

Chapter 3: Climate Action and Energy

3.1 Introduction

Ireland's climate is changing in terms of sea level rise, higher average temperatures, changes in precipitation patterns, more frequent weather extremes, the spread of invasive alien species and increased risk of wild fires, for example, upland gorse fires. Changes in Ireland's climate are in line with global trends; temperatures have increased by about 0.8° Celsius over the period 1900-2012 which is an average of about 0.07° Celsius per decade.

According to the Environmental Protection Agency's (EPA's) *Greenhouse Gas Emissions Projections Report 2017-2035*, climate change can result from natural processes and more recently due to human activities through emissions of greenhouse gases (GHGs).

The current global aim is to tackle climate change resulting from human activities whose greenhouse gas emissions are changing the composition of the earth's atmosphere. The concentrations of heat-trapping greenhouse gases have increased significantly in our atmosphere beyond their natural levels.

The *fifth assessment report of the Intergovernmental Panel on Climate Change* (IPCC, 2013), concluded that there is at least a 95% probability that the global warming of the last 50 years is a result of human activities, with the main contribution to this warming coming from the burning of fossil fuels. As a result, levels of atmospheric GHGs are now 30% higher than at any time during the last 800,000 years.

In global terms, Ireland is a small country with a relatively small population. However, Ireland's greenhouse gas emissions per person are amongst the highest of any country in the world. The argument that we are too small a country to make a difference holds no ground - climate change is a global problem that requires a strong and coherent response at global, European, national, regional and local level involving appropriate adaptation measures.

3.1.1 Global Level

The Paris Agreement entered into force on 4 November 2016, and was adopted by 195 parties to the UN Framework Convention on Climate Change - representing 95% of global GHG emissions. The Paris Agreement aims to keep global warming below a 2°C increase by the end of the 21st century and pursue efforts to limit the temperature rise to 1.5°C, according to the recommendations of the IPCC.

3.1.2 European Level

The 2030 targets provided under the EU Effort Sharing Regulations 2018 set by each EU member state range from 0% to 40% reduction in GHG emissions compared to 2005 levels, factoring in a flexibility which depends on their GDP per capita in the interests of fairness and cost-effectiveness. Ireland's target is set at 30%. The European Commission will report annually on progress towards achieving the targets. Where a member state does not meet its annual obligation in any year, taking into account

the use of flexibilities, the shortfall is multiplied by a factor of 1.08 and this penalty is added to the following year's obligation.

The *EU Commission European Green Deal 2019* sets out a roadmap for making the EU's economy sustainable by turning climate and environmental challenges into opportunities across all policy areas and making the transition just and inclusive for all with an overall target of having no net emissions of GHGs in 2050.

The EU will also provide financial support and technical assistance to help people, businesses and regions that are most affected by the move towards the green economy. This is called the Just Transition Mechanism and will help mobilise at least €100 billion over the period 2021-2027 in the most affected regions.

3.1.3 National Level

The Climate Action Plan 2019 to Tackle Climate Breakdown is committed to achieving a net zero carbon energy system for Irish society and create a resilient and sustainable country. Decarbonisation is a must if the world is to contain the damage from the impact of GHG emissions and build resilience for our countries and communities. The Climate Action Plan sets out over 180 actions, together with hundreds of sub-actions, that need to be taken at a time when the warning signs are growing, and the time for taking action is rapidly reducing. It identifies how Ireland will achieve its 2030 targets for carbon emissions, and puts us on a trajectory to achieve net zero carbon emissions by 2050. Every relevant sector is addressed: electricity, enterprise, housing, heating, transport, agriculture, waste, and the public sector. In particular, the Climate Action Plan states that better land use management should be responsible for 26% of total carbon dioxide emission reductions over the period 2021 to 2030.

The *National Adaptation Framework (NAF); Planning for a Climate Resilient Ireland (2018)* by Department of Communications, climate action and Environment (DCCA) (which was developed in accordance with section 5 of the Climate Action and Low Carbon Development Act 2015) sets out the national strategy to reduce the vulnerability of the country to the negative effects of climate change and to avail of positive impacts. It outlines a whole of government and society approach to climate adaptation. Under the Framework a number of Government departments will be required to prepare sectoral adaptation plans in relation to a priority area that they are responsible for. The Framework states that regardless of how successful efforts to reduce GHG emissions prove to be, the impact of climate change will continue over the coming decades because of the delayed impacts of past and current emissions.

This NAF and its successors will set out the context to ensure local authorities, regions and key sectors can assess the key risks and vulnerabilities of climate change, implement climate resilience actions and ensure climate adaptation considerations are mainstreamed into all local, regional and national policy making.

The *National Planning Framework 2018-2040* has as a National Strategic Outcome; 'transition to a low carbon and climate resilient society'.

Every year Government issue an *Annual Transition Statement* which includes an overview of climate change mitigation and adaptation policy measures adopted to reduce GHG emissions and to adapt to

the effects of climate change in order to enable the achievement of the national objective of transitioning to a low carbon, climate resilient and environmentally sustainable economy by the end of 2050.

The *National Mitigation Plan (NMP) 2017* by Department of Communications, Climate Action and Environment (DCCA) includes over 100 individual actions for various Ministers and public bodies to implement in an effort towards decarbonising our economy, progress of which will be reported to Government annually in its Annual Transition Statement. The actions relate to decarbonising electricity generation, the built environment, transport and agriculture, forestry and land use sectors. The NMP will be succeeded by new NMPs at least every 5 years as provided for under the Climate Action and Low Carbon Development Act 2015.

3.1.4 Regional Level

The Regional Spatial and Economic Strategy (RSES) 2019 for the Eastern and Midland Region sets out an integrated policy to enable the creation of a sustainable region with the capability to be resilient to future climate change. The RSES identifies a number of key Regional Strategic Outcomes which include; the need to conserve and enhance the biodiversity of our protected habitats and species including landscape and heritage protection; to identify, protect and enhance our Green Infrastructure and ecosystem services; to ensure the sustainable management of our natural resources; to build climate resilience, to support the transition to a low carbon economy by 2050 and the protection of the healthy natural environment to ensure clean air and water for all.

3.1.5 Climate Adaptation and Mitigation

The impacts and risks of climate change can be reduced and managed through mitigation and adaptation actions. The aim of **climate adaptation** is to reduce the vulnerability of our environment, society and economy and increase resilience. Climate adaptation involves taking steps to adjust human and natural systems in response to existing and anticipated impacts and to take advantage of new opportunities that may arise. Adaptation also brings opportunity through green growth, innovation, jobs and ecosystem enhancement as well as improvements in areas such as water and air quality. One of the key issues relating to the preparation of a Development Plan in the context of climate adaptation is flooding. Strategic Flood Risk Assessment (SFRA) facilitates the appropriate zoning of areas that are at elevated risk of flooding and the integration of flood risk management provisions into Development Plans. **Climate mitigation** describes action to reduce the likelihood of climate change occurring or reduce the impact if it does occur. This can include reducing the causes of climate change (for example, emissions of GHGs) as well as reducing future risks associated with climate change. One of the key issues relating to the preparation of Development Plans in the context of climate mitigation relates to GHG emissions arising from transport. Development Plans are primarily land use plans, and land use plans and transport are closely linked. By improving sustainable mobility through land use planning, Development Plans have the potential to reduce existing levels of GHG emissions and limit increases in future emissions. Other beneficial effects arising from climate mitigation include contributions towards reductions in energy consumption, increases in alternative energy usage, maintenance / improvement of air quality and reductions /limits in noise emissions.

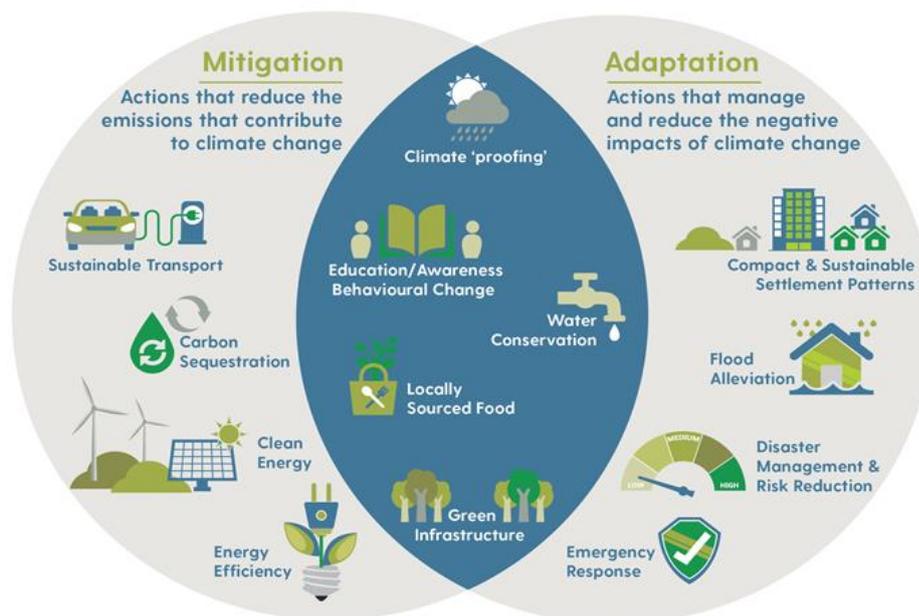


Figure 3.1 Mitigation and Adaptation Actions (Source: Eastern and Midland Climate Action Regional Office).

3.1.6 Local Level (County Offaly)

Whilst Offaly has a long history of energy production related predominantly to the commercial exploitation of peatlands, national environmental policies are dictating the wind down of traditional fossil fuel powered stations and a diversification of our energy production towards green energy such as wind, solar and bioenergy. Offaly County Council recognises the potential economic benefit of a transition from fossil fuel based energy production through to investment in renewable energy, the promotion of the green enterprise sector and the creation of green collar jobs; all components of a local 'smart green economy'.

Offaly County Council adopted a *Climate Change Adaptation and Energy Efficiency Strategy* for the county in 2019, which takes on the role as the primary instrument at local level to:

- (i) ensure a proper comprehension of the key risks and vulnerabilities of climate change;
- (ii) bring forward the implementation of climate resilient actions in a planned and proactive manner; and
- (iii) ensure that climate adaptation considerations are mainstreamed into all plans and policies and integrated into all operations and functions of Offaly County Council.

3.1.7 Legislative and Policy Context

In the preparation of this chapter of the Plan, regard has been had to the following;

- EU Renewable Energy Directive 2009/28/EU
- 2030 EU Climate and Energy Framework 2014
- EU Effort Sharing Regulations 2018
- EU Floods Directive 2007/60/EC
- EU Directive 2001/77/EC Renewable Energy
- EU Directive on the Energy Performance of Buildings (2002/91/EC)
- The Paris Agreement 2015
- EU Commission European Green Deal 2019
- Fifth Assessment report on the Intergovernmental Panel on Climate Change, 2013
- EU Clean Energy for All Europeans 2016
- Project Ireland 2040 National Planning Framework
- National Development Plan 2018-2027
- Regional Spatial and Economic Strategy 2019
- National Policy Position on Climate Action and Low Carbon Development 2014
- Energy White Paper Ireland's Transition to a Low Carbon Energy Future 2015 -2030
- A Roadmap for Moving to a Competitive Low Carbon Economy in 2050
- National Adaptation Framework, Planning for a Climate Resilient Ireland, 2018
- The National Climate Change Adaptation Framework Plan 2018
- The Climate Action and Low Carbon Development Act 2015
- Local Authority Adaptation Strategy Development Guidelines 2014
- National Mitigation Plan 2017
- Annual Transition Statement 2018
- National Policy Framework, Alternative Fuels Infrastructure for Transport in Ireland 2017-2030
- Environmental Protection Agency's Greenhouse Gas Emissions Projections Report 2017-2035
- National Peatlands Strategy 2015
- Climate Action Plan 2019; To Tackle Climate Breakdown by Government of Ireland

- Environmental Protection Agency’s 2019 guidance note ‘Integrating Climatic Factors into the Strategic Environmental Assessment process in Ireland’
- Offaly County Council Climate Change Adaptation and Energy Efficiency Strategy 2019
- Grid Development Strategy – Your Grid, Your Tomorrow, Eirgrid, 2017
- Tomorrow’s Energy Scenarios 2017 – Planning our Energy Future, Eirgrid
- Eirgrid’s Tomorrow’s Energy Scenarios 2019 System Needs Assessment
- The Planning System and Flood Risk Management Guidelines for Planning Authorities, 2009
- Ireland’s National Forest Inventory 2017
- Building Regulations Part L (2007- 2011)

3.2 Renewable Energy

Under *EU Directive 2001/77/EC Renewable Energy*, renewable energy sources are defined as renewable non-fossil energy sources such as, but not limited to wind, solar, geothermal, wave, tidal, hydropower, bioenergy, landfill gas, sewage treatment plant gas, bio-gases and bio-char (i.e. the thermal treatment of natural organic materials in an oxygen-limited environment).

3.2.1 Circular Bio Economy

The circular economy and bio economy involves the value of all products, materials and resources being maintained for as long as possible and waste is significantly reduced or even eliminated. The circular economy and particularly the bio economy (the biological element of the circular economy) can produce opportunities for forest based biomass and residues and agriculture residues such as from crops, animal and dairy by-products to be used to produce biomaterials and biochemicals through biorefining or to produce heat and / or power through combustion or anaerobic digestion. Biorefining provides a strategic opportunity for largescale sustainable use of biomass in the bio economy resulting in cost-competitive co-production of food and feed ingredients and also bio-based products and bioenergy with optimal socioeconomic and environmental impacts (for example, efficient use of resources and reduced GHG emissions).

The circular economy approach is also applicable to land use management. The extent to which we prioritise brownfield over greenfield use, encourage the use and reuse of buildings in urban and rural areas, and reduce sprawl will all help to increase the efficiency of land use.

3.2.2 Geothermal

Geothermal energy refers to heat energy stored in the ground. Ireland is particularly well suited to the use of ground source heat pumps, due to its temperate climate, along with rainfall levels that ensure good conductivity and year round rainfall recharge. Heat is supplied to the ground from two sources, namely the hot core of the planet and the sun. It can be classified as either ‘deep’ or ‘shallow’

depending on the depths from which it is sourced. The deep geothermal energy can only be accessed through geological processes or by drilling through the surface. The second source of heat in the ground is from radiation from the sun. This energy can be regarded as stored energy which stays relatively warm throughout the year. The heat can then be extracted by using a ground source heat pump.

3.2.3 Hydro Energy

Hydroelectricity is electricity derived from the power harnessed from the flow of falling water, typically from fast-flowing streams and rivers. Small-scale micro hydro power is both an efficient and reliable form of energy and can be a viable way of providing power to houses, workshops or businesses that need an independent supply. In responding to planning applications, the Council will seek to ensure that the free passage of fish is provided for by incorporating a fish pass where considered necessary in consultation with the relevant Fisheries Board and the Department of Communications, Energy and Natural Resources. Many of the rivers and tributaries in the county are protected under the Birds and Habitats Directives or another heritage designation such as protected structures and this should be a consideration during the investigation of any possible site.

3.2.4 Solar Energy

There are three basic approaches used today to harness and gain maximum benefit of solar energy in buildings. These are Passive Solar; Active Solar Heating; and Solar Photovoltaic (PV) Systems. There are a range of technologies available to exploit the benefits of the sun, including solar panels, solar farms, and solar energy storage facilities, all of which contribute to a reduction in energy demand. Solar technologies can be designed into buildings or retro fitted.

Larger solar farms have potential to be built on agricultural land and leave room for dual land use so that farm practices, such as grazing, can co-exist with the ground mounted solar panels. These projects are much less visually intrusive than wind and some other forms of energy generation, but may have impacts on local ecosystems, wildlife and the land's agricultural potential.

The following site selection criteria for ground mounted arrays apply:

- Typically suited to low lying lands due to a need for level sites;
- Accessibility/proximity to electricity networks. Ability to achieve a network connection, typically via a 10kV or 20kV overhead cable on the electricity transmission grid. In general, it is not viable to locate solar farms over 1 km from network infrastructure;
- The reuse of previously developed land such as brownfield land, contaminated land or industrial land and non-productive agricultural land in preference to productive agricultural land;
- South facing aspect with either flat terrain or sloping gently; and
- Land free from obstacles that may cause shading.

3.2.5 Biogas from Landfills and Biomass

Landfill

Proposals to generate biogas or landfill gas power for electricity will be considered, on suitable sites, having regard to proper planning and sustainable development. Remote sites with 'antecedent' uses could be appropriate for these types of development. This type of development may be particularly suitable to combined heat and power developments. Subject to the assessment of the impacts on the environment and on the road network in the immediate area, such developments are generally subject to the Integrated Pollution Prevention and Control Licensing system, where environmental assessment will be the responsibility of the Environmental Protection Agency (EPA).

Anaerobic Digestion

Anaerobic digestion is a biological process in which microorganisms break down biodegradable material in the absence of oxygen. One of the end products is biogas, which can be combusted to generate electricity and heat, or can be processed into renewable natural gas and transportation fuels. Anaerobic digestion of farm or other wastes and by-products, will be considered, as the process has the potential to combat GHG concerns and to provide alternative sources of incomes to farmers or commercial opportunities for standalone businesses on compatibly zoned sites as outlined in Table 12.1 Land Use Zoning Matrix in Chapter 12.

3.2.6 Wind Energy

Site suitability is an important factor in determining the suitability of wind farms having regard to possible adverse impacts associated with, for example, residential amenities, landscape, including views or prospects, wildlife, habitats, designated sites, protected structures or bird migration paths and compatibility with adjoining land uses.

The Council is therefore required to achieve a reasonable balance between responding to overall positive Government policy on renewable energy and enabling the wind energy resources of the Planning Authority's area to be harnessed in a manner that is consistent with proper planning and sustainable development.

The Council recognises that community ownership of wind energy projects enables local communities to benefit directly from local wind energy resources being developed in their local areas, ensuring long-term income for rural communities.

Wind Energy Strategy

A County Wind Energy Strategy forms part of this Development Plan. The Strategy constitutes a plan led approach to wind energy development in County Offaly and sets out areas 'open for consideration' for wind energy developments and considerations for the evaluation of wind energy planning applications.



Figure 3.2 Mountlucas Windfarm

3.3 Micro Renewable Energy

Certain energy installations that qualify as being micro-generators will also qualify for an exemption from requiring planning permission as per the provisions of the Planning and Development Regulations 2001 (as amended). These planning exemptions apply to residential scale and some commercial scale wind turbine, solar arrays, heat pumps and biomass boilers subject to meeting certain conditions. The Council encourages the small scale generation of heat and electricity by individuals, small businesses and communities to meet their own needs and as an alternative to or to supplement grid connected power.

3.4 Electricity Transmission and Distribution

There is a strong electricity network traversing County Offaly. The existing transmission network is comprised of 400kV, 220kV and 110kV infrastructure.

The regional demand centres, including Tullamore, and generation sources, including Mount Lucas Wind Farm, are mainly served by the widely dispersed 110kV meshed network, with the high capacity 400kV and 220kV circuits mainly transferring power through the region. This 400kV network includes both the Oldstreet-Woodland 400kV-Line and the Moneypoint-Dunstown 400kV Overhead Line, both which travel through County Offaly. The 400kV network is a critical piece of infrastructure which transmits electricity from Moneypoint in County Clare to the midlands and east of the island.

The 220kV network is focused mainly on the thermal facility at Shannonbridge in West Offaly, comprising the Shannonbridge-Killonan (Limerick) Overhead Line and the Shannonbridge-Maynooth (Kildare) Overhead Line.

EirGrid has constructed two new 100kV circuits in the region, namely Cushaling (Edenderry) – Thornsberry (Tullamore) and Kinnegad – Mullingar. These projects have strengthened the region’s transmission network by improving security and quality of supply and ensuring there is the potential for demand growth in towns including Tullamore.

The network can be seen in Figure 3.3 below.

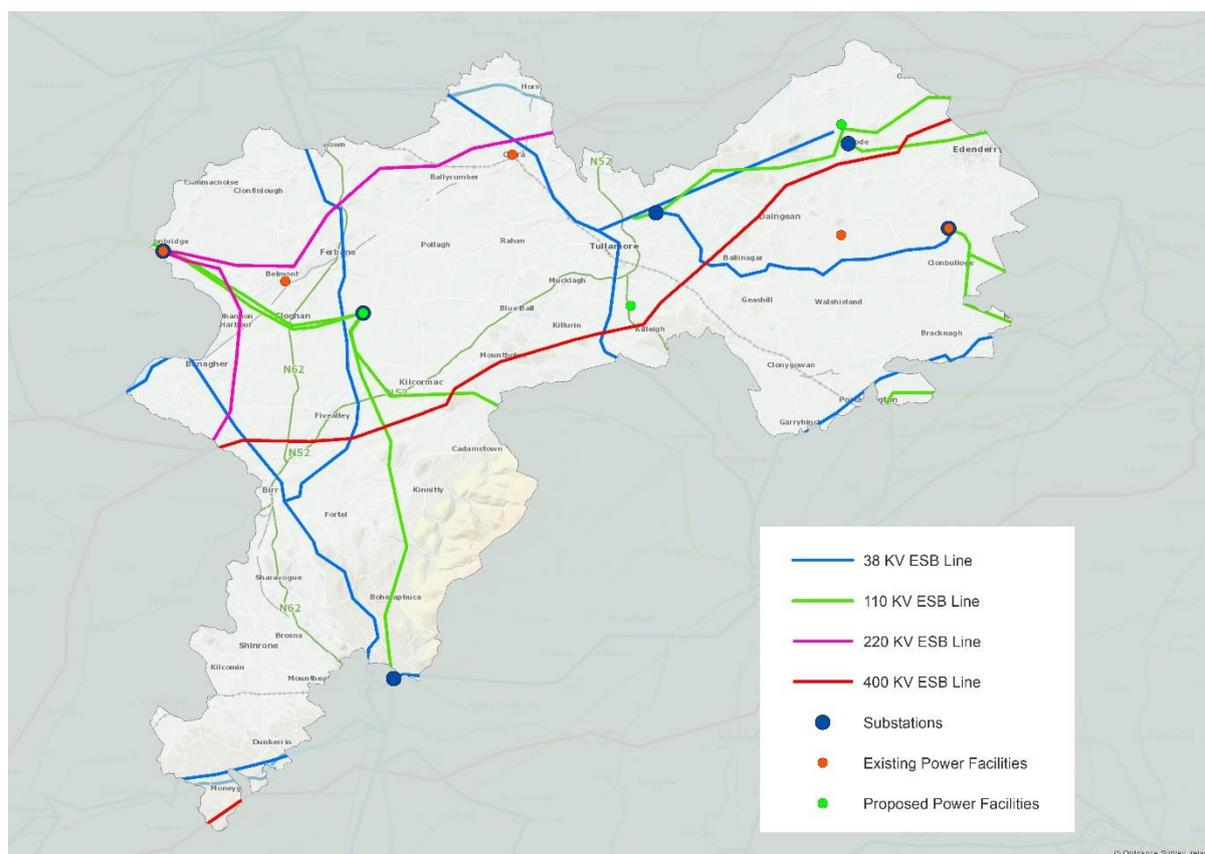


Figure 3.3 Existing Electricity Infrastructure in County Offaly

EirGrid is responsible for power across the electricity transmission grid, ensuring a safe, secure and reliable supply of electricity to homes, businesses and industry across the country while ESB networks are responsible for carrying out maintenance, repairs and construction on the grid.

A comprehensive development strategy for the country’s electricity infrastructure is provided in EirGrid’s 2017 publication *Grid Development Strategy - Your Grid, Your Tomorrow*, along with the associated *Grid Implementation Plan* for the initial period 2017-2022. In addition, EirGrid’s *Tomorrow’s Energy Scenarios 2017 - Planning our Energy Future* considers the range of possible ways that energy usage may change in the future, taking account of energy and climate change policies, economic developments, technology evolution and adaption, and other national and international policies.

The Council recognises that essential future upgrades are required to the electricity grid in the midlands as outlined in *Eirgrids Tomorrow's Energy Scenarios 2019 System Needs Assessment* and will support Eirgrid in future Programmes identifying grid solutions, in both infrastructural and technological terms, in order to facilitate the electricity targets, set out in the Government's Climate Action Plan 2019 and the National Energy and Climate Plan 2021-2030.

3.5 Energy Storage

Whilst renewable energy sources have vast potential to reduce dependency on fossil fuels and GHG emissions, many of the resources have intermittent or variable output, therefore if they are not harnessed, the energy goes to waste. As a result, there is an increased need for energy storage when energy demand is low so it can be used when energy demand is high. There are a number of storage systems which provide this function including pumped hydroelectric energy storage (PHES), battery storage and thermal storage. Two battery storage facilities of this nature have been developed at Shannonbridge and Lumcloon in the west of the county while another has been granted permission at Coolcur, Rhode.

3.6 Electric Vehicles, Fuel Cell Vehicles and Autonomous Vehicles

Electric Vehicles (EV) refer to both Battery Electric Vehicles (BEV) and Plug-in Hybrid Electric Vehicles (PHEV). All new cars sold in Ireland will be zero carbon emission or zero carbon emission capable by 2030 as well as many of our transport uses and rail lines. The ultimate aim is to decarbonise the national car fleet by 2050 so that it will be low or near zero emissions. There are a number of charging points around the county and this Plan promotes the further installation and expansion of charging points for these vehicles.

The Council will also promote and support the development of the necessary infrastructure required by Government to accommodate autonomous vehicles (self-driving) and fuel cell vehicles. 'Hydrogen fuel cell vehicles' use fuel cells to combine stored hydrogen with oxygen to generate electricity (as opposed to electricity from the public grid which currently is part-generated from fossil fuels), which then powers the vehicle's electric motors. They offer greater range and faster refuelling than current electric vehicles.

3.7 Peatlands

Peat-fired electricity generation will be phased out early this decade according to the Government's Climate Action Plan 2019. It is recognised that this phasing out or transition away from carbon intensive sources of energy will have a severe impact on workers and communities in the midlands. In recognition of this impact, the Government has committed to providing a 'Just Transition' for those affected, establishing a Just Transition Fund, which will support the retraining and reskilling of workers, provide for bog restoration and rehabilitation and deliver housing upgrades in these communities. In addition, a Just Transition Commissioner has been appointed to help ensure a co-ordinated and effective approach to Just Transition.

The inclusion of the midland region on the EU Platform for Coal Regions in Transition will greatly assist in providing for a Just Transition for the midland region. The aim of this EU Platform is to provide support for regions heavily involved in fossil fuel industries and provide opportunities for national, regional, and local representatives and EU staff to discuss how these regions can best decarbonise their economies. As part of this Platform, a Regional Transition Team was established to assist the midlands in planning for the phasing out of peat fired electricity generation.

Whilst recognising that the cessation of industrial peat harvesting will have positive environmental impacts, the Council supports the Regional Transition Team in pursuing funding opportunities and actions to mitigate the effects of these job losses, positioning the region to develop alternative forms of employment, attract investment and maximise existing employment opportunities and resources.

The Council recognises the great potential that the circa 80,000 hectares of industrial peatlands in the midlands offer in relation to after uses ranging from amenity, tourism, biodiversity services, 'wild areas', flood management, climate mitigation, energy development, industry, education, conservation and many more. The Council supports the preparation of a comprehensive after use framework plan for the industrial peatlands and associated workshops, office buildings, industrial sites and power stations in the midlands, which meets the environmental, economic and social needs of communities in these areas, and will work with all stakeholders involved in the process in this regard.

The Council considers that there is significant potential to develop a Green Energy Hub in County Offaly, which focuses on the higher order aspects of the industry such as research, new technologies, headquarter development, assembly, maintenance and financing, due to its extensive area of peatlands, its long history in power generation and its proactive position in relation to renewable energy developments over the past decade.

Offaly's extensive area of peatlands also offer considerable potential to accommodate the needs of the emerging and early deployment technologies for renewable energy and future energy storage on a regional scale such as data centres and battery energy storage.

3.8 Agriculture, Forestry and Land Use sector

Agriculture is both an emitter of GHGs and has the potential to absorb emissions; therefore, the Council will support the vision of carbon neutrality.

Ireland's National Forest Inventory 2017 states that there are approximately 29,300 hectares of forest cover and 170,770 hectares of non-forestry woodland in County Offaly. The Inventory also states that;

- 32.9% of forestry is public owned and 67.1% is privately owned; and
- broadleaf species comprises 54.1% and conifer species 45.9% of forest coverage in the county.

Offaly County Council recognises that trees and woodlands play an important role in the removal of carbon dioxide from the atmosphere. Through the biochemical process of photosynthesis carbon dioxide is taken in by trees and stored as carbon in the trunk, branches, leaves and roots. Carbon is also stored in the soil and indeed this is a major sink for carbon in the forest. Decay of the organic material eventually releases the CO₂ and other greenhouse gases back to the atmosphere, and provided the forests are sustainably managed and replanting takes place after clear-felling to guard

against deforestation, forests continue to sequester carbon and provide wood products in the future. The release of CO₂, however, can be delayed by harvesting of trees when they mature, if the wood is used for construction, furniture and other end uses that prolong its life.

To meet the required level of CO₂ reductions, the Climate Action Plan 2019 targets afforestation rates of an average of 8,000 hectares per year, in order to reach a national forestry land-cover target of 18% by the second half of this century.

3.9 Low Carbon District Heating

District heating is one of the most efficient and cost effective ways to heat apartments, homes and mixed use developments. District heating networks can be based on a variety of technologies and renewable energy sources, such as combined heat and power (CHP), bioenergy, geothermal or energy from waste. Such schemes work particularly well in built-up urban areas where there is a near constant demand. For the system to work, water is heated using a boiler located in a central heating plant. The heat is distributed to the individual houses via an underground network of insulated pipes. The water in the network is continually circulating and always available. Immersion heaters, boilers and hot water storage tanks are not required which frees up space for other purposes. The use of a renewable energy solution to provide heating and hot water to houses and businesses contributes to sustainability as it reduces demand for and consumption of energy while using a renewable form of fuel.

3.10 Energy Efficiency in Buildings

The design, construction and operation of new buildings, have a significant role to play in reducing energy demand and increasing energy efficiency into the future. Building Regulations Part L (2007-2011) prescribe that a reasonable proportion of the energy consumption to meet the energy performance of a dwelling is provided by renewable energy sources. The Council promotes energy efficient design and recommends consideration of energy design at the earliest stage in the design processes through careful site selection, and the design of new buildings with regard to orientation so as to maximise solar gain. Careful consideration should also be given to the adaptability of buildings over time to enable the building stock to be retrofitted to meet higher efficiency standards in the future. Multi-storey and terraced buildings in close proximity require less energy and make renewables-based systems of energy distribution such as district heating, more feasible.

3.11 Flood Risk Management

It is expected that climate change will impact on flood risk in Offaly into the future from an increase in the number of heavy rainfall days per year leading to an increase in both fluvial (river) and pluvial (surface water) flooding.

In order to minimise the impact of an increased future flood risk, there are various steps that Offaly County Council can take such as flood protection works, stormwater attenuation and more significantly, avoidance of development in floodplains except in very limited circumstances.

A major function of floodplains and wetlands subject to flooding is to hold excess water until it can be released slowly back into the river system or seep into the ground as a storm surge subsides. Floodplains or wetlands subject to flooding should, therefore, be recognised and preserved to the maximum extent possible, in both urban and rural areas as green infrastructure which provides a natural defence against flood risk.



Figure 3.4 Flooding in Banagher

3.11.1 CFRAM Programme

The Office of Public Works (OPW) is the lead organisation for flood risk management in Ireland. The OPW undertook the national Catchment Flood Risk Assessment and Management (CFRAM) programme which delivers on core components of the National Flood Policy (2004) and on the requirements of the EU Floods Directive [2007/60/EC], in co-operation with local authorities and other public bodies.

In 2011, the national Preliminary Flood Risk Assessment (PFRA) identified 300 communities at potentially significant flood risk referred to as the Areas for Further Assessment (AFAs), which were then the focus of the CFRAM Studies and the Flood Risk Management Plans (FRMPs). There are nine AFA areas in County Offaly at Birr, Clara, Daingean, Edenderry and Environs, Pollagh, Rahan, Shannon Harbour, Shannonbridge - Power Station and Tullamore. The OPW has published predictive fluvial flood maps prepared through the CFRAM programme for the AFAs, including Flood Zone maps.

There are 118 Flood Relief Schemes in the Flood Risk Management Plans (2018) to be implemented under the ten-year €1 billion investment programme including Flood Relief Schemes for Rahan and Birr.

3.11.2 The Planning System and Flood Risk Management, Guidelines for Planning Authorities

The Department of Environment, Heritage and Local Government (DEHLG) in conjunction with the OPW published guidelines for Planning Authorities in November 2009 entitled 'The Planning System and Flood Risk Management'. The guidelines introduce comprehensive mechanisms for the incorporation of flood risk identification, assessment and management into the planning process. Planning Authorities (both elected members and officials) must implement these guidelines in ensuring that, where relevant, flood risk is a key consideration in preparing development plans and in the assessment of planning applications. Planning Authorities are required under Section 28 of the Planning and Development Act 2000 (as amended) 'to have regard to' the guidelines in carrying out their planning function and be 'consistent with' specific planning policy requirements. The core objectives of the guidelines are to:

- Avoid inappropriate development in areas at risk of flooding;
- Avoid new developments increasing flood risk elsewhere, including that which may arise from surface water run-off;
- Ensure effective management of residual risks for development permitted in floodplains;
- Avoid unnecessary restriction of national, regional or local economic and social growth;
- Improve the understanding of flood risk among relevant stakeholders; and
- Ensure that the requirements of EU and national law in relation to the natural environment and nature conservation are complied with at all stages of flood risk management.

The guidelines contain information relevant to how the SFRA will be an informative policy framing document, the premise of which will be taken from the guidelines, transposed into the SFRA and enable it to act as a guidance document to inform decision making on land use zoning and general flood risk issues where required and relevant.

3.11.3 Strategic Flood Risk Assessment

In accordance with The Planning System and Flood Risk Management, Guidelines for Planning Authorities, a Strategic Flood Risk Assessment (SFRA) has been prepared to assess flood risk within the Plan area, and it forms part of this Plan as a separate document.

A number of approaches to managing flood risk in the county have been employed in helping to make the Plan and are recommended particularly for dealing with planning applications. These include:

1. Areas at risk of flooding have been identified and there is a greater understanding of why flooding occurs in the general area.
2. A precautionary approach has largely been employed to landuse zoning to avoid directing development towards areas at risk of flooding.

3. Areas at risk of flooding as identified which are being put forward for landuse zoning have been subject to assessment through the justification test.
4. Where particular areas identified as being liable to flood were examined as being strategically important for the consolidated and coherent growth of the county's settlements and zoned accordingly, a site-specific flood risk assessment will be required to accompany development proposals for these areas and mitigation measures for site and building works will be required to be integrated.
5. Policies and objectives have been devised in the SFRA for incorporation into this plan.

3.11.4 Green Infrastructure and Sustainable Urban Drainage Systems

Adequate stormwater drainage and retention facilities are necessary to accommodate increased surface water run-off from existing and future developments. The use of Sustainable Drainage Systems and green infrastructure in developments are addressed in more detail in specific development management standards in Chapter 13 of this Plan. Sustainable urban drainage is addressed further in Chapter 11 Water Services and Environment and green infrastructure is addressed further in Chapter 4 Biodiversity and Landscape.

3.12 Data Centres

It is Government Policy as set out in the National Planning Framework and the Government Statement on The Role of Data Centres in Ireland to promote Ireland as a sustainable international destination for Information Communications Technology (ICT) infrastructure such as Data Centres. To date, some of the world's best known companies including Microsoft, Google, IBM and Amazon AWS have chosen Ireland as the location for their European data centre footprint and up to now this growth has largely been concentrated in and around Dublin city. Committed expansions and expected growth in the ICT sector in Dublin has created significant demand for more data centres which in turn has increased the demand for renewable energy to facilitate this growth. Increasingly, counties in the midlands and west are seen as attractive locations for data centres with cheap and extensive land, secure energy suppliers and plenty of cooling wind. Offaly County Council acknowledges that data centres contribute to job creation during construction, maintenance and from associated areas such as research and development, data analytics, customer service, technical support, marketing and sales. Data centres generally need to be located in areas where there exists a significant and sustainable electricity supply, high powered fibre optic cables, good accessibility, large land banks that are easily developable with future expansion possibilities and which offers good security. In addition, the Council is mindful that Data Centres should avoid sensitive landscapes and environments as outlined in Chapter 4 Biodiversity and Landscape.

3.13 Decarbonisation Actions and Projects

Table 3.1 below lists all actions and specific projects that that can be undertaken in County Offaly in the lifetime of this County Development Plan to help achieve a low carbon, climate resilient and environmentally sustainable economy.

Table 3.1 Decarbonisation Actions and Projects

- Compact Growth of settlements, reduce sprawl, higher densities, reuse buildings
- Sustainable Mobility; greenways, pedestrian routes, cycleways, permeability, connectivity to facilities and amenities and public transport provision
- Integrated transportation and landuse planning
- Cessation of peat fired electricity generation
- Electric vehicle recharging infrastructure and electrification of council fleet
- Green Infrastructure, for example, green walls, green roofs, parks, waterways, wetlands, greenways, peatways, woodlands
- Promote sustainable urban drainage systems (SuDs), for example, permeable surfaces to decrease run-off rates
- Afforestation where environmentally appropriate; contributes to renewable fuels and acts as a carbon sink, and can enhance interception and infiltration of precipitation with river basin catchments
- Remote working and co-working hubs
- Improve job: resident workers' ratio in settlements
- Green technologies and green jobs
- Create or enhance delivery of carbon sinks, for example, wetlands, bogs, forestry, permanent grassland
- Renewable and low carbon energy, for example, wind, solar, bioenergy, district heating
- Promote the repair and reuse of existing buildings including underutilised upper floors in urban areas
- Reduce vacancy and dereliction in towns and villages
- Reduce the need to travel
- Provide mixed use developments and support the close location of jobs / shops / services to minimise the need for the most common travel patterns.
- Support good ventilation
- Circular bio-economy
- Rhode Green Energy Park
- Support the restoration of peat bogs when turf cutting has ceased

- Strengthen public transport linkages and encourage their use
- Move towards self-sustaining rather than commuter driven activity
- Energy efficient building design
- Social enterprises
- Abatement of Greenhouse gas emissions in the agricultural sector
- Support car free developments in suitable locations
- Green procurement
- Sustainable food production
- Flood risk management, avoid development on flood plains and only facilitate the appropriate management and sustainable use of flood risk areas, and support the enhancement of flood resilience of buildings
- Implementation of Offaly Climate Change Adaptation Strategy
- Climate proof major projects
- Promote links between developments and renewable energy resources, for instance by sourcing energy on-site renewably or from low carbon fuel sources
- Support grey-water recycling schemes
- Support efforts to maximise water conservation
- Plant drought-resistant plants / trees in public amenity areas to provide shade

3.14 Climate Action and Energy Policies

Electricity Transmission and Distribution

CAEP-01 It is Council policy to support the development, reinforcement, renewal and expansion of the electricity transmission and distribution grid, including the development of new lines, pylons and substations as required to provide for the future physical and economic development of Offaly.

CAEP-02 It is Council policy to require that, in all new developments, local services such as electricity shall be undergrounded, multiple services are accommodated in shared strips underground and that access covers are shared, whenever possible.

Energy Storage

CAEP-03 It is Council policy to promote the use of efficient energy storage systems and infrastructure that supports energy efficiency and reusable energy system optimization, in accordance with proper planning and sustainable development.

Climate Change Adaptation and Mitigation

CAEP-04 It is Council policy to support and facilitate European and national objectives for climate adaptation and mitigation as detailed in the following documents, taking into account other provisions of the Plan (including those relating to land use planning, energy, sustainable mobility, flood risk management and drainage);

- Climate Action Plan (2019 and any subsequent versions);
- National Mitigation Plan (2017 and any subsequent versions);
- National Climate Change Adaptation Framework (2018 and any subsequent versions);
- Any Regional Decarbonisation Plan prepared on foot of commitments included in the emerging Regional Spatial and Economic Strategy for the Eastern and Midland Region;
- Relevant provisions of any Sectoral Adaptation Plans prepared to comply with the requirements of the Climate Action and Low Carbon Development Act 2015, including those seeking to contribute towards the National Transition Objective, to pursue, and achieve, the transition to a low carbon, climate resilient and environmentally sustainable economy by the end of the year 2050; and
- Offaly Climate Change Adaptation Strategy.

CAEP-05 It is Council policy to support the implementation and provision of the decarbonisation projects listed in Table 3.1 of the County Development Plan.

CAEP-06 It is Council policy to raise general awareness of issues associated with climate action and climate change mitigation and adaptation.

CAEP-07 It is Council policy to support local, regional, national and international initiatives for climate adaptation and mitigation and to limit emissions of greenhouse gases through energy efficiency and

the development of renewable energy sources which make use of all natural resources, including publicly owned lands, in an environmentally acceptable manner-

CAEP-08 It is Council policy to support the transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050, by way of reducing greenhouse gases, increasing renewable energy, and improving energy efficiency.

CAEP-09 It is Council policy to support the National Dialogue on Climate Action in an effort to increase awareness of climate change, behavioural change and adaptation actions and in doing so provide an ongoing platform for planning climate resilience with a focus on personal responsibility at all levels.

CAEP-10 It is Council policy to support the creation of a Sustainable Development Trust, through Green Offaly, a Public Participation Network Initiative, which facilitates, creates and assists in the delivery of Green Projects and Programmes by working in partnership with all sectors of the local community.

CAEP-11 It is Council policy to cooperate with the Climate Action Regional Office (CARO) in respect of adaptation and mitigation of greenhouse gas emissions, and future climate change adaptation strategies.

CAEP-12 It is Council policy to support the enhancement of carbon sinks such as peatlands, forestry, and permanent grasslands, with consideration of afforestation on cut away peatlands.

Peatlands

CAEP-13 It is Council policy to support the preparation of a comprehensive after use framework plan for the industrial peatlands and associated workshops, office buildings and industrial sites in the midlands and adjacent parts of the north west and southern regions, which meets the environmental, economic and social needs of communities in these areas, and also demonstrating leadership in climate change mitigation and land stewardship. The Council recognises that the industrial peatlands in the midlands are a significant resource will transition to after uses ranging from amenity, tourism, biodiversity services, 'wild areas', flood management, climate mitigation, energy development, industry, education, conservation and many more.

CAEP-14 It is Council policy to investigate the potential for a Green Energy Hub on peatlands in the county and facilitate it if possible.

CAEP-15 It is Council policy to investigate the feasibility of an energy park with educational and amenity facilities relating to any future development of renewable energy projects of significant scale that comes forward over the lifetime of this Plan. Any development of renewable energy on cutaway bog will be required to provide increased opportunities for amenity access and educational facilities.

CAEP-16 It is Council policy that planning applications for development on or immediately adjacent to peatlands shall be accompanied by assessments considering the following issues where relevant; peatland stability, hydrology, and/ or carbon emissions balance.

CAEP-17 It is Council policy to support the implementation of any relevant recommendations contained in the National Peatlands Strategy 2015 and any subsequent revisions.

Compact Growth, Sustainable Mobility and Integrated Transport and Landuse Planning

CAEP-18 It is Council policy to proactively encourage decarbonisation of local journeys by focusing on compact growth and reduced sprawl by targeting infill and brownfield lands in the existing built-up footprint of settlements.

CAEP-19 It is Council policy to improve walking and cycling connectivity within settlements and in particular with schools, town centres and employment areas, and to work with the National Trails Office, Coillte, the Department of Planning, Housing and Local Government, the Department of Transport, Tourism and Sport, and other relevant stakeholders, to improve on the existing level of infrastructure and facilities for walking and cycling in this regard.

Reasonable Alternatives and Existing Infrastructural Assets

CAEP-20 It is Council policy to require that environmental assessments should address reasonable alternatives for the location of new energy developments, and where existing infrastructural assets such as sub-stations, power lines and roads already exist within the proposed development areas, then such assets should be considered for sustainable use by the proposed development where the assets have capacity to absorb the new development.

Renewable Energy

CAEP-21 It is Council policy to actively promote and support the 'Just Transition' and the EU Programme for Coal Regions in Transition, in particular to support communities which have been dependent on the peat industry for decades.

CAEP-22 It is Council policy to encourage and facilitate the production of energy from renewable sources, such as from bioenergy, waste material, solar, hydro, geothermal and wind energy, subject to proper planning and environmental considerations.

CAEP-23 It is Council policy to encourage developers of proposed large scale renewable energy projects to carry out community consultation in accordance with best practice and to commence the consultation at the commencement of project planning.

CAEP-24 It is Council policy to ensure that whenever possible, community benefits are derived from all renewable energy development in the county such as near-neighbour benefit funds and general community benefit funds, which may take the form of contributions in kind to local projects, assets and facilities such as public amenities on the renewable energy site, measures to promote energy efficiency or a local energy discount scheme.

CAEP-25 It is Council policy to co-operate if required with the Eastern and Midland Regional Assembly in identifying Strategic Energy Zones as areas suitable for larger energy generating projects, community and micro energy production, whilst ensuring environmental constraints and a regional landscape strategy are considered.

Circular Economy

CAEP-26 It is Council policy to support the circular economy and within that the bio-economy including in particular through greater efficiency in land management, greater use of renewable resources and

by reducing the rate of land use change from urban sprawl and new development, resulting in optimal socioeconomic and environmental impacts such as resource efficiency and reduction of greenhouse gas emissions.

Geothermal

CAEP-27 It is Council policy to facilitate large and smaller scale geothermal energy generating developments both standalone and in conjunction with other renewable energy projects, subject to the proper planning and sustainable development of the area and consideration of environmental and ecological sensitivities.

CAEP-28 It is Council policy to promote the use of geothermal heat pumps for space heating and cooling as well as water heating in domestic, commercial and recreational buildings subject to the protection of water quality and any other relevant considerations.

Hydro Energy

CAEP-29 It is Council policy to facilitate the development of new river based hydroelectricity plans subject to due consideration of the free passage of fish, any protected structures, maintenance of biodiversity corridors, protected species and any designated nature conservation area such as Special Areas of Conservation, Special Protection Areas and National Heritage Areas etc.

CAEP-30 It is Council policy to ensure that any proposed projects do not conflict with the requirements of the Water Framework Directive.

Solar Energy

CAEP-31 It is Council policy to promote the development of solar energy infrastructure for on-site energy use, including solar PV, solar thermal and seasonal storage technologies subject to environmental safeguards and the protection of natural or built heritage features, biodiversity views and prospects.

CAEP-32 It is Council policy to ensure that the assessment of solar farm proposals will have regard to:

- site selection, by focusing in the first instance on developing solar farms on previously developed and non-agricultural land, provided that it is not of high environmental value.
- where a proposal involves greenfield land, whether (i) the proposed use of any agricultural land has been shown to be necessary and poorer quality land has been used in preference to higher quality land; and (ii) the proposal allows for continued agricultural use where applicable and/or encourages biodiversity improvements around arrays. Decommissioning and site rehabilitation plans will be required providing for the land to be restored to its previous use.

Biomass

CAEP-33 It is Council policy to facilitate and support the development of projects that convert biomass to gas or electricity subject to national and regional policy, normal siting, design, environmental and planning considerations.

Wind Energy

CAEP-34 It is Council policy to recognise the importance of wind energy as a renewable energy source which can play a vital role in achieving national targets in relation to reductions in fossil fuel dependency and therefore greenhouse gas emissions.

CAEP-35 It is Council policy that in assessing planning applications for wind farms, the Council shall:

- (a) have regard to the Department of the Environment, Heritage and Local Government's Guidelines for Planning Authorities on Wind Energy Development (or any update of this document) including applying appropriate setback distances as identified in the Guidelines;
- (b) have regard to 'Areas Open for Consideration for Wind Energy Developments' in the Wind Energy Strategy Designations Map from the County Wind Energy Strategy;
- (c) require a 2 km separation distance from turbines to town and village settlement boundaries in the county;
- (d) have regard to Development Management Standard 109 on wind farms contained in Chapter 13 of this Plan; and
- (e) have regard to existing and future international, European, national and regional policy, directives and legislation.

CAEP-36 It is Council policy to consider the repowering of existing windfarm development on a case by case basis where the proposal does not result in a net increase in the number of turbines and it is demonstrated that there is no adverse impact on the receiving environment, landscape, designated sites or residences in the area.

CAEP-37 It is Council policy to consider on-site wind energy development by auto producers/micro producers where energy generated is primarily required to meet the needs of the development; community, agricultural or small enterprise.

Data Centres

CAEP-38 It is Council policy to consider applications for proposed data centres in County Offaly in line with the following criteria;

- Accessibility/ease of connection to power;
- Availability of renewable energy to power proposed data centre;
- Availability of high powered fibre optic infrastructure;
- Transport/road accessibility;
- Compatibility of surrounding land uses/zoning;
- Avoidance of designated sites; and
- Availability of significant landbanks, minimum of circa 50 acres in size.

CAEP-39 It is Council policy that any application for a data centre shall take account of the cumulative impact of the proposed connections of the data centre with electricity transmission, renewable energy and broadband infrastructure in the area.

Energy Efficiency in Buildings

CAEP-40 It is Council policy to encourage development proposals that are low carbon, well adapted to the impacts of climate change and which include energy saving measures and which maximise energy efficiency through siting, layout and design.

CAEP-41 It is Council policy to support and encourage pilot schemes which promote innovative ways to incorporate energy efficiency.

CAEP-42 It is Council policy to consider the adaptability of buildings over time and seek to improve the efficiency of existing building stock, promote energy efficiency and high levels of energy conservation and the use of renewable energy sources in the design and development of all new buildings in the county.

CAEP-43 It is Council policy to support and promote structural materials in the construction industry that have low to zero embodied energy and carbon dioxide emissions.

CAEP-44 It is Council policy to support and facilitate the development of an Energy Efficient Building Centre of Excellence in East Offaly.

Micro Renewable Energy

CAEP-45 It is Council policy to facilitate micro-renewable energy installations and auto-generator installations where it is demonstrated to the satisfaction of the Council that they will not result in a significant adverse impact on residential, visual or environmental amenity.

Low Carbon District Heating

CAEP-46 It is Council policy to support Ireland's renewable energy commitments outlined in national policy by promoting the use of district heating systems in new residential and commercial developments where such development does not have a negative impact on the surrounding environment, landscape, biodiversity or local amenities.

CAEP-47 It is Council policy to consider using heat mapping to support developments which deliver energy efficiency and the recovery of energy that would otherwise be wasted.

Electric Vehicles, Fuel Cell Vehicles and Autonomous Vehicles

CAEP-48 It is Council policy to support the growth of Electric Vehicles, E-Bikes, Fuel Cell Vehicles and Autonomous Vehicles with support facilities, through a roll-out of additional electric charging points and refuelling infrastructure in collaboration with relevant agencies and in accordance with the siting criteria set out in the National Policy Framework Alternative Fuels Infrastructure for Transport in Ireland 2017-2030.

Flood Risk Management

CAEP-49 It is Council policy to support, in co-operation with the OPW, the implementation of the EU Flood Risk Directive, the Flood Risk Regulations (S.I. No. 122 of 2010) and the 'The Planning System and Flood Risk Management Guidelines for Planning Authorities (2009) and Department Circular PL2/2014 or any updated / superseding version.

CAEP-50 It is Council policy to protect Flood Zone A and Flood Zone B from inappropriate development and direct developments/land uses into the appropriate Flood Zone in accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 (or any superseding document) and the guidance contained in Development Management Standard DMS-106. Where a development/land use is proposed that is inappropriate within the Flood Zone, then the development proposal will need to be accompanied by a Development Management Justification Test and site-specific Flood Risk Assessment in accordance with the criteria set out under with The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 and Circular PL2/2014 (as updated/superseded). In Flood Zone C, (See DMS-106 where the probability of flooding is low (less than 0.1%, Flood Zone C), the developer should satisfy themselves that the probability of flooding is appropriate to the development being proposed.

CAEP-51 It is Council policy to require a Site-specific Flood Risk Assessment (FRA) for all planning applications in areas at risk of flooding (fluvial, pluvial or groundwater), even for developments deemed appropriate in principle to the particular Flood Zone. The detail of these site-specific FRAs will depend on the level of risk and scale of development. A detailed site-specific FRA should quantify the risks, the effects of selected mitigation and the management of any residual risks. The assessments shall consider and provide information on the implications of climate change with regard to flood risk in relevant locations. The 2009 OPW Draft Guidance on Assessment of Potential Future Scenarios for Flood Risk Management (or any superseding document) and available information from the CFRAM Studies shall be consulted with to this effect.

CAEP-52 It is Council policy to ensure that applications to existing developments in flood vulnerable zones provide details of structural and non-structural risk management measures to include, but not be limited to specifications of the following - floor levels, internal layout, flood resilient construction, flood resistant construction, emergency response planning, access and egress during flood events.

CAEP-53 It is Council policy to work with other bodies and organisations, as appropriate, to help protect critical infrastructure, including water and wastewater, within the county, from risk of flooding. Any potential future variations to the Plan shall consider, as appropriate any new and/or emerging data, including, when available, any relevant information contained in the CFRAMS Flood Risk Management Plans and as recommended in the SFRA for the Plan.

CAEP-54 It is Council policy to have regard to the findings and recommendations of the current Strategic Flood Risk Assessment prepared as part of the County Development Plan.

CAEP-55 It is Council policy to consult with the Office of Public Works (OPW) in relation to proposed developments in the vicinity of drainage channels and rivers for which the OPW are responsible, and the Council will retain a strip of 10 metres on either side of such channel where required, to facilitate access thereto.

CAEP-56 It is Council policy to consult, where necessary, with Inland Fisheries Ireland, the National Parks and Wildlife Service and other relevant agencies in the construction of flood alleviation measures in Offaly.

CAEP-57 It is Council policy to work with the OPW and other relevant Departments and agencies to implement the recommendations of the CFRAM programme to ensure that flood risk management policies and infrastructure are progressively implemented, and to also work with catchment-based Flood Planning Groups, (including where catchments go beyond the Council's administrative boundary) in the development and implementation of catchment-based strategies for the management of flood risk – including those relating to storage and conveyance.

CAEP-58 It is Council policy that where resources are available and subject to compliance with the Habitats and Birds Directives, the Council will contribute towards the improvement and / or restoration of the natural flood risk management functions of flood plains.

CAEP-59 It is Council policy to take account of and incorporate into local planning policy and decision making, including possible future variations to this plan, the recommendations of the Flood Risk Management Plans (FRMPs), including planned investment measures for managing and reducing flood risk.

Green Infrastructure and Afforestation

CAEP-60 It is Council policy to maintain existing green infrastructure and encourage and facilitate, in consultation with relevant stakeholders, the development of green infrastructure that recognises the synergies that can be achieved with regard to the following:

- Provision of open space amenities;
- Sustainable management of water;
- Protection and management of biodiversity;
- Protection of cultural heritage; and
- Protection of protected landscape sensitivities.

CAEP-61 It is Council policy to promote forestry development of appropriate scale and character whilst ensuring that the development does not have a negative visual impact on the countryside or cause pollution or degradation to wildlife habitats, natural waters or European designated sites.

CAEP-62 It is Council policy to support the fulfilment of the vision of carbon neutrality in the agriculture, forest and land use sector through better sustainable agricultural, land management and resource efficiency.

Green Infrastructure and Sustainable Urban Drainage Systems

CAEP-63 It is Council policy to minimise and limit the extent of hard surfacing and paving and require the use of sustainable urban drainage systems (SuDs) where appropriate, for new developments or for extensions to existing developments, in order to reduce the potential impact of existing and predicted flooding risks.

CAEP-64 It is Council policy to discourage the use of hard non-porous surfacing and pavements within the boundaries of rural housing sites that are within 100 metres of watercourses of a significant conveyance capacity or adjacent to Flood Zone A or B areas.

CAEP-65 It is Council policy to encourage the use of Green Roofs and Green Walls particularly on apartment, industrial, commercial, leisure and educational buildings.

CAEP-66 It is Council policy to encourage and facilitate the maintenance of rivers and waterways by statutory authorities and the cleaning of drains in urban areas where appropriate subject to the requirements of OPW Best Practice Guidelines.

3.15 Climate Action and Energy Objectives

Climate Change Adaptation and Mitigation

CAEO-01 It is an objective of the Council to implement the current Climate Change Adaptation Strategy for County Offaly.

Renewable Energy

CAEO-02 It is an objective of the Council to achieve a reasonable balance between responding to government policy on renewable energy and in enabling the wind energy resources of the county to be harnessed in an environmentally sustainable manner.

Wind Energy

CAEO-03 It is an objective of the Council to implement the Council's Wind Energy Strategy as follows:

1. In 'Areas Deemed Open for Consideration for Wind Energy Development' as identified in Map No. 10 'Wind Energy Strategy Designations', the development of windfarms and smaller wind energy projects will be considered;
2. In all other areas, wind energy developments shall not normally be permitted – except as provided for under relevant exemption provisions in the Planning and Development Regulations 2001 (as amended); and
3. Applications for re-powering (by replacing existing wind turbines) and extension of existing and permitted wind farms will be assessed on a case by case basis and will be subject to criteria listed in Development Management Standard 109 contained in Chapter 13 of Volume 1 of this County Development Plan and the Section 28 Ministerial Wind Energy Development Guidelines.

Peatlands

CAEO-04 It is an objective of the Council to source E.U. and national funding to support projects which assist the transition of the industrial peatlands to sustainable after uses.

Low Carbon District Heating

CAEO-05 It is an objective of the Council to carry out a feasibility assessment for district heating in County Offaly and identify local waste heat sources or renewable energy sources.

Gas

CAEO-06 It is an objective of the Council to support the further extension of the gas grid into County Offaly to serve existing and envisaged future residential, commercial and industrial development.

CAEO-07 It is an objective of the Council to support and facilitate the production of low carbon renewable biogases such as hydrogen and biomethane, produced largely from agricultural organic matter, that can be exported to the National Grid.

Flood Risk Management

CAEO-08 It is an objective of the Council to ensure that flood risk management is incorporated into the preparation of Local Area Plans in accordance with 'The Planning System and Flood Risk Management - Guidelines for Planning Authorities (2009).

CAEO-09 It is an objective of the Council to co-operate with the Office of Public Works (OPW) in the delivery of the Birr, Portarlinton and Rahan Flood Relief Schemes and other schemes that may be brought forward in the lifetime of this Plan.

Mobility Management and Travel Plans

CAEO-10 It is an objective of the Council to prepare Mobility Management and Travel Plans for Tullamore and Edenderry to bring about behaviour change and more sustainable transport use.