type: none"> <li>Identified all buildings that need efficiency improvements and roll out incentives and funding mechanisms for locals.</li> <li>Promote local businesses to help improve efficiencies through insulation, double glazing, etc.</li> <li>All future built houses will have an efficiency of at least Band B.</li> <li>Mandatory roll out of LED lighting to all public and council owned assets and buildings.</li> </ul>	<ul style="list-style-type: none"> <li>50% of all buildings will have an efficiency of at least Band B.</li> <li>All public lighting and council buildings will use 200% LED lighting.</li> <li>Efficiency improvements will have directly paid for down total energy consumption within the Northwest Region.</li> </ul>	<ul style="list-style-type: none"> <li>100% of all buildings in the Northwest Region will have an efficiency of at least Band B.</li> <li>All homes and businesses will have LED lighting and standard filament lighting will be obsolete.</li> </ul>				

## 6.1.4 IMPLEMENT A REGIONAL SMART ENERGY MANAGEMENT SYSTEM

A Regional Smart Energy Management System involves combining key infrastructure to create a single management system that can help reduce total energy use. Within the Region, the councils could aggregate the different public assets to create a Regional Management System. The following tasks will be carried out to meet the objectives:

- Create a detailed business case which described the long-term benefits for the region by implementing a regional smart energy management system.
- Create a technical specification which identifies the key assets to be included and the basic functionality that is required. These could include LED public lighting, public EV charging points, CTV cameras, etc.
- Release tender and the technical specification and procure a supplier of the smart energy management system.
- Identify long term operation and maintenance resource requirements.

## 6.2.3 INCREASE THE PENETRATION OF ROOFTOP SOLAR

Solar technology is an effective way to increase the level of renewable generation installed within the region. The cost of the technology is reducing each year as the technology matures and performance increases. The following tasks will be undertaken to maximise the potential of rooftop solar within the area:

- Assess potential policy and incentive programmes that would facilitate community energy schemes to jointly fund solar projects for social housing and low-income areas.
- Assess and develop appropriate incentives for private housing and local businesses. Target council owned car parks for new installations and co-ordinate with EV charging stations
- Identify potential sites for solar microgrids; target rural areas that contain council buildings to create an independent microgrid system
- Help water companies to install PV and batteries at pumping station

## 6.3.3 ENCOURAGE USE OF HYDROGEN AS A FUEL FOR TRANSPORTATION

Hydrogen is a fast-developing alternative fuel source for long haul goods transportation where EV range or cost is prohibitive. The following local measures will be taken to increase the use of hydrogen for vehicles:

- Determine the most suitable long-haul transportation requirements (Buses, lorries etc.) that could switch to hydrogen.
- Define the fuelling infrastructure required in the region to support these vehicles.

Provide incentives to companies who invest in hydrogen vehicles.



## 6.3.4 INVEST IN LOCAL GREENWAYS AND OTHER FORMS OF LOW CARBON TRANSPORT

Developing the use of greenways will reduce the total number of cars on the road which has the added benefit of reducing congestion in busy areas of the North-West Region, such as the road between Derry City and Strabane. Implementing these greenways will be done through the following methods:

- Improve the low carbon infrastructure
- Create a car sharing scheme. Incentivise and/or reward individuals who partake in the scheme
- Have a greater uptake of smaller low carbon transport technologies. For example, electric scooters and electric bikes

## 6.3.1 FACILITATE THE UPTAKE OF LOW CARBON TRANSPORT

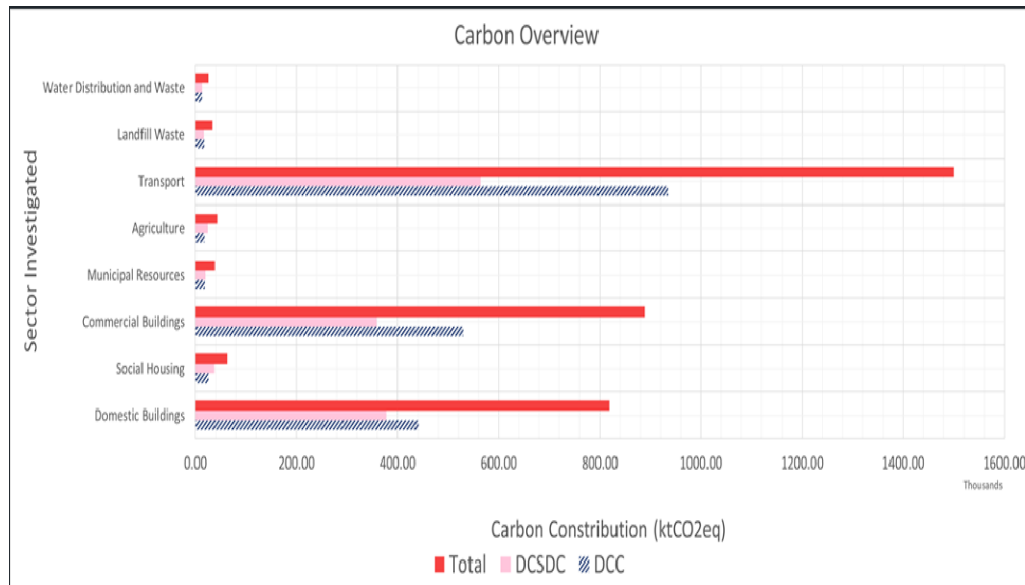
Low carbon transport is considered an important enabler of a future carbon neutral society. As such, it is important that the region is prepared for the uptake of electric and hydrogen vehicles and the necessary infrastructure is in place ahead of time. The following local measures will act as enablers for low carbon transport within the region:

- Enlist the services of transport planners to identify the number of charging points required within the region to facilitate future uptake scenarios
- Work with local businesses to install the appropriate charging infrastructure in place to adequately support the future penetration of electric vehicles
- Invest in EVs and hydrogen vehicles as replacements for the council's current fleet stock
- Incentivise / penalise private companies with large fleets to go electric / hydrogen based
- Public education programme for the benefits (financial & environmental) and performance of EVs to improve public perception.
- Combined LED lighting with EV charging points (Smart Management System)

## 6.4.2 DEPLOYMENT OF DISTRICT HEATING SCHEMES

District heating schemes may also be a good solution to the current dependency of fuel oil for heating. The following local measures will be taken:

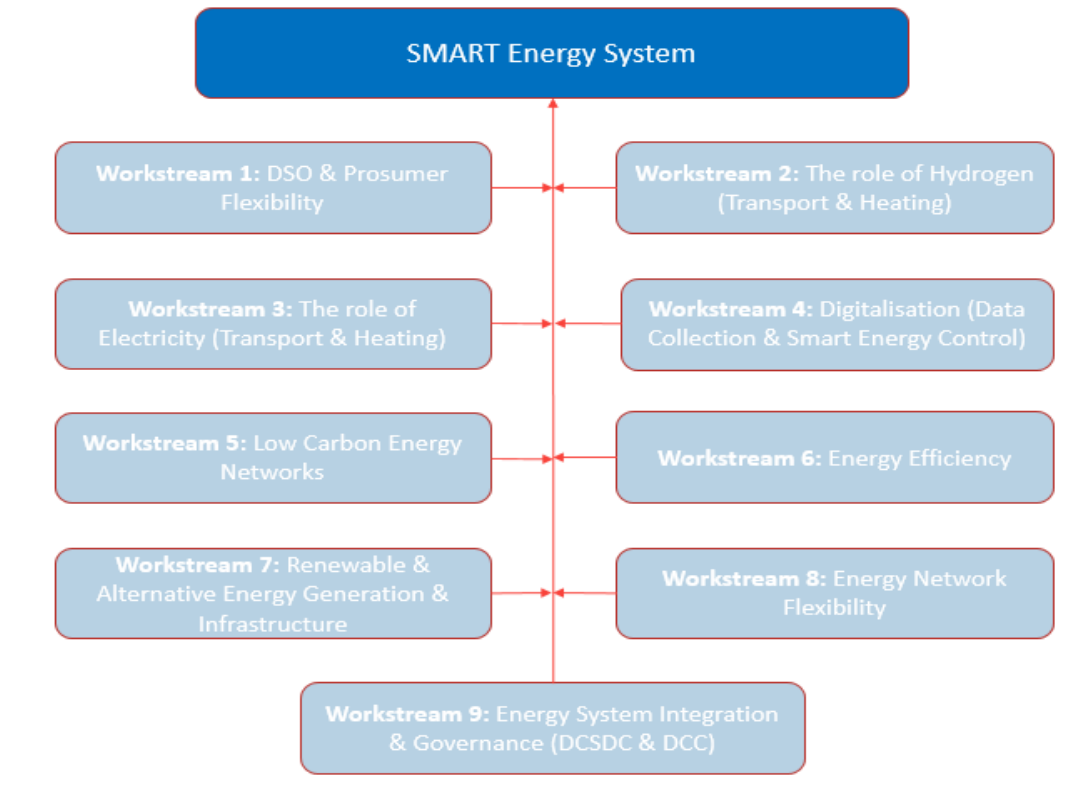
- Carry out assessment of towns and nearby businesses with waste heat to identify opportunities to build district heating schemes.
- Target off-gas grid homes first as alternative to heating oil.
- Work with local developers to identify opportunities for local heat networks.



The total carbon baseline across all sectors for the North-West region was calculated to be **3,413 ktCO<sub>2</sub>eq** (kilo tonnes of CO<sub>2</sub> equivalent), of which **1,999 ktCO<sub>2</sub>eq** is attributable to DCC, and **1,414 ktCO<sub>2</sub>eq** to DCSDC.

Three main sectors; **Transport, Commercial Buildings, and Private Domestic Buildings**, have significant contribution to the carbon baseline making up **94% of the total baseline (44%, 26%, and 24% for transport, commercial and domestic buildings** respectively). This highlights the key focus areas for DCC and DCSDC authorities to target with carbon neutral development strategies.

# Mitigation



# Mitigation

Project proposal	Partner	Detail	Contact person
Power to hydrogen	Energia & Doosan Babcock Energy	Looking to develop a project around hydrogen fuelled public transport	Mark Welsh /Cadan McLaughlin
Large Energy Users	SSE Airtricity	Considering large scale energy related project between multiple energy users (hospital, university, college, council )	Andy McPhearson
Using data to connect producers/ consumers	Digital Catapult	Using data to connect producers of renewable energy with consumers of energy including EV charging.	Adrian Johnston
Data collection	Siemens	Energy Data Digitalisation	David McGaffey
Project Development in cold regions	Ernact	NPA region – development of energy efficiency and renewable energy projects, with NPA partners	Colm McColgan
	Grid Networks Ireland	Consideration of extension to gas grid	Jason Hannon

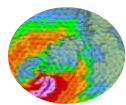


# North West Cross Border Action



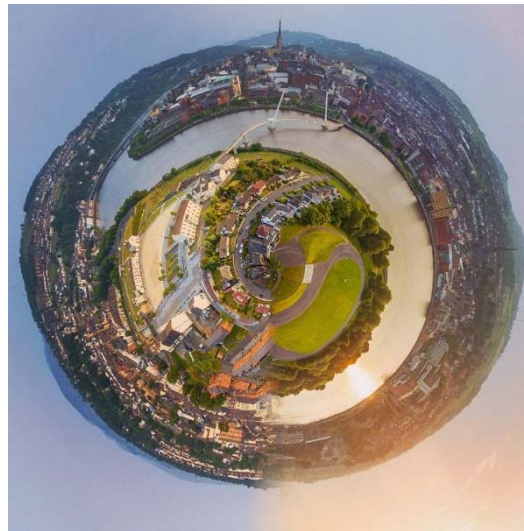
- North West Nature Based Solutions Study
- Cross Border Emergency Planning Group
- NWSGP Climate Change Working Group – Led by ICLRD on behalf of North West Strategic Growth Partnership
- North West Climate Action Plan  
(Development Phase 2019-2022 / Delivery Phase 2022-2032)

**“Deliver climate action on a cross sectoral multi agency basis to achieve greater adaptation and resilience to the effects of climate change while leading by example to reduce emissions and mitigate against further global warming.”**





*Thank you for your attention*



## Contact Details

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