

WATERFORD CITY & COUNTY COUNCIL

Roadmap to Carbon Neutrality 2040



Contents

CLIMATE EMERGENCY	3
ACTING LOCAL	4
THE ROADMAP	7
PROGRAMME GROUPS	7
1 Carbon Neutral Businesses and Services.....	8
2 Carbon Neutral Homes.....	10
3 Carbon Neutral Travel.....	12
4 Sustainable Consumption.....	14
5 Developing Renewable Energy Sources Locally.....	16
6 Increasing Resilience.....	18
KEY ENABLING MEASURES	7
A Developing A Centre of Excellence	20
B Financing The Measures	22
C Working Together	24
CORE PARTNER – WIT/TUSE	26

Climate Emergency

It is now clearer than ever, that as result of ever increasing levels of Green House Gas (GHG) emissions in recent decades, the pace of change in the world's climate is accelerating and rapidly reaching a point where immediate action is urgently needed if we are to avoid the permanent and catastrophic climatic consequences which will follow for us and for future generations.

This summer across wide swathes of Europe and the Northern Hemisphere we have witnessed a scale of human tragedy and loss arising from a series of devastating floods, fires and record high temperatures directly attributable to the impacts of a rapidly changing world climate and a grim foretaste of what our future might look like.

This was further evidenced by the latest report from Intergovernmental Panel on Climate Change (IPCC) published in August 2021 which lays out in the starkest terms the catastrophic impact of the now accelerating changes to our climate and makes it clear that the world is rapidly reaching a point of no return with the prospect of irreversible damage already having been done and as of yet no consistent worldwide effort being made to achieve the emission reduction targets agreed upon in the 2015 Paris Agreement.

In an Irish context and where Ireland currently has the third highest GHG emissions per capita in the EU, the Environmental Protection Agency (EPA) published its

Status of Irelands Climate report in August 2021 which identified increased rainfall, increased air temperatures and rising sea levels in recent years among a number of changes to our climate arising directly from GHG emissions that have already occurred.

All of the international and national scientific advice is that across all sectors and levels of our society urgent action is required now if we are to avert the worst impacts of human induced climate change and the longer we wait the more difficult and costly it will be to transition to a net zero carbon-free society. If we fail to act now, the higher the chances are that climate change will have the most serious and far reaching impacts on how we live not just on a global scale but locally jeopardizing the liveability of our communities. In a local context, Waterford will likely be confronted with an unpredictable climate, marked by more frequent and longer periods of drought, flooding, storms, heat stress and as a coastal county with many low lying areas and communities, particularly vulnerable to rising sea levels.

Acting Local

In Ireland's Climate Action Plan, local authorities were identified as key enablers in advancing climate action in their local areas and the Plan required that each local authority would identify a Decarbonising Zone.

In April 2021 Waterford City and County Council agreed that Waterford City would be the designated Decarbonising Zone (DZ) for Waterford.

The Waterford City Decarbonising Zone is intended to act as a "Transition Super-Lab" where real-life initiatives to manage the transition from a fossil fuel based local economy to carbon Net Zero will be designed and implemented with the development of a full range of policies and projects specific to the area including building energy efficiency, sustainable transport, renewable energy generation and carbon sequestration.

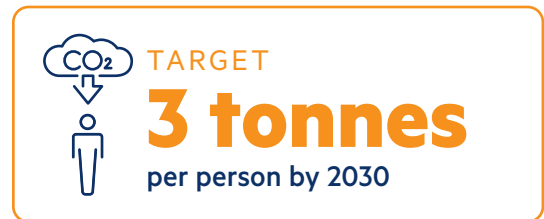
Waterford City will lead as a flagship demonstrator where research, business and the wider community will co-produce integrated solutions that will be scaled for roll out across the other urban and local communities in Waterford.

While responding effectively to the growing climate crisis will require significant changes and disruption to our lives, this can be counterbalanced by the tremendous social and economic opportunities that are there to be seized. We can exploit these opportunities to strengthen the knowledge economy, spur technological innovation, create new jobs and improve the quality of life for all.

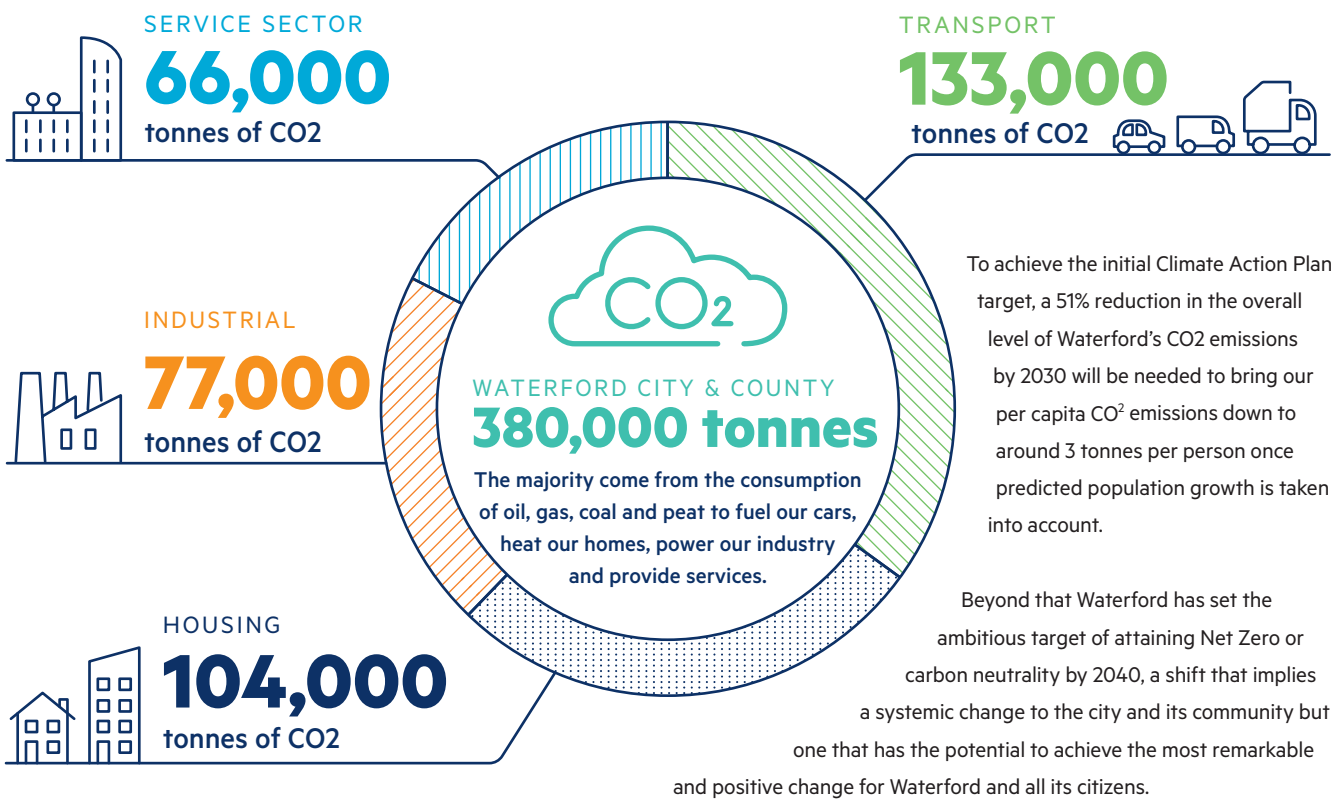
Where are we now and where do we need to get to?

In European terms Waterford is a compact city with a population of circa 50,000. It serves as the regional capital of the South East region with a profile that includes a large and modern industrial base, third level education, regional medical facilities, large retail / services sector, air, sea, rail and road transport links etc.

In terms of the greenhouse gas emissions, Waterford would be very similar to other urban areas and indeed Ireland as a whole with estimated annual CO₂ emissions of circa 380,000 tonnes – that’s almost 7.6 tonnes each for every single person living in the city.



Where do these emissions come from



This Roadmap is a guide to how Waterford intends to achieve this ambition.

66

Prioritising quick wins while developing knowledge and sustaining constant pressure towards collaborative and sensible behavioural change.”



The Roadmap

The Roadmap is structured around six programme groups to deliver a carbon neutral Waterford that are targeted at reducing or eliminating our major emissions and developing sustainability through collaboration, innovation and behavioural change. We also intend to develop three key enabling measures as drivers of change.

Programme Groups

1. Carbon neutral businesses and services
2. Carbon neutral homes
3. Carbon neutral travel
4. Sustainable Consumption
5. Developing renewable energy sources locally
6. Increasing urban resilience

These programme groups are developed into individual action plans with quantitative targets and measurement where possible. The programme groups will be resourced as indicated hereunder with a lead person and team. The action plans will be developed and refined on an ongoing basis and it is acknowledged that plans will have to be adapted to take account of changing circumstances in technology, public policy and citizen engagement and based on developed experience.

Key Enabling Measures

- A. Developing A Centre Of Excellence
With Appropriate Governance
- B. Financing The Measures
- C. Working Together

This Council intends to establish a Centre of Excellence to drive the actions on this roadmap with its own Board, Chief Executive, Sectoral Advisory Groups, Programme Leads and teams with personnel of expertise in the areas of climate change, renewables, active travel, behavioural change and citizen engagement.

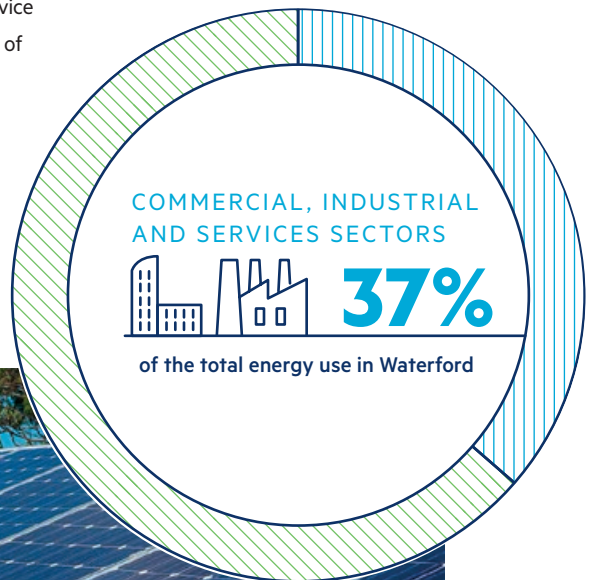
Our intention is, to paraphrase the old Chinese saying, to eat the elephant one bite at a time, prioritising quick wins while developing knowledge and sustaining constant pressure towards collaborative and sensible behavioural change. The use of a roadmap is to reflect that this will be a journey requiring the support of many partners and the broad population. Our philosophy will not be of lecturing or telling people what to do but one of asking people to join us on the journey to making Waterford best in class in respect of quality of life and sustainability.



Carbon Neutral Businesses and Services

Energy use generated by and ancillary to the commercial, industrial and services sectors represents a large proportion of the order of 37% of the total energy use in Waterford. In general the industrial sector is probably leading on the path to carbon neutrality with many large enterprises having Green objectives at the core of their corporate strategies.




The goal of this Council is to support and enable businesses and service providers to transition to carbon neutral through robust assessment of their carbon footprint and the development of transition plans. This will of necessity require assessment by businesses of their energy usage, waste generation, procurement strategies, building and equipment performance and travel generation among other things, along with their potential to use renewable energy. Our objective will be to support and assist businesses, along with providing expertise and training.



KEY ACTIONS

- 1 Develop an emissions baseline for the industrial, commercial and services sector
- 2 Provide advisory support, develop site leads and carbon neutral plans with large industrial and commercial enterprises and with public service providers
- 3 Establish geographic and common interest clusters/networks of enterprise to share knowledge and support systems
- 4 Engage and support large site landlords in the retro fitting of their building stock to NZEB standards
- 5 Develop self assessment tools and improvement plans for all medium and small enterprises. Incentivise engagement through financial instruments
- 6 Provide advisory support for retrofitting of non-residential buildings to NZEB standards
- 7 Develop a membership/certification/participation system for industry and commerce
- 8 Ensure smart design to achieve NZEB standards for all new industrial and commercial buildings through the planning system
- 9 Encourage the use of sustainable and carbon neutral building materials through the planning system and otherwise
- 10 Promote the Circular economy
- 11 Make better use of the existing building stock
- 12 Provide training and up skilling to employees across the industrial, commercial and services sector

KEY METRICS

-  Emissions
-  Use of renewables and energy efficient technologies
-  Industry, commerce and service provider engagement

KEY PARTNERS





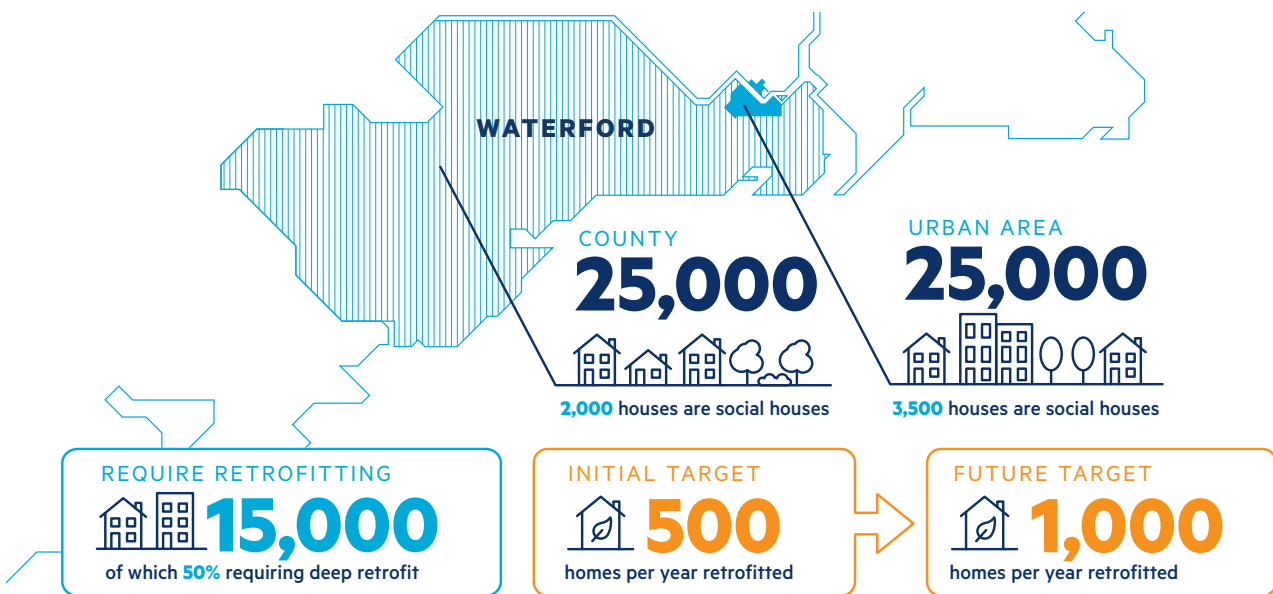
Carbon Neutral Homes

The greater Waterford urban area has approximately 25,000 homes with a further 25,000 across the county. Of those in the city about 3,500 houses are social houses, while approximately 2,000 social houses are in the county. Approximately 40% of all homes are of relatively recent construction (less than 30 years) but even these vary in terms of energy efficiency with only the most recent constructed to very high energy ratings (B+) and with sustainable energy systems. Older stock by its nature tends to have poorer energy efficiency. Supplying houses with heat is the single largest source of energy consumption in homes and the challenge therefore is to address the retrofitting of older homes to the highest standard viable, to maximise the use of sustainable heating systems and to ensure maximum benefit is gained from the imminent provision of smart metering systems and through the promotion of renewable energy sources.

The current rate of retrofitting in Waterford City is almost certainly less than 200 units per year. In the core urban area at least 15,000 homes will need to be retrofitted with up to 50% of these requiring deep retrofit. A realistic early target would be to transition this to 500 per year with the ultimate objective being a retrofit rate of 1,000 per year. The use of fossil fuels for heating, and for the supply of hot water for domestic use, will need to be kept to a minimum. A retrofitted home has many advantages (a lower energy bill, a higher level of comfort, higher real-estate value), but getting there is complex with finance availability and processes, grant availability and processes, householder knowledge, skills availability and lack of immediate economic return being retarders to activity.




It will be a core objective of the Centre Of Excellence to simplify processes for householders, provide a free advisory and support service and to establish co-operative community activity across city and county.



KEY ACTIONS

- 1 Develop a baseline database of Building Energy Ratings (BER) across city and county
- 2 Reach out to private owners of residential buildings
- 3 Prepare an accelerated programme for social housing retrofit
- 4 Put in place a responsive advisory and support service
- 5 Develop carbon neutral community co-operatives across city and county
- 6 Establish a Green Fund with financial providers to simplify access to capital
- 7 Enhance and promote participation in the development of retrofit skills
- 8 Promote the use of micro-renewables and energy efficiency technologies
- 9 Ensure all new homes are constructed to a BER rating standard of A2 – A3
- 10 Ensure reuse of existing housing stock

KEY METRICS

- | | |
|--|--|
|  Number of private houses retrofitted |  Community and Citizen Engagement |
|  Number of social houses retrofitted |  Extent of micro-renewables |

KEY PARTNERS





Carbon Neutral Travel

Mobility from, to, and within Waterford accounts for over 35% of total emissions and are continuing to rise. Traditional mindsets and reliance on the car will have to radically alter, along with an accelerated transition to green vehicles in line with National policy. The allocation of additional space to pedestrians and cyclists on our road network will be necessary while preserving access to our city for those without public transport options and outside of walking and cycling range. Active travel will be placed at the heart of the development of our city with an emphasis on the creation of sustainable 10 minute neighbourhoods with ready sustainable access to a vibrant city centre being our ambition.









MOBILITY
35%
of total emissions



KEY ACTIONS

1	Collate baseline travel data and develop an integrated mobility policy	9	Retrofit our road lighting with energy efficient lamps and implement dimming strategies to reduce levels of usage
2	Provide city centre integration of Sustainable Transport modes	10	Develop car sharing schemes
3	Establish low-traffic city centre, neighbourhoods, and school environments	11	Discourage car use and tighten parking policy
4	Facilitate travel by foot	12	Green the vehicle fleet
5	Develop an extensive cycle network and provide secure cycle parking and work to significantly increase cycling's modal transport share	13	Set up a comprehensive network of EV charging stations and promote the development of a high speed EV charging network
6	Introduce a public bicycle hire scheme in Waterford City	14	Promote working from home and remote working
7	Expand the use of public transport	15	Create sustainable neighbourhoods and city centre and density development through the planning process
8	Expand shared mobility		

KEY METRICS

 Increase in walking rates	 Increase in car sharing	 Greening of vehicle fleet
 Increase in cycle rates	 Consumption of energy by travel and public lighting	 Reduced employee travel
 Public transport usage		 Citizen engagement

KEY PARTNERS





Sustainable Consumption

The consumption of food and goods accounts, along with handling of waste arisings, for a significant amount of the city's carbon footprint. The vast majority of goods and food is produced outside of Waterford and thus is not counted among the city's own emissions.





Nonetheless, the issue of consumption needs to be addressed with consumers and the distribution, retail and waste management sectors if we are to strive towards a circular economy. An expansion of the repair and reuse economy represents both an opportunity and a challenge. With respect to food we are fortunate to sit at the centre of an extensive and fertile agricultural region, yet the food miles being generated are significant and need to be reduced. The promotion of healthy eating with an emphasis on locally produced seasonal food is not alone in the interests of the health and quality of life of the population but more sustainable from the perspective of carbon footprint.



KEY ACTIONS

- 1 Establish sectoral groups in retail, agri-food, waste management and hospitality sectors
- 2 Promote sustainable and healthy food
- 3 Decrease food waste and food packaging
- 4 Develop a flagship market for sustainable food
- 5 Promote innovation in sustainable agriculture and nutrition
- 6 Develop awareness campaign on sustainable consumption
- 7 Stimulate the sharing, reuse and repair economies and waste food to energy potential
- 8 Reduce waste and improve recovery of discarded products and materials

KEY METRICS

-  Waste generation rates
-  Number of repair and reuse schemes and outlets
-  Retail and hospitality engagement
-  Consumer awareness

KEY PARTNERS





Developing Renewable Energy Sources Locally

Waterford currently produces less than 1% of its own electricity and less than 5% of own heating requirements through renewable energy sources. The core objective of the Roadmap to Carbon neutrality is obviously to minimise to the greatest extent possible the use of energy but a significant energy demand will still have to be met and it is imperative that this demand is met from renewable sources with as much as possible generated locally.

The installation of smart meters in the coming years along with developing technologies will enable micro-generation at household level to play a valuable role in future years. At greater scale Waterford will have to facilitate the development of renewables across solar, wind and biomass if carbon reduction targets are to be met with local buy-in and to maximise the use of the grid infrastructure. The purchase of renewables from the National energy sector will also be necessary. It is acknowledged that the existing gas infrastructure cannot be simply made redundant immediately but will require a longer term transition to more sustainable forms.



KEY ACTIONS

- 1 Quantify existing renewable energy installations and develop a renewable energy strategy for the city
- 2 Promote the use of micro-generation at household level
- 3 Develop a micro-generation advisory and support service
- 4 Identify opportunities in the commercial and industrial sectors for renewable generation and in innovative emerging technologies
- 5 Develop energy co-operatives
- 6 Establish two landmark renewable developments per decade
- 7 Explore the potential for District Heating Schemes in Waterford City
- 8 Develop innovation and knowledge in biomass generation
- 9 Enhance the skills base in renewables

KEY METRICS



% of renewables generated and used



Number of renewable energy enterprises



Extent of micro-generation established

KEY PARTNERS





Increasing Resilience

Waterford is lucky in many respects in having significant green lungs in the city with the Kilbarry Bog and Eco-Park and the Suir corridor being significant amenities along with locations of carbon sequestration.

Public parks and existing tree stands contribute significantly to the greening of the city but much more will need to be done. We are equally lucky to have had the foresight to implement, with the assistance of the Office of Public Works, a comprehensive flood protection scheme which has already proven its value and will be ever more needed in an estuarine city vulnerable to both fluvial and tidal influences. Notwithstanding this we will need to continue to adapt and position ourselves to deal with the impacts of climate change. Further greening of the city, increased use of unsealed surfaces, the enhancement of biodiversity and added sequestration of carbon will be required. Our position of having the city and county combined further enhances opportunity with increased afforestation and biomass production significant opportunities in the wider Waterford for wider contribution to the path to carbon neutrality.



KEY ACTIONS

- 1 Develop a city Greening Plan
- 2 Enhance bio-diversity in the environment
- 3 Expand carbon capture and storage
- 4 Develop a landmark biodiversity and carbon storage project
- 5 Embed resilience in the planning process for new developments

KEY METRICS

-  Increased City Greening  Carbon capture  Biodiversity enhancement

KEY PARTNERS





Developing A Centre of Excellence

It is the intention of Waterford City and County Council to develop a centre of excellence based in its own offices in the city and branded under the Project 2040 banner. It will have its own board and be led by a Chief Executive who will be a member of the Council's Senior Management Team. The Chief Executive will report to a 10 person Board led by a Chair and with persons holding competencies in the following areas – business, finance, renewables, behavioural change and technology. The development of key strategic and operational leadership, at board, chief executive and team lead level, is key to the success of this endeavour, along with the determined support of the broader Council.

The Centre of Excellence will be organised around the core specific programme groups and a cross cutting behavioural change group as follows;



Carbon neutral businesses and services

This programme group will have a lead and a team of six personnel with competencies in energy auditing, renewables, administration and business engagement.

Carbon neutral homes

This programme group will have a lead and a team of 6 personnel with competencies in housing retro-fit, micro-renewables and citizen engagement.

Carbon Neutral travel

This programme group will have a lead and a team of 8 persons with competencies in active travel project design and delivery.



Developing Renewable Energy Locally

This programme group will have a lead and 3 personnel with particular competencies in the delivery of renewable energy projects.

Behavioural Change

This group will have a lead and a team of 8 people with core responsibility for the development of the Sustainable Consumption programme along with providing cross-cutting services to the other teams. The team will have competencies in marketing, communications and citizen and community engagement.

Administration

The Centre of Excellence will require 3 people as an administrative support to the teams.

The local authority itself will retain responsibility for the programme Increasing Urban Resilience and will seek to ensure that future development will be carbon neutral through its Development Plans and planning control processes.

Financing The Measures

It is critical that the Centre of Excellence is appropriately resourced and has the appropriate governance and competencies. The staffing costs will be of the order of €2 million per annum and additional resources will be required for office provision, marketing and communication campaigns, training and other overheads.



SOURCES OF FUNDING

Council

Waterford Council considers the transition towards carbon neutrality a top priority and will provide €1 million per annum towards the Centre of Excellence.

NTA

The National Transport Authority is already committed to supporting the team for the Active Travel Programme.

Climate Action Fund

At a national level the Climate Action Fund is intended to support measures such as the Centre of Excellence and this Council will be making active applications for support from the fund as the first city in Ireland to embrace the carbon neutral objective.

European Funding

The EU supports climate action through a number of its programmes and this Council will be seeking to access funding for its Centre of Excellence through these sources. There are also a number of instruments and agencies such as the European Investment Bank and the European Green Deal available to help fund investments in the Green Energy area and we will be seeking to maximise use of these instruments to support game changing projects over the life of the Roadmap.

Commercial Partners

There are a number of potential commercial partners in the renewable energy sector and other sectors and this Council will be seeking to establish such partnerships without compromising the overall objects of the Centre of Excellence or generating any conflicts of interest.





Working Together

“In order to achieve the substantial behavioural changes required to achieve Carbon Net Zero by 2040 it is critical that we establish “Climate Team Waterford” to achieve our goals and aims. It is important that “Climate Team Waterford” is fully inclusive and leaves no-one behind. “Climate Team Waterford” will aim for fair and equitable distribution of benefits across the different programme groups and suite of mitigation and adaptation actions.

A number of special initiatives will be pursued in this context.



POSITIVE COMMUNITY ENGAGEMENT

Council Oversight

The elected Council as the representatives of the people and significant funders of this initiative will have oversight of operation of the Centre of Excellence through 6 monthly attendance and reporting on objectives by the Chairman and Chief Executive of the Centre.

A Project 2040 Youth Assembly

The centre of excellence will develop a youth assembly of persons under 25 years of age as a forum for dialogue, information sharing, idea generation and onward communication of intended measures.

Partner Advisory Groups

The individual programme groups in this Roadmap all have key stakeholders or partners who are critical to success. The Centre of Excellence will develop an advisory grouping for each of the programme areas to facilitate oversight, interaction and engagement on issues.

Citizen Engagement

The Centre of Excellence will strive to be best in class in respect of citizen engagement and will develop an engagement scheme and pledge scheme for direct citizen involvement and alignment with the process. The Centre will vigorously use Customer Response Management systems to ensure the highest standards of engagement are sustained. All policies and actions will be assessed against impact on the most vulnerable in society.

Wider European Community

Waterford is not alone in seeking to achieve ambitious carbon emission reductions and there are many excellent examples in cities across Europe where emerging best practise in the field of climate neutrality is being developed. It is intended that Waterford will develop partnerships with such other cities with the view to learning from each other, adopting successful models and collaborating on projects.

Leave No-one Behind

It is important that there is a fair and equitable distribution of the benefits across the suite of mitigation and adaptation actions. Inclusivity will be a central theme of all programme groups to ensure that all are brought along the journey to Carbon Net Zero. Specific actions will target vulnerable groups to reduce inequality and maximise benefits



Core Partner – WIT/TUSE

Acquiring new knowledge, sharing best practices, and monitoring progress will be key to implementing the Roadmap and to ensuring a continuous learning cycle. Evidence based decisions will be critical to success. To this end this Council views WIT and the future Technological University of the South-East as its key partner. The Institution will assist us in developing learning and skills, challenge us on our assumptions, reporting and monitoring and be a resource for research and innovation – aligning the local and the global.

In turn the institution will develop further establishing expertise in the climate change area and develop its education, research and innovation capacities while further progressing partnerships with technological and industrial enterprises in particular.





Waterford
Find your future

