

## Ireland's Climate Strategy to 2020 and beyond

*A contribution to the Programme for Development of National Climate Policy and Legislation 2012*

### Executive Summary

Ireland's future development needs to follow a low carbon emission pathway consistent with the global emission reduction pathway and achievement of the 2 degrees Celsius climate protection limit. Ireland is currently well positioned to advance this as part of a positive and long-term response to climate change. This would deliver significant co-benefits for broader societal goals on energy, health, quality of life, and Ireland's global position.

Ireland's greenhouse gas emissions profile is unique, within the EU, in the dominance of the agriculture sector. Emissions from the transport sector are also significant. Emission reductions in both of these sectors will need to be achieved in the context of rising emissions from agriculture as the sector expands under Food Harvest 2020 and from transport when, as is likely, the economy recovers and demand for transport increases. Efficiencies, management systems and behavioural change can provide some mitigation options. Opportunities also exist in the residential, institutional and commercial heating sectors. These can all be win-wins. However, investment is required if Ireland is to shift to a low carbon economy. Investment in domestic action in the short term will have long-term gains for Ireland as opposed to widespread use of flexibilities to achieve compliance.

Sectoral mitigation goals need to be established to ensure that sectors mainstream climate actions into strategic development plans and goals. Sectors, institutions and governance bodies also need to plan for adaptation to climate change impacts, including improving resilience of existing infrastructure and systems and making sure that future investments take account of anticipated changes in Ireland's climate.

Ireland is well positioned to advance climate solutions as part of its economic development. Research, innovation and behavioural change are key elements of the response to climate change. However, appropriate management structures, incentives and goals are required to propel research and action. Policy needs to embrace the complexity of what drives action and behavioural change.

An overall framework for climate action is required. This could include a broad climate goal which transcends sectoral divisions and embodies global issues where Ireland has strengths and interests. Such a framework should embrace the long term mitigation challenge and could follow the positive examples of Norway and Sweden on setting carbon neutrality targets. It needs to embrace the challenge of adapting to future climate conditions and a review and assessment process is also necessary.

In conclusion, Ireland has an opportunity to be a global leader in actions on climate change. This will add to Ireland's image as a progressive and sustainable society that is attractive for society, business and development. The key foci of climate change actions should be the achievement of a high quality sustainable life style, energy security and optimised resource use, addressing food production, energy and ecosystem services.

## 1. Introduction

This paper is a contribution to the current *Programme for Development of National Climate Policy and Legislation* as announced by Minister Hogan in January 2012. A key step in this programme is the independent analysis to be carried out by the Secretariat of the National Economic and Social Council (NESC), which will inform the policy development process. The EPA welcomes the analysis and will continue to support the Secretariat with any data and background information as required.

In the context of the on-going work of NESC, the EPA has set out below what it believes are the key issues and possible responses to climate change for Ireland. The EPA's strategy document, *2020 Vision*<sup>1</sup>, sets out six environmental goals to be achieved by 2020 including *Limiting and Adapting to Climate Change*. The EPA makes its contribution to the National Climate Policy Development Programme in this context and in the context of EPA's role in the regulation, reporting and research of climate change, which includes:

- The provision of annual reports of Ireland's greenhouse gas emissions by sector and removals by sinks;
- National projections of emissions based on national and European policies and measures;
- Implementation of the EU Emissions Trading Scheme and other market mechanisms;
- The co-ordination and development of climate change research;
- Being a strong advocate and agent for behavioural change and playing a coordinating role in delivering a sustainable society;
- Informing policymakers, stakeholders and the public on environmental issues and solutions, and promoting good environmental behaviour and standards;
- Provision of scientific and technical advice to the Department of Environment, Community and Local Government, other Government departments and State agencies;
- Active engagement across a range of EU and UN climate change fora.

### Context for actions on climate change

The scientific understanding of climate change, provided by the Intergovernmental Panel on Climate Change (IPCC) in its Assessment Reports, is well established. The EPA fully supports the EU position, now endorsed at UN level, that actions to mitigate climate change should be consistent with the goal of limiting global temperature rise to within 2°C of pre-industrial temperatures. In doing so, the EPA recognises the considerable challenge that such a goal provides to all of us in terms of both the urgency and extent of the required actions. In particular, the EPA notes that the IPCC's Fourth Assessment Report (AR4) indicates that a 2°C pathway requires that greenhouse gas emissions from developed countries be reduced by 25-40% relative to 1990 emissions by 2020 and that these emissions be cut by 80-95% by 2050.

As a developed country and an EU Member State, Ireland therefore needs to develop a low carbon emission pathway that is in line with these findings. This should take account of Ireland's specific circumstances, within the EU and globally, enable the development of a low-carbon economy and a more sustainable standard of living for the people of Ireland. In this context, the EPA considers that the current phase of development of national policy is uniquely positioned to provide a platform for development of a positive and long-term response to climate change.

## 2. The National Context

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<sup>1</sup> See *2020 Vision - Protecting and Improving Ireland's Environment*  
<http://www.epa.ie/downloads/pubs/other/corporate/name,14621,en.html>

Ireland's greenhouse gas emissions profile has evolved in the period since 1990 but key features such as the dominant levels of emissions from the agriculture sector have remained relatively constant. There has been a significant increase in emissions from the transport sector, but these have declined in recent years due, primarily, to the recession and the impact of policies and measures. Emissions from the cement industry have similarly declined in recent years as the economy has contracted. Emissions from waste, although a relatively small share of Ireland's total national emissions, have also declined due to improved landfill management and methane utilisation. The greenhouse gas emission inventories reported to the UN and EU on an annual basis provide the basis for target setting and assessment of compliance. The relatively high contribution from the agriculture sector provides a unique challenge for Ireland within the EU but not at a global level where a number of developed countries and many developing countries have an even higher proportion of emissions from this sector.

The EPA's latest greenhouse gas emission projections<sup>2</sup> show two outlooks for greenhouse gas emissions in Ireland up to 2020 depending on policy implementation and development. The projections show that under the *With Measures* scenario Ireland will exceed its annual binding limit for non-ETS sector emissions in 2015. Under this scenario Ireland could potentially be a total of 20 Mtonnes of CO<sub>2</sub>eq in excess of the EU 2020 targets and the annual binding limits over the period 2013-2020. For the *With Additional Measures* scenario – the best case scenario – Ireland is projected to exceed its annual binding limit in 2017, with an exceedance of 2.0 Mtonnes of CO<sub>2</sub>eq over the 2013-2020 period.

The EPA's emission projections indicate the range of potential greenhouse gas emissions in Ireland based on a set of assumptions, rather than providing absolute forecasts. The *With Additional Measures* scenario is at the more optimistic end of the range of emissions and is predicated on a number of assumptions related to policy development and implementation. This scenario assumes that Government targets such as, for example, the renewable heat target (RES-H)<sup>3</sup> and the renewable transport target (RES-T)<sup>4</sup> are implemented and delivered in full.

The EPA emphasises that the *With Additional Measures* scenario is far from 'a given' and considerable focus and attention needs to be brought to bear on developing supporting measures to deliver on these ambitious targets. Furthermore, even assuming that all of the policies and measures incorporated in the *With Additional Measures* scenario are delivered, it is clear that Ireland will exceed its 2020 target and its annual binding limits in 2017, 2018 and 2019.

### **3. Choices and Pathways**

National climate change policy must focus on domestic action to meet our 2020 targets and set Ireland on the path to a low-carbon future. Such an approach will demonstrate Ireland's commitment to reducing greenhouse gas emissions and our commitment to playing our part in delivering global emission reductions. Domestic action is also essential to uphold and develop the image of Ireland as "green and clean" which is vital both for tourism and for the sustainable development of our agri-food sector. In addition, domestic mitigation will support the green economy, create new jobs, prevent lock-in of carbon intensive investment choices and allow Ireland to take a credible leadership role in international negotiations.

Currently, Ireland is faced with a number of choices that will determine how it will meet its 2020 targets and how the country will be positioned to achieve longer term emissions goals up to 2050. Full assessment of choices made today needs to take account of these key long-term milestones.

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<sup>2</sup> <http://www.epa.ie/whatwedo/climate/emissionsinventoriesandprojections/nationalemissionsprojections/>

<sup>3</sup> Renewable contribution to heat (Thermal requirement - heating and cooling) target is 12% by 2020.

<sup>4</sup> Renewables (biofuels and the renewable portion of electricity) contribution to transport energy target is 10% by 2020.

In order to keep climate change below 2°C, the European Council reconfirmed in February 2011 the EU objective of reducing greenhouse gas emissions by 80-95% by 2050 compared to 1990. The European Commission road map to 2050 provides an outline of how this might be achieved by the EU on a cross-sectoral basis. In this section we review the key challenges and choices for Ireland in achieving a cost-effective pathway to a low carbon economy.

#### 4. Mitigation

The EU Effort Sharing Decision (No 406/2009) states that all sectors of the economy should contribute to achieving emission reductions. The emission trading sector is already doing so. The other sectors of the economy such as heat from buildings, transport, agriculture and waste must also play their part. It is essential that these sectors, and key groups within these sectors, contribute to achieving the required reductions through a combination of:

- Sectoral accountability, responsibility and positive ownership of mitigation goals by the key sectors as part of their broader response to climate change and as part of their overall strategic development, i.e., within their mission and vision for development.
- Clear criteria for determination of sectoral contributions with a regular review process. These criteria should include economic development, wider societal goals e.g. employment, quality of life, capacity to contribute and an assessment of opportunities for green growth.
- Cost-effective measures which are available as shown by, for example, SEAI's Marginal Abatement Cost Curve (MACC) for Ireland<sup>5</sup> and the recently published Teagasc MACC curve<sup>6</sup>. Policy, institutional and behavioural barriers, that prevent the uptake of these measures, must be explored.

The following issues should be borne in mind in moving Ireland to a low carbon pathway:

- Framing policies and measures on climate change solely in the context of their marginal cost of abatement has the potential to be too narrow and simplistic and runs the risk that the analysis will miss the wider positive impacts on, for example, the environment and the economy. Marginal abatement cost is a key criterion against which to compare mitigation options. However, other criteria also need to be taken into account. For example, a positive impact on air quality, human health or energy security can justify prioritising a mitigation measure.
- Economic incentives can play a role in reducing emissions outside the EU ETS. It will be important to incentivise the private sector to innovate for the green economy and achieve mitigation. The carbon tax is a welcome measure and efforts should be taken to ensure its consistent application across all fuels in the future. A wider application will need to take into account those who are vulnerable to fuel poverty.
- A Domestic Offsetting (DO) scheme offers a potential market-based mechanism to stimulate reductions in the non-ETS sectors. A domestic off-set represents an emissions reduction that has taken place outside the boundaries of the entity that pays for the reduction. A DO scheme might be set up in order to provide finance for emissions reductions in a particular sector, or to allow for obligated parties to meet their targets through investing in sectors where emissions reductions may be cheaper to realise than on their own. An EPA commissioned

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<sup>5</sup> [http://www.seai.ie/Publications/Low\\_Carbon\\_Opportunity\\_Study/Irelands\\_Low-Carbon\\_Opportunity.pdf](http://www.seai.ie/Publications/Low_Carbon_Opportunity_Study/Irelands_Low-Carbon_Opportunity.pdf)

<sup>6</sup> [http://www.teagasc.ie/publications/2012/1186/1186\\_Marginal\\_Abatement\\_Cost\\_Curve\\_for\\_Irish\\_Agriculture.pdf](http://www.teagasc.ie/publications/2012/1186/1186_Marginal_Abatement_Cost_Curve_for_Irish_Agriculture.pdf)

study<sup>7</sup> found that domestic offsetting merits further consideration as a mitigation measure in Ireland. The project found that domestic offsetting or a project approach to mitigation could be useful in achieving embedded emission reductions and in supporting the transformation to a green economy. A project approach can also be useful to long term policy development as different mitigation technologies and techniques are effectively tested in the real economy.

- Sound analysis and research needs to underpin mitigation measures such that the comparative costs and benefits of measures are understood. Such analysis needs to form the basis for planning Government interventions to reduce emissions in each sector. Modelling of emissions scenarios is required to support decision-making.
- Government policy, supported by research, needs to do more to embrace the complexity of what drives individual action and inaction given the strong need for behavioural change in the two key sectors – transport and agriculture.
- The Agriculture, Forestry and Land Use sector has a key role to play in Ireland as both an emissions source and an important sink. However, a lack of focus on this sector has resulted in mixed analysis of potentials and issues which has emphasised forestry as opposed to other managed land use:
  - Ireland needs to urgently assess how the sink from all managed land systems can be maintained or enhanced. Where emissions sources from land exist these should be reduced or eliminated.
  - The wider potential and economic benefits of ecosystem services needs to be determined and included in analysis of mitigation costs and benefits.
  - A strategic approach to optimisation of national land use is required.

## **Sectoral Mitigation**

This section focuses on the transport and agriculture sectors which together are projected to account for 75% of non-ETS sector emissions in 2020. The EPA recognises that there are limited cost-effective greenhouse gas mitigation options in both of these sectors and, in addition, achieving reductions requires considerable behavioural change amongst both the public as users of the transport system and in farming practices in the agriculture sector. However, as stated in the EU Effort Sharing Decision No 406/2009, all sectors of the economy should contribute to achieving emission reductions, and the EPA believes that efficiencies and emission reductions can be unlocked in both sectors with the right mix of policies and measures.

### Mitigation of Emissions from Transport

Achieving emission reductions in the transport sector will involve a range of policies and measures to support technological solutions and behavioural change. Many of these fall outside the remit of the Department of Transport, Tourism and Sport and, therefore, it will be important to ensure that they are effectively co-ordinated.

There are ambitious assumptions built into the transport sector emissions projections that must be delivered to achieve the emissions projected under the *With Additional Measures* scenario. For example, it is assumed that the RES-T<sup>4</sup> target of 10% share of renewable energy in transport is achieved by 2020. This equates to a saving of 0.7 Mtonnes of CO<sub>2</sub>eq in 2020. In the energy forecasts, underpinning the projections, SEAI assume that the 10% target will be achieved through upward adjustment of the Biofuel Obligation Scheme<sup>8</sup>. It will be important to ensure that this upward

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<sup>7</sup> [http://www.epa.ie/downloads/pubs/research/climate/CCRP\\_6\\_web.pdf](http://www.epa.ie/downloads/pubs/research/climate/CCRP_6_web.pdf)

<sup>8</sup> The Biofuels Obligation Scheme came into effect on 1st July 2010. Under this legislation, fuel suppliers have to ensure that at least 4 litres in every 100 litres of road transport fuel is biofuel. This is called the 'biofuel

adjustment is signalled to the market as early as possible to provide clarity and certainty to the market players.

The transport sector will need to focus on the cleanest possible technologies, low-carbon fuels and the most efficient transport modes for both passenger and freight travel. The projections assume that savings will be delivered through the improved fuel economy of private cars. This is assumed to be driven by EU Regulation No 443/2009 which sets standards to frame the CO<sub>2</sub> emissions of new passenger cars. Whilst Ireland is a technology taker in relation to the emission standards of new cars, the fiscal regime, which was introduced in 2008 to differentiate VRT and motor tax according to CO<sub>2</sub> emissions, plays a significant role in influencing consumer purchasing behaviour and uptake of these more energy efficient vehicles. These fiscal incentives should be continued in order to send a clear price signal to consumers and encourage the purchase of more fuel efficient vehicles in the future. The achievement of a target of 200,000 electric vehicles by 2020 is also built into the EPA's projections. This is an ambitious target and requires both fiscal incentives and the provision of adequate infrastructure to overcome natural resistance to change.

Moving beyond the EPA's emission projections, SEAI's Marginal Abatement Cost Curve for 2030<sup>5</sup> shows significant low-cost and no-cost abatement potential at a price of \$120 a barrel of oil. National policy should focus on the market, policy and behavioural barriers for these technological solutions to facilitate their uptake in future years.

#### Mitigation of Emissions from Agriculture

The agriculture sector is projected to account for 48% of non-ETS sector emissions in 2020 which assumes that agriculture emissions will grow by 7% in 2020 on current levels. This increase in emissions is underpinned by expansion of the sector under the Food Harvest 2020 plan and removal of the milk quota in 2015.

According to a recent report by the Joint Research Centre of the EU Commission, Ireland's milk and beef production systems have a low carbon footprint compared to other Member States<sup>9</sup>. Sustainable intensification, while positive in terms of improving efficiencies per unit product, will, at best, result in a stabilisation of emissions under a scenario where production is forecast to increase dramatically such as under the Food Harvest 2020 plan.

Teagasc have recently developed a Marginal Abatement Cost Curve<sup>6</sup> for Irish agriculture which shows a range of cost-beneficial mitigation measures that have potential to deliver the 1.1 Mtonnes CO<sub>2</sub>eq of emission reductions. These include improvements in the Economic Breeding Index, extended grazing and nitrogen efficiency. According to the Teagasc publication these measures will require incentivisation in order to realise their environmental and economic potential, mainly through knowledge transfer facilitated by large-scale advisory programmes. Targeted measures to deliver on this significant potential within the agriculture sector should be developed and progressed.

The EPA recognises that the success of these measures depends largely on behavioural change, such as encouraging and influencing farmers and land managers to change farm management practices where a clear environmental and efficiency benefit is foreseen, and will continue to develop, in collaboration with other organisations, programmes which encourage the agricultural sector to reduce their carbon footprint.

#### Other sectors and policies

*Energy use - Housing, public and private infrastructure.*

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obligation' and equates to 4% of petroleum-based motor fuel placed on the market. The National Oil Reserves Agency (NORA) has been mandated to administer the scheme.

<sup>9</sup> [http://ec.europa.eu/dgs/jrc/index.cfm?id=1410&obj\\_id=13010&dt\\_code=NWS&lang=en](http://ec.europa.eu/dgs/jrc/index.cfm?id=1410&obj_id=13010&dt_code=NWS&lang=en)

Considerable progress has been made in improving energy efficiency in the residential sector. Analysis by SEAI shows that every €1 spent on Better Energy Homes delivers €5 in societal savings. However, there is still room for increased energy efficiency and greater penetration of renewable energy particularly in public sector buildings. The vision of warm homes, schools and public buildings with less energy usage sends a positive signal to the public. Targeting of schools and other public buildings provides opportunities to show the effectiveness of current technologies to reduce heat/energy loss. In this regard, the EPA is supportive of the Government's 2020 target for a 33% improvement in public sector energy efficiency. It will be important to ensure that policies and measures to support implementation of this target are delivered.

Energy use in homes, public buildings and business cannot be dealt with in isolation. Increasingly, there is a move towards a more comprehensive and holistic management of resources in housing, public and private infrastructure. The EPA's National Waste Prevention Programme provides a good model for addressing resource use efficiency in an integrated way through projects such as those focused at householders (Green Homes), SME's (Hospitality Programme, Green Business) and local authorities. A comprehensive National Resource Use Strategy, which incorporates energy use across all sectors, is required. This would be in line with the *Europe 2020 Strategy* and its flagship initiative on '*A Resource Efficient Europe*'. As part of this Strategy, incentives for business should be considered – these could include requirements to account for carbon emissions in annual reports and in customer information sheets. Sectors that are currently in public ownership could lead in this area. This type of reporting could be an extension of the existing *Carbon Disclosure Project*, which already in 2012 is requesting climate change information from Ireland's 40 largest companies (by market capitalization), together with the largest Irish participants in the EU Emissions trading scheme.

### **Use of flexibilities**

There are a range of flexibilities allowed under the EU Effort Sharing Decision to enable Member States to meet their targets cost effectively. These could potentially play a role in achieving compliance under the EU Effort Sharing Decision. However, the EPA considers that the primary focus of national climate change policy should be on domestic mitigation rather than the use of flexibilities. This is also the ethos of the EU Effort Sharing Decision.

Purchasing offset units from outside Ireland at lower marginal abatement cost compared with domestic emission reduction may have some short-term gains. However, purchasing for compliance to 2020 could cost up to half a billion euro, which will be money spent outside the country. A similar investment in the domestic economy could achieve significant long term mitigation as well as sending a clear and credible signal of Ireland's commitment to a low-carbon future. It is important to also note that every purchase to offset emissions in the current commitment period ensures that further efforts will be required in the next commitment period.

Early investment to embed emissions reductions will not just save purchasing costs in the current compliance period but will also reduce costs of compliance for subsequent periods. Thus, domestic action provides clear and demonstrable benefits in terms of Ireland playing its role to reduce greenhouse gas emissions and, in addition, provides positive ancillary benefits to the economy and the environment, such as improvements in air quality. Unless it is clear that international purchases impose less net-cost to the economy even with all criteria taken into account, domestic action should be given priority.

## **5. Research and Innovation**

Actions on climate change are uniquely driven by research as assessed by the IPCC and used under the UNFCCC to progress global policy responses. For Ireland there are three key dimensions to research and innovation. Firstly, Ireland requires a strong research base in various areas of climate change research to inform actions and support policy development in Ireland as well as underpinning

engagement with EU and UN bodies leading on development of actions on climate change. The EPA's Research Programme which includes a pillar on Climate Change, and involves the main Government Departments and bodies involved in climate change actions, largely acts to progress these areas of research.

The second area of development is in innovation and solutions. Ireland is recognised as a leader in various disciplines of research, including biotechnology, ICT and certain renewable energies. The success of the investment programme of Science Foundation Ireland (SFI) has made a significant contribution to this process. The 2011 Research Prioritisation exercise has further developed this investment. However it is considered that research activities outputs should also be coherently targeted at the key challenges that face Ireland, such as climate change, recognising that solutions for Ireland will have global markets. A more focused approach to utilising the considerable research capacity in Ireland is warranted. This could have clear goals for challenging sectors e.g. achievement of zero emission energy systems, net zero emission food production systems, or similar sustainable society goals.

The third area is the need for a strong focus for research on behavioural change. This area of research will need to move outside the traditional disciplines of scientific research and encompass, for example, social science and behavioural economics. The EPA has already funded some work in this area such as a study that considers the barriers to sustainable transport in Ireland<sup>10</sup>. Given the need for substantial behavioural change in both the transport and the agriculture sectors, sound evidence-based research is required to inform and develop the most effective mechanisms for stimulating, facilitating and supporting new and more sustainable ways of living and working. Research on areas such as the potential impact of Government leadership, understanding what drives change, Government engagement and communications and integration of policies will underpin effective actions to bring about behavioural change in Ireland.

## **6. Governance and a framework for development of climate actions**

A national framework is required to progress effective actions on climate change. Elements of this have been alluded to in previous sections such as the need for sectoral ownership of actions and targeting of innovative and research capacity. The framework should provide the basic management structure that enables these elements to be coordinated, advanced and assessed. Additional components encompass a high level climate goal for Ireland which would transcend the inter-sectoral mitigation target debate and encompass wider issues of national goals for societal development in the context of global actions on climate and wider resource challenges. A national framework should involve key global development issues, including areas where Ireland has strengths such as food security and issues of equity and climate justice.

Ireland has always contributed strongly to the international negotiations and this position could be enhanced through adoption of a broad-based climate goal. This would need to be coupled to effective actions at home to move to a low carbon economy. Committing to such a goal would enable credible participation and influence on the European and world stage. In terms of setting a long term mitigation goal, Ireland can also look at the example of countries like Norway and Sweden and aim to have a carbon neutral economy by a specific date, no later than 2050. This would serve to focus sectoral policies and in particular advance thinking on the potential and additional services that can be provided by managed land and ecosystems.

Following adoption of such a goal, a national strategy is required to determine how sectors should achieve such a mitigation goal and by which criteria success will be assessed. This strategy and goal should encompass:

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<sup>10</sup><http://www.epa.ie/downloads/pubs/research/climate/name,31505,en.html>

- Economic sectors, government bodies and institutions;
- Sustainable resource use; land, ocean and atmosphere;
- International partnerships in trade and sustainable development.

A robust management structure is required to ensure implementation of the strategy and delivery of its objectives. Existing structures which are involved in this area include:

- The Cabinet Committee on Climate Change and Green Business (assisted by a Senior Officials Group drawn from the key relevant Government Departments and State agencies)
- The Oireachtas Joint Committee on Environment, Transport, Culture and the Gaeltacht.

The structures/agencies used in other countries for overseeing the implementation of climate change policy, in particular in the UK, can provide examples. Independent reporting on progress would be an essential element of any such structure.

Such a national approach needs to be supported and complemented by a regional level strategy that is tailored to local contexts and groups. It will be important to ensure that governance structures deliver a comprehensive and joined up approach to climate change both nationally, regionally and locally. This approach would have the advantage of translating national targets and goals into a real requirement for regional and local level engagement and action. The Government's recent policy document *Our Sustainable Future, A Framework for Sustainable Development for Ireland*<sup>11</sup> calls for a particular emphasis "on strengthening vertical levels of governance in regard to sustainable development" which requires better co-ordination and engagement between relevant Government Departments and their agencies at regional and local level. Such a governance structure should also be considered for implementation of climate change mitigation and adaptation (see Section 7 below) in Ireland.

## **7. Adaptation and Integrated planning**

The EU's White Paper on Adaptation recognised that most individual adaptation measures need to happen at local or regional level and made the case for multilevel governance. An effective national approach to climate change adaptation must work on the premise that policy has to be framed nationally and cascade down and across to the local and sectoral levels for implementation to occur. This will require a high level of coordination to effectively link top-down and bottom-up activities. The most effective strategy for adaptation planning is to integrate climate change thinking on both adaptation and mitigation into policies, plans, programmes and projects at all levels of Government and across all sectors. Key entry points of policy integration need to be identified at all levels of governance. Policy instruments such as planning development and impact assessment (e.g. SEA, EIA, AA) offer good opportunities for the integration of climate change (mitigation and adaptation) into environmental decision making. They need to be supported by appropriate guidance, frameworks and criteria.

While there is a belief that climate change will be generally benign for Ireland, at least in the short term, this thinking may leave our economy and society exposed in the medium to longer term. However, there are a number of benefits to be derived from early action to prepare Ireland for the projected worst consequences of climate change. These include:

- Avoided costs to the economy and society, including planning decisions that take into account projected climate impacts (especially extreme events such as flooding), enhanced infrastructure design (e.g. for transport, energy, and communications), increased awareness and behavioural change;

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<sup>11</sup> <http://www.environ.ie/en/Publications/Environment/Miscellaneous/FileDownload,30452,en.pdf>

- The development of resilient services such as water, transport, energy, communications and ecosystems (vital to agriculture, forestry, horticulture and biodiversity);
- The potential for Ireland to become a provider of adaptation goods and services to the international markets.

A number of barriers exist to the implementation of climate change adaptation:

- The lack of national policy and legislation. Policy drivers are required to stimulate action in sectors and local government;
- A lack of awareness or understanding amongst decision makers and the general public on the need to act now;
- A lack of capacity at sectoral and local level. Decision makers will need assistance to build capacity on how to integrate climate change into their decision making process. They will also need reliable information. Experience from the EU is showing that support for capacity building is the key to successful adaptation implementation.

A “wait and see” approach is not viable, as uncertainty cannot be avoided or eliminated. Strategies that are robust to uncertainty such as ‘low regret’, ‘win-win’ and ‘soft option’ need to be considered in such circumstances.

It is anticipated that under the EU Adaptation Strategy (due in the first quarter of 2013) monitoring and reporting requirements for adaptation will be placed on Member States. In order to plan for this Ireland needs to rapidly progress to adaptation planning, develop adaptation indicators and assign reporting responsibilities. This should have the goals of reducing the climate change vulnerability of existing infrastructures and systems and in insuring that development and investment choices are informed by analysis of future climate conditions in Ireland and particularly likely changes in extremes.

As mitigation targets increase and the challenges of climate change impacts heighten, it will be important that climate issues are factored into planning processes through, for example:

- Protocols for consideration of greenhouse gas emissions and climate change impacts in SEAs and Impact Assessments. The role of development planning in progressing both mitigation and adaptation measures needs to be analysed.
- Clear direction to regulatory bodies of industry, such as the energy regulators and transport regulators. It is crucial that consideration of mitigation and adaptation are clearly factored into decision-making, such as infrastructural planning. In particular we need to highlight these considerations when standards and guidelines are open to review.

## **8. Key points and Conclusions**

- Long-term, low carbon and climate resilient development needs actions that have a long term perspective. Action today should aim to save future costs particularly where there are investment decisions to be made in the short term about infrastructure such as housing, transport, energy, water supply and investments in coast and flood defences.
- There is no room for complacency. The EPA emphasises that the *With Additional Measures* scenario is far from ‘a given’ and considerable focus and attention needs to be brought to bear on developing supporting measures to deliver on these ambitious targets.
- National climate change mitigation policy must focus on domestic action to meet our 2020 targets and set Ireland on the path to a low-carbon future. There are also a range of wider economic and environmental benefits to be derived from domestic action. Flexibilities have a role to play in meeting targets, however, the focus should be on domestic action.

- All sectors of the economy must contribute to emission reductions with a strong focus on those sectors – transport and agriculture – that dominate our emissions profile. Win-wins for energy saving in domestic and business areas such as heating must be realised.
- Marginal abatement cost analyses for Ireland show that there are cost-effective mitigation solutions available. Policy, institutional and behavioural barriers, that prevent the uptake of these measures, must be explored.
- Government policy, supported by research, needs to do more to embrace the complexity of what drives individual action and inaction given the strong need for behavioural change in the two key sectors – transport and agriculture.
- A national framework is vital to progress effective actions on both mitigation of, and adaptation to climate change supported by sectoral, national and where necessary regional and local strategies. A vision of ‘a low carbon, climate resilient thriving economy for Ireland’ which is part of a global effort to address the climate challenge is essential. Carrying this vision forward requires high level leadership and cross sectoral, cross-Government cooperation.

In conclusion, Ireland now has an opportunity to act on key climate change issues in a positive manner. In doing so it can aim to be a global leader in actions on climate change. This could include adoption of a broad climate goal which transcends sectoral divisions and embodies global issues where Ireland has strengths and interests. This will add to its image of being a progressive and sustainable high quality society that is attractive for business and living.