



**FUTURE PROOFED CITY**  
**BELFAST**  
**RESILIENCE**  
**STRATEGY**

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# Climate Resilience and Energy

Rockefeller 100 RC  
Climate key theme  
Resilience Strategy  
PCAN Project QUB -£3.2m  
VPACH 2 -£9.2m  
GenComm - £9.2m  
Political and governance  
structures



# Climate Neutral City ?

## **New drivers**

Global Climate – COP 21 targets

EU Clean Energy Package 2030

UK National Energy and Climate Plan (NECP)

UK Industrial Strategy

NI Industrial Strategy

Strategic Energy Framework

Road to Zero Strategy

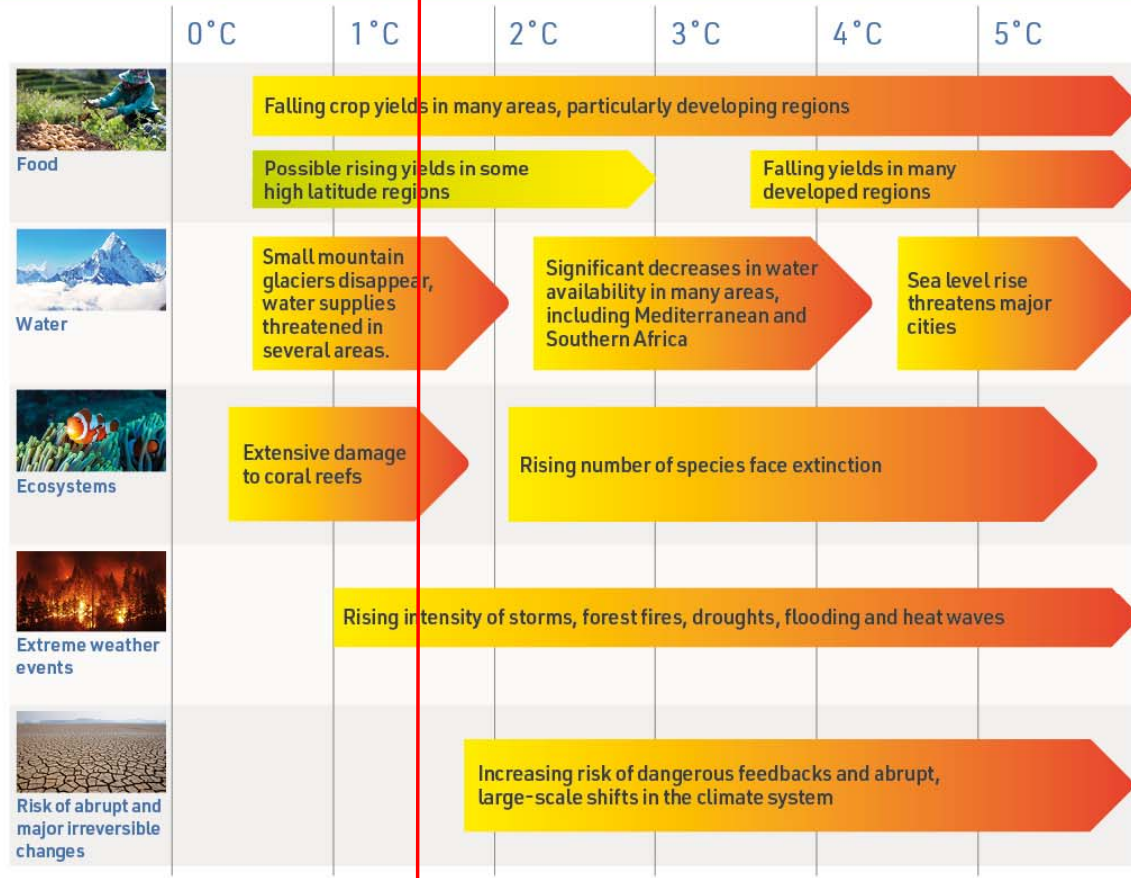
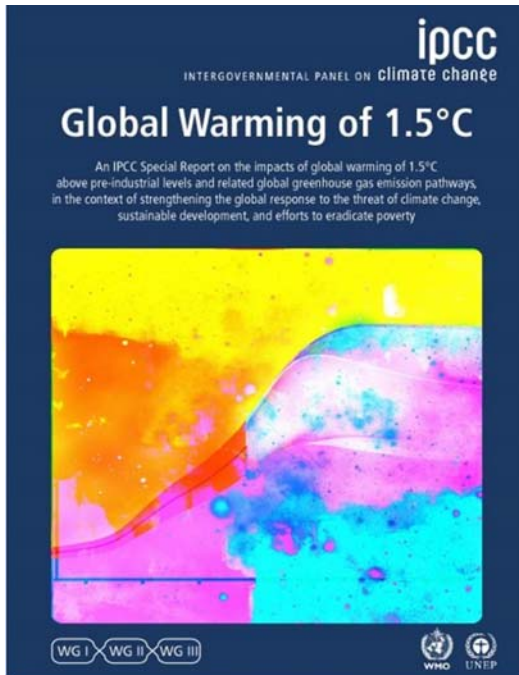


**Urban Resilience** is the capacity of cities to **survive, adapt, and thrive** no matter what kinds of **chronic stresses** and **acute shocks** they experience.

# CLIMATE CHANGE

## Global temperature change

Relative to pre-industrial



COASTAL RISK SCREENING TOOL

## LAND PROJECTED TO BE BELOW ANNUAL FLOOD LEVEL IN 2050

Improved elevation data indicate far greater global threats from sea level rise and coastal flooding than previously thought, and thus greater benefits from reducing their causes.

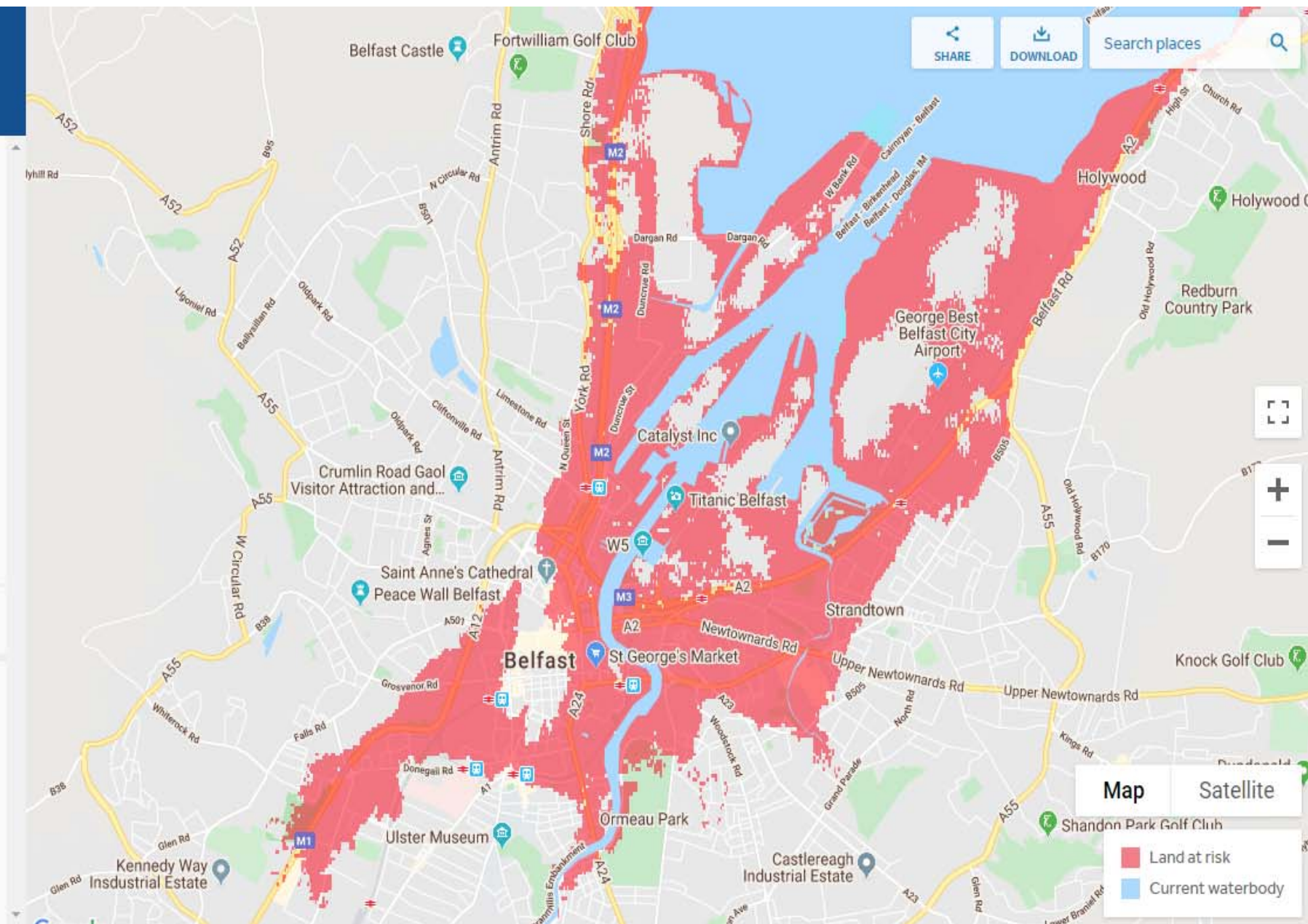
DETAILS AND LIMITATIONS

- Report
- Scientific Paper
- In the News

### Elevation Data Used

- CoastalDEM® v1.1
- Legacy data

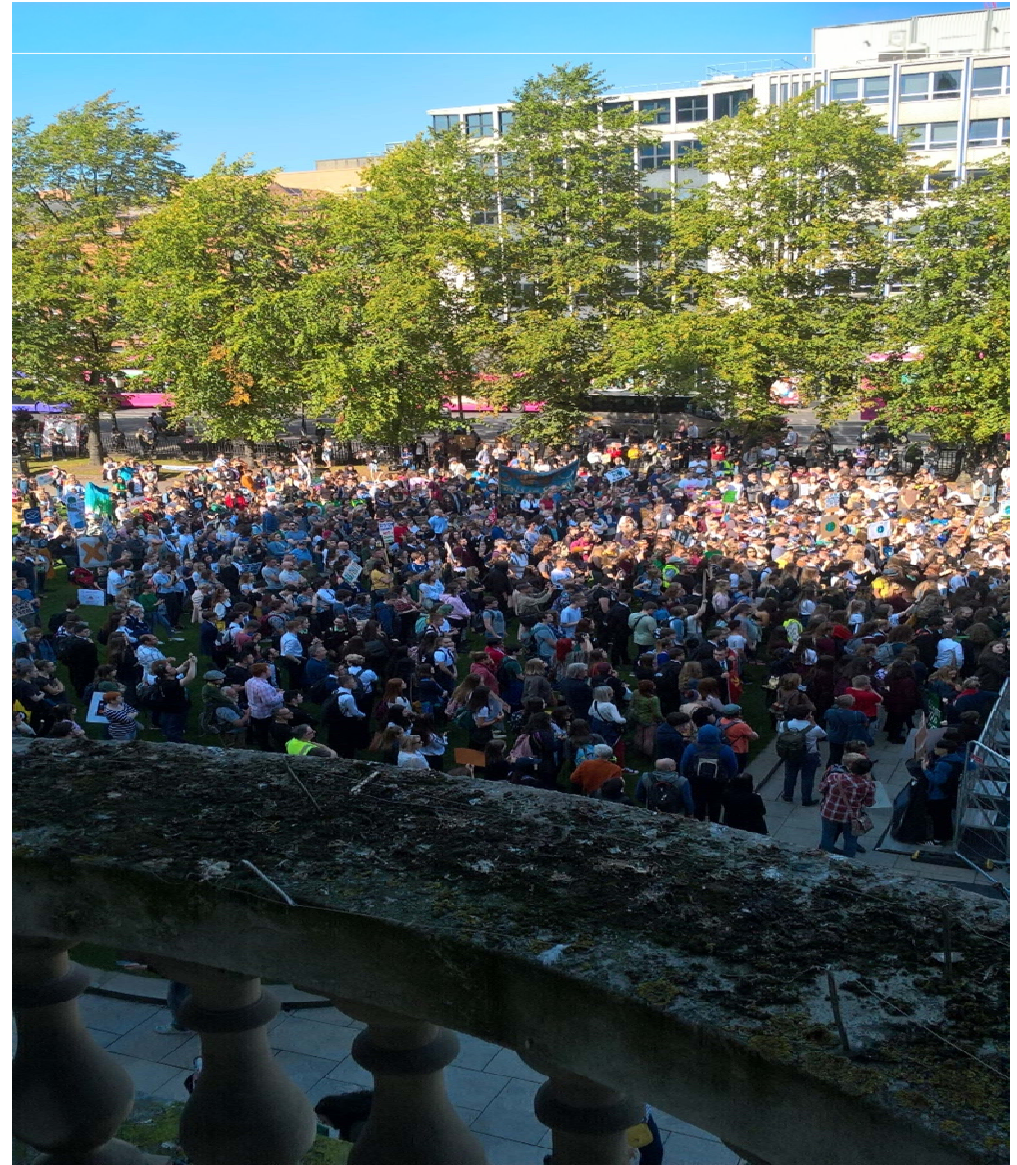
OTHER SETTINGS



# Cities at the centre of transformation

- 75% GHG from cities
- Urban centres will be responsible for 70% population
- Leadership from European cities
- EU World Cites – urban sustainability Challenges
- EUROCITIES Environment Forum
- Innovate UK







CLIMATE CHANGE AFFECTS EVERYONE...  
BUT NOT EQUALLY.

REDUCE  
YOUR  
CARBON  
FOOT  
PRINT



TROCAIRE



# STEP 1

City Resilience Framework identified areas of city resilience



# STEP 3

Arup reviewed city assets and risks

- City assets
- Perceptions
- City risks
- Strengths

# STEP 2

Citywide engagement identified key shocks and stresses that Belfast may face

- 18 workshops involving 547 people
- 35 focus groups involving 480 people
- 140 people interviewed on a one-to-one basis

# STEP 4

Data analysis informed strategy development

- Economic**: Vulnerabilities, cyber, automation, inequalities, business start-ups, young people
- Population decline**
- Poverty**: Children and young people
- Connectivity**: Economic corridor, digital, physical
- Transport**: Cheaper, cleaner, greener
- Housing**: Lack of new social, affordable housing
- Segregation**: Housing, education system, division
- Civic pride**: One city, city story
- Health**: Dependence on prescription drugs, mental health, nutrition awareness, rising obesity
- Risk of returning to violence**
- Climate change**: Extreme weather and poor air
- Car orientated city**
- Infrastructure**: Deficit, for future
- City centre**: Retail, housing, demolition, declining core
- UK Exit**: Impact on Belfast
- Financing the city**: City revenue
- Politics**: Lack of leadership, fragmented decision making
- Lack of spaces to play for children, the city not designed for children**: With other cities post-Brexit, insular city, east, west, north, south

# STEP 6

Citywide consultation on a draft strategy



# STEP 5

Discovery areas and additional studies commissioned

- Stakeholder meetings
- Workshops
- Reports
- Committee reports

# STRESSES AND SHOCKS

## STRESSES



**Economic recovery capacity**



**Dependency on fossil fuels and carbon intensive systems**



**Mental health and use of prescription drugs**



**Population change**



**Prevalence of car use**



**Governance and financing of risk**



**Housing supply in city**



**Segregation and division**

# STRESSES AND SHOCKS

## SHOCKS



**Infrastructure capacity**



**Condition of existing NI Housing Executive stock**



**Climate change**



**UK Exit**



**Flooding and extreme weather events**



**Cyber resilience**



# RESILIENCE GOAL



Our goal is to transition Belfast to an inclusive, low-carbon, climate-resilient economy in a generation.

# AREAS OF FOCUS



## Climate resilience

Building a low carbon economy adapting to, and mitigating climate change across the city.



## Children and young people

Giving our youth an active urban childhood, focused on wellbeing, in the best city in Europe to grow up



## Connectivity

Creating connections and connecting people, sustainable transport and infrastructure in ways that achieve our economic, social and environmental goals

# CLIMATE RESILIENCE

## 1 Resilience and Sustainability Board



We will start by establishing a new Resilience and Sustainability Board - a permanent part of our Community Planning structures for the city. The Belfast Resilience and Sustainability Board will bring together key agencies and organisations focused on preparing for climate change. Its immediate objective will be to develop a Climate Adaptation and Mitigation Plan for Belfast.

## 2 Mini Stern



Belfast City Council is a key partner in the work of the Place Based Climate Action Network (P-CAN) Belfast Climate Commission with Queen's University. In early 2020, we will have produced and launched a so-called 'Mini Stern', following the model pioneered by Leeds University, to present an economic case for decarbonisation and enable us to prioritise our investment in the right way.

## 3 Climate change risk assessment



We have commissioned Arup (our 100 Resilient Cities strategic partner) to undertake a high level climate change risk assessment- to provide us with an assessment of the potential impact of climate change on the city's infrastructure. This work will inform Phase One of the strategy, and we will consider other additional methods of risk assessment in due course.

## 4 Climate resilient infrastructure



We will develop a fundamental understanding of the climate impacts on existing and forthcoming infrastructure, with a view to ensuring that forthcoming development in the city does not add to our risk exposure.

## 5 Carbon Budget



By end of 2021, we will have agreed a Carbon Budget for Belfast - an agreed definition of what counts towards our 'carbon footprint', a target for the amount of carbon the city will produce, and an agreed date to become a Net Zero Carbon City.

## 6 City-wide support organisation



By end of 2021 we will establish a city-wide support organisation/team drawing on the on model of Adaptation Scotland to provide advice and support to help public sector, businesses and communities understand what climate change will mean for them, and the best way to plan for its impact.

## 7 Low Carbon Economic Areas



We will consider how to establish 'Low Carbon Economic Areas' across the city to act as 'test beds' for new low-carbon technologies and ensure integration with delivery of Belfast City Deal priorities.

## 8 Training and skills for an inclusive low-carbon economy



Working with its education partners, Belfast City Council will explore the development of a major programme of training and skills for a generation of professionals to lead our transition to an inclusive low-carbon economy. Inspired by the Canadian Academy for Sustainable Innovation, we will aim to set a target to provide thousands of professionals with the skills, knowledge, and experience to manage our move to a sustainable future by 2050.

# CLIMATE RESILIENCE

## 9 Air quality



Recognising the critical importance of good air quality to the health of our residents, Belfast City Council will (1) consider ways to enhance air quality monitoring in the city - including for nitrogen dioxide and fine particulate matter (2) set out our own ambitions on air quality in a new Air Quality Plan to be written in 2020 in light of evidence and to take account of any new government standards (3) drive systemic change away from carbon intensive high polluting forms of transport to sustainable, clean modes of travel.

## 10 Asset management strategy



Belfast City Council will review its asset management strategy so that all built assets maximise opportunities for efficiency in the use of energy and natural resources. |

## 11 Belfast City Region City Deal



We will build sustainable development priorities into a sustainable development deal implementation to ensure climate resilience is built in to delivery outcomes.

## 12 Green Business Network



Belfast City Council will support the establishment of a Green Business Network - an ecosystem of local businesses who make climate adaptation and mitigation a core priority. The council will work with business in developing the skills and training required.

## 13 One million trees



Belfast City Council will work with a range of organisations with aim of planting one million trees in the next fifteen years. This is Aligned with our Open Spaces Strategy, and Green and Blue Infrastructure Strategy, where forestation and tree-planting are emphasised as a core part of building our climate resilience.

## 14 Planning policies for climate resilience



Belfast's draft Local Development Plan provides the statutory framework for ensuring that land-use in Belfast delivers a climate resilient city. As the LDP progresses, Belfast City Council will develop a series of planning policies that drive the city's objectives on climate resilience and that accelerate decarbonisation.

## 15 Green Policy for Festivals



Delivering a culturally vibrant Belfast through our Culture Strategy, we will design and implement a 'Green Policy for Festivals' in Belfast.

## 16 City's food needs



In developing this strategy, we have had insufficient time to look in detail at the city's food needs into the future, however this is a priority for strategy implementation. Working with partners across the city, a workstream examining the climate impacts and opportunities for an ongoing and city wide programme of healthy and sustainable food will be critical to Belfast's resilience.





## New Political and Council Structures

All Party Working Group on Climate Crisis

City wide - Resilience and Sustainability Board

Innovation and Inclusive Growth Commission

Partnership with QUB / PCAN project

Belfast Low Carbon Commission





# Help and support



A toolkit for city regions and local authorities



**BELFAST**  
**CLIMATE**  
**COMMISSION**

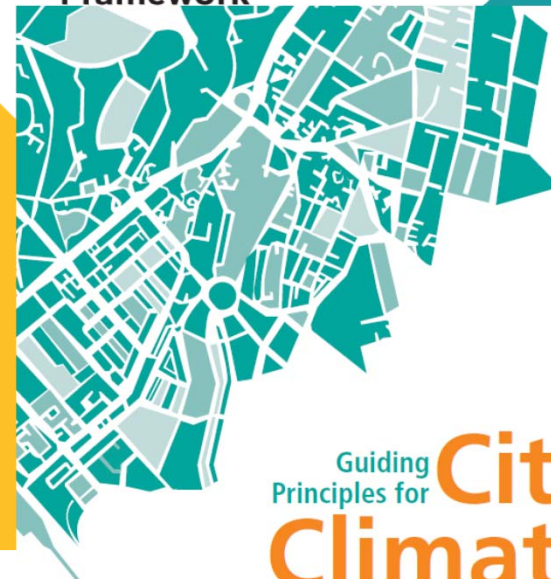
**ZERO**  
**CARBON**  
**BRITAIN**  
2030  
A NEW ENERGY STRATEGY  
The second report of the  
Zero Carbon Britain project



C4O  
CITIES

15.05.2018

**Climate Action  
Planning  
Framework**



Guiding Principles for **City**  
**Climate**  
**Action**  
Planning

Version 1.0

**UN HABITAT**  
FOR A BETTER URBAN FUTURE

**Climate action co-benefits**  
Cutting carbon and improving people's lives

Authors: Emma Jones | Cara Jenkinson | Simon Stammer



# **BELFAST CLIMATE COMMISSION**

- Green Finance
- Green Business development
- Climate and Community
- The Just Transition
- 15 member Commission
- Green Finance Workshop
- Green New Deal



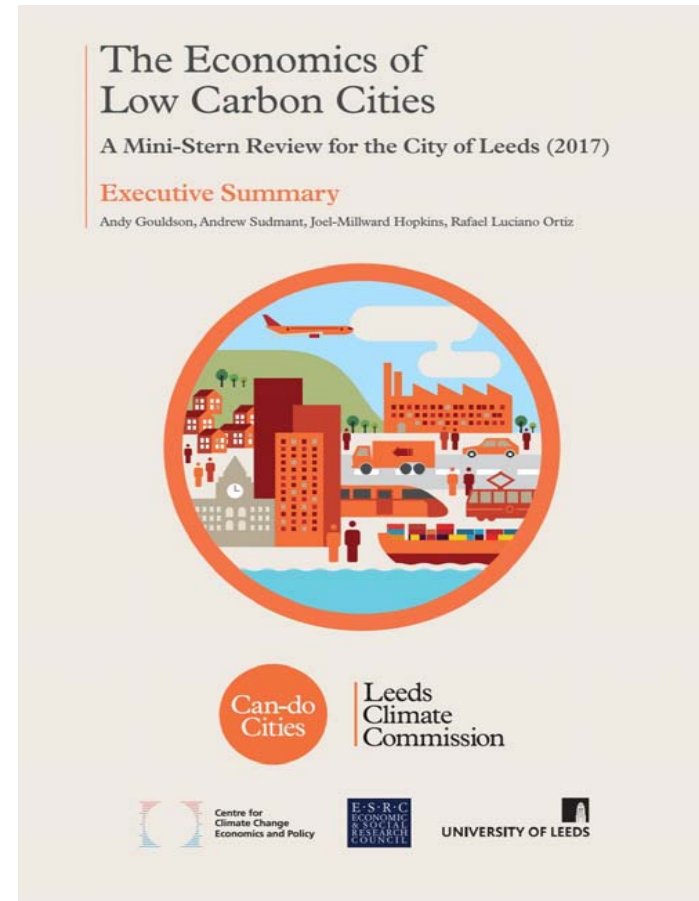
# Belfast City – Energy challenges

- NI 95% dependent on imported fossil fuels
- End of the pipe for oil and gas supplies.
- 50 % approx. Belfast homes oil dependent for space heating.
- 25% homes in Fuel poverty
- **£1.4 billion on importing energy**



# Mini – Stern Report

- Based on the 2007 report of Lord Stern – The Economics of Climate change
- Provides a suit of interventions to address climate and costs them for Belfast
- Working with Leeds University to complete the study
- Funded through Rockefeller Funds



# GenComm – Project partner

- Hydrogen as a clean fuel
- Hydrogen from curtailed renewable energy sources
- Local Authorities benefit from a Decision Support Tool
- Education about role of hydrogen in the new clean power economy
- Creating jobs, generating wealth in the new smart clean energy space.





# Energy Transition to 2050

- **Green Hydrogen**
  - **Transport**
  - **Fuel Cells**
  - **Hydrogen Boilers**
  - **Hydrogen generators/CHP**
- **Natural Gas as a Low Carbon Fuel**
  - **20% Biogas injection**
  - **20% Hydrogen injection**



**VPACH 2 Project**

**Feb 2020**

# VPACH 2 - Virgin ( Media ) Park and Charge

- £9.2M Virgin Media / Liberty Global – Innovate UK Fund.
- Belfast - £55K , observer status
- Repurposing old Infrastructure to enable on – street residential sector. Difficult to reach .
- Green box is carrying internet services, data, electricity – all components for EV charging
- No digging up the roads for new infrastructure
- Tested in Phase 1 and scaled up in phase 2
- Challenges for NI, legislation required for on-street car parking, MRP issue, electricity infrastructure and demand
- Learning about business models, introducing new infrastructure – legislation , time gaps commercially led models.



# Project Partners



# FULLY CHARGED



*Robert Kewy*

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**THE WORLD'S NO.1**

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**CLEAN ENERGY &  
ELECTRIC VEHICLE**  
PROGRAMME & PODCAST

# Project Partners

## Local Authorities

West Midlands Combined Authority

Liverpool City Council

Oxfordshire County Council

Southend On Sea Council

Worcestershire County Council

Wandsworth Council

Croydon Council

Northamptonshire County Council

Hammersmith and Fulham

Belfast City Council / DFI



# 7 Work Packages – Identifying demand

App Development to locate demand.

- Householders take picture of the area they want EV charger
- Download it to app-  
Loughborough University hold information
- Resident then requests charging point from Virgin Media



# PV Panelled EV hub - £350k





# INTERREG – FASTER project

- £9.2m bid -17 partners
- 73 Rapid charge points
- Border counties of ROI, NI and highlands of Scotland
- Renewable energy proposition
- Bid announcement expected in months.







There are more grounds for optimism here than in most other capital cities in the world today. Make sure you don't forget that. Set yourself some stretch goals that really extend expectations about what you can achieve so that everyone reaches for those goals together."

Declan Kelly  
Former US Economic Envoy

