Main Issues Report 2013

Climate Change Position Paper

1. Introduction

1.1 It is now widely accepted that the predicted rate and scale of climate change and the underlying causes and associated impacts, present significant environmental, social and economic challenges. Aberdeenshire Council's 'The Bigger Issue' report (2007) on Climate Change states that "*climate change is an incontrovertible fact, with serious implications for Aberdeenshire, Aberdeenshire Council and the rest of the world. 'Business as usual' is not a rational option. Significant change is required to 'future proof' Aberdeenshire and this needs to happen quickly".*

1.2 In 2009, the Scottish Government adopted the Climate Change Act, which requires public bodies, including planning authorities, to take significant action on climate change. It is the purpose of this paper to provide the national and local context, justification and policy options for how the next Aberdeenshire Local Development Plan (LDP) could meet its statutory climate change duties. A detailed background on the likely causes and impacts of climate change, along with definitions of climate change mitigation and adaptation are provided in Appendix 1.

2. National Context

2.1 The UK Climate Projections 2009 (UKCP:09) show the changes that can be expected during the rest of this century under a low, medium and high CO_2 emissions scenario. Under all scenarios, it is likely that the annual mean temperature in the East of Scotland will increase by 2-3^{o}C by the end of the century, while rainfall will increase in winter and decrease in summer. Sea level around Scotland is also going to rise. Scotland will also experience more extreme weather events, with more extended hot and dry periods, with the wettest days of the year likely to be considerably wetter than at present.

2.2 The UK's 2012 Climate Change Risk Assessment (CCRA) has identified the main sectoral threats/risks that may result from Climate Change. While a summary of these impacts is provided in Appendix 1, the CCRA (2012) identified the following two issues as requiring early action:

- Reductions in river flows and water availability during the summer
- Increases in flooding, both on the coast and inland

2.3 The Climate Change (Scotland) Act 2009 is the centrepiece of the Scottish Government's climate change framework, requiring shared action on both climate change mitigation and adaptation. The Act set out headline targets for GHG emissions to be reduced by 42% by 2020 and 80% by 2050. Part 4 of the Act places duties on public bodies relating to climate change, with Section 44 requiring that a public body must, in exercising its functions, act:

- in the way best calculated to contribute to delivery of the Act's emissions reduction targets;
- in the way best calculated to deliver any statutory adaptation programme; and
- in a way that it considers most sustainable

2.4 The Planning Act (2006) places a duty on planning authorities to contribute to sustainable development. With climate change mitigation and adaptation being central to the delivery of sustainable development, the Planning Act supports the need for the LDP to take action on climate change.

2.5 The Scottish Government's 2011 Economic Strategy states that the transition to a low carbon economy constitutes Scotland's "*primary new economic opportunity*" and provides the means to achieve the statutory climate change targets. In light of this, it is identified as a '*strategic priority'*. The strategy includes the following targets relating to energy generation and consumption:

- equivalent of 100% of Scotland's electricity demand from renewable energy sources by 2020;
- reduce end-use energy consumption by 12% by 2020; and
- meet 11% of heat demand from renewable energy sources by 2020

2.6 Low Carbon Scotland: Meeting the Emissions Reductions Targets 2013-2027 The Second Report on Proposals and Policies (RPP2) details how Scotland can deliver its statutory annual targets for reductions in GHG emissions for the period 2013–2027. The role of the planning system is identified as being one of five cross-cutting themes, with the report stating that " *Scottish Planning Policy…strategic and local development plans all play* (an) *important role in supporting the transition to a low carbon future. Planning will support emissions reduction in sectors such as energy, transport, heat, and waste and is often a critical enabling measure*". Development plans are expected to include policies which will support the transformational change required to meet Scotland's climate change targets

2.7 The RPP2 identifies a number of transformational outcomes necessary to achieve the carbon reduction targets, including:

- A largely decarbonised electricity generation sector by 2030, using renewable sources
- A largely decarbonised heat sector by 2050 with significant progress by 2030 through a combination of reduced demand and energy efficiency, together with a massive increase in the use of renewable or low carbon heating
- Almost complete decarbonisation of road transport by 2050, including significant progress by 2030 through a shift towards public transport and active travel
- At least 70% of all waste recycled by 2025, and by 2050 enhanced natural carbon capture through our expanded woodlands and significantly more conservation of our peatland.

2.8 The Scottish Government's Climate Change Adaptation Framework (2009) aims to "*lead planned adaptation across all sectors to increase the resilience of Scotland's communities and the natural and economic systems on which they depend, to the impacts of climate change*". The Framework includes the 'Spatial Planning and the Land Use sector Action Plan', which identified the following actions:

- Integrate climate change adaptation into Development Plans
- Support the development of woodland expansion and green networks

2.9 The Scottish Government's Draft Climate Change Adaptation Programme 2013 (CCAP) addresses the impacts identified for Scotland in the UK Climate Change Risk Assessment (CCRA). It sets out Scottish Ministers objectives in relation to adaptation to climate change, their current and future policies for meeting these objectives and responsible authorities. The CCAP highlights the importance of several current planning policies in meeting their objectives:

Table 1: Scottish Ministers Objectives

Objective N2 – Support a healthy and diverse natural environment with the capacity to adapt. Policy Approach *Promote the role of green networks in helping Scotland to mitigate and adapt to climate change by strengthening habitat networks, reducing habitat fragmentation and providing opportunities for species to migrate*.
Objective B3 - Increase the resilience of buildings and infrastructure networks to sustain and enhance the benefits and services provided. Policy Approach Revised PANs are to be underpinned by the principles of sustainable flood risk management. For example**,** the consolidated PAN on flooding, water and drainage will highlight the role of climate change adaptation with regards to flood risk and the

water environment and promote the avoidance of development in medium to high flood risk areas. Policy Approach SPP identifies that short and long term impacts of climate change should be taken into account in all decisions throughout the planning system
Objective B1 - **Understand the effects of climate change and their impacts on buildings and infrastructure networks** Proposed Policy Approach To consider a long-term approach to the management of surface water to ensure that sewer systems are resilient to climate change.

2.10 Scottish Planning Policy 2010 (SPP) incorporates the requirements and targets of the Climate Change Act and the 2011 Economic Strategy. SPP (2010) clearly supports the need for the LDP to address climate change when it states that "*The need to help mitigate the causes of climate change and the need to adapt to its short and long term impacts should be taken into account in all decisions throughout the planning system*". With regard to climate change mitigation, SPP's (2010) broad requirements are for development plans to:

- promote a pattern of development which reduces the need to travel and encourages active travel and travel by public transport
- require the siting, design and layout of all new development to limit likely greenhouse gas emissions, by promoting energy efficiency and limiting resource use
- support all scales of development associated with the generation of energy and heat from renewable sources, ensuring that an area's renewable energy potential is realised and optimised in a way that takes account of relevant economic, social, environmental and transport issues and maximises benefits.
- ensure that all new buildings are designed to avoid a specified and rising proportion of the projected greenhouse gas emissions through the installation and operation of low and zero carbon generating technologies (LZCGT's).
- assess the likely CO_2 impacts associated with any development work on carbon soils

2.11 In relation to adaptation, SPP (2010) requires development plans to:

- normally avoid development in areas with increased vulnerability to the effects of climate change, particularly areas at significant risk from flooding
- normally not permit new land-based development in coastal areas where it will require significant new defences against coastal erosion or coastal flooding
- encourage connectivity between habitats, green networks, which can improve the viability of species and ecosystems

2.12 The Draft SPP (2013) builds on the approach of the existing SPP (2010) by providing the following specific examples of how development plans can promote mitigation and adaptation:

- promoting a mix of land uses within settlements that will help to facilitate active travel or travel by public transport
- encouraging reuse of existing building stock
- supporting the expansion of heat networks
- ensuring new development is adapted to withstand more extreme weather, including prolonged wet or dry periods;
- working with natural environmental processes, i.e. green infrastructure, to reduce flood risk

- Plans should identify woodlands of high nature conservation value and include policies for protecting them and enhancing their condition and resilience to climate change
- Developments should aim to minimise Co_2 emissions from carbon rich soils.

2.13 The National Planning Framework (NPF2) states that "*development plans should include policies designed to promote sustainable development and contribute to the mitigation of, and adaptation to, climate change*". NPF2 highlights the importance of the following issues:

- encouraging a shift to more active and sustainable modes of travel and transport.
- promoting compact settlements and mixed use developments
- reducing the amount of waste land filled
- greater energy efficiency of buildings
- maximising renewable energy potential
- encouraging power and heat generation from clean, low carbon sources
- the potential for developing heat networks as part of a more decentralised pattern of energy generation and supply, when preparing development plans

2.14 The 2013 Draft National Planning Framework 3 (NPF3) emphasises the importance of promoting the transition to a low carbon economy and states that planning "*should support, not act as a barrier to the behavioural change required to combat and adapt to climate change*" by enabling people to make sustainable choices, i.e. lower carbon transport choices. To this end the draft NPF3 builds on NPF2 and further supports climate change mitigation by:

- focusing on improving existing settlements and facilitating higher density development over the long term, which should provide opportunities to improve public transport provision
- promoting energy from waste
- supporting small-scale district heating schemes using energy from waste and other technologies
- promoting greater use of renewable sources of heat energy and recovery of 'waste' heat;
- supporting the further deployment of onshore wind farms
- highlighting the opportunities to use heat mapping to help identify the strategic opportunities for district heating and cooling; and
- highlighting the importance of locally sourced materials, wherever possible

3. What does Climate Change mean for Aberdeenshire?

3.1 Aberdeenshire Council's 2007 'The Bigger Issue' report on Climate Change states that "*climate change is real and already happening in Aberdeenshire. Since 1961, Aberdeenshire has experienced a rise in average summer and winter temperatures, fewer days with air frost and more autumn and winter days with heavy rain…(In) future Aberdeenshire is likely to have warmer and drier summers, warmer and wetter autumns and winters and more powerful storms, more often*".

3.2 With regard to the impacts of climate change, the 2007 report reflects the findings of the UK's 2012 Climate Change Risk Assessment (CCRA), which are summarised in Appendix 1. The report pointed out that while there are likely to be both negative and positive impacts from climate change in the short term, in the medium and longer term there are likely to only be negative impacts. For example, in the short term, areas such as Aberdeenshire may have an improved climate and benefit from a net increase in agricultural yields, lower winter mortality, lower heating requirements and a possible increase in tourism. However, Aberdeenshire will also experience rapid rates of warming with consequent longer term impacts on infrastructure, human health, rivers, soils, land use, transport and biodiversity.

3.3 The Bigger Issue report (2007) identified the following as having a particular impact on Aberdeenshire:

- Flooding will become a bigger problem, with more frequent landslides.
- Lower water levels and higher water temperatures in summer will have negative consequences for fish populations, i.e. Atlantic Salmon, with knock on effects for tourism, jobs and the economy.
- Because of low river levels, shortages of water for industrial, agricultural and domestic use could become all too common.
- Increases in storms would create problems for local forestry
- Higher temperatures could change the range of crops, or the varieties of crops that farmers can grow, while some crop pests and diseases could spread north
- Decreased amounts of snow could make the skiing industry unviable.
- Rising sea temperatures could cause fish stocks to move northwards, threatening the viability of Aberdeenshire's fishing fleet
- Invasion by non-native species could also be a threat to Aberdeenshire's native plants and species

3.4 The Bigger Issue report (2007) also highlighted the significant impacts that Climate Change is likely to have on Aberdeenshire Council, with the Council's Transportation and Infrastructure Service expressed concern that *"some of the worst and most expensive impacts would be in areas that were their responsibility. (For example)..Insurance costs would inevitably rise as more claims were made because of damage to buildings. The increased frequency of extreme weather events would also result in public services being disrupted more often*".

3.5 The above view is supported by Aberdeenshire Council's Local Climate Impacts Profile (LCIP), which shows how extreme weather events have affected Aberdeenshire in the recent past. The table below shows the main impacts of extreme weather events recorded in the LCIP, with disruption to processes being by far the greatest impact of extreme weather events, i.e. road closures, public transport disrupted or stopped, and school or business closures. It should be noted that Figure 1 is indicative and does not reveal the full impact of the severe weather recorded.

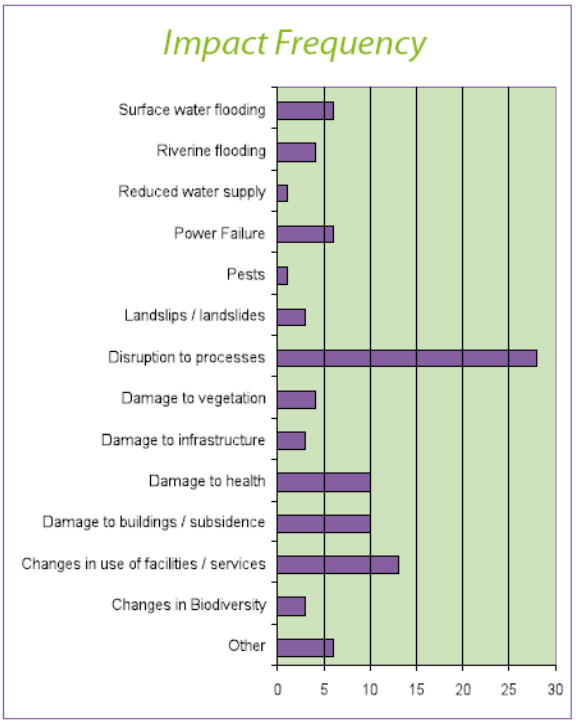

Figure 1: Impact Frequency.

3.6 The Bigger Issue report (2007) also points out that action on climate change provides "*a huge business opportunity for the Northeast… Aberdeenshire has a tremendous opportunity to lead the way on renewable energy issues by building on oil based engineering skills and technology*". In addition, the report highlighted that action on climate change would help avoid increased energy prices, carbon taxes and having to deal with consequences and costs of increased storms , such as repairs and higher insurance premiums".

3.7 In response to the 'Bigger Issue' (2007) the North East Climate Change Partnership was formed in 2007. As a member, Aberdeenshire Council has, along with other members, including Aberdeen City Council, signed a Declaration which acknowledges that "*climate change is occurring and will affect the economy, environment and quality of life in the north east of Scotland, as well as nationally and globally*". The declaration also states that in order to mitigate and adapt to climate change it is "*necessary to start taking action immediately*".

4. Regional/Strategic Policy Context

4.1 Aberdeenshire Council signed the national 'Climate Change Declaration' in 2007 and most recently in 2011. As a signatory, the Council is committed to taking action on a range of issues, including "*reducing emissions from the local authority area..(and) assessing the risks of climate change impacts and working with others to adapt to the impacts of climate change*".

4.2 Aberdeenshire Council's 'Sustainability Charter' also promotes climate change mitigation, with a key action being to reduce greenhouse gas emissions. In addition, one of the principles of the charter includes the need to "*minimise the use of non-renewable resources like fossil fuels and use renewable energies*".

4.3 Aberdeenshire Council's Climate Change Action Plan 2011-2015 sets out the structures, governance and projects that will help the Council to deliver its duties under the Climate Change Act. The plan confirms the Council's commitment to reducing GHG emissions by stating that becoming carbon neutral in the short to medium term is one of the Council's strategic priorities.

4.4 The Draft Aberdeen City and Shire Strategic Development Plan (SDP) includes an objective to reduce CO_2 emissions, promote adaptation and limit non-renewable resource use. While the SDP's approach reflects the requirements of national legislation and policy, as outlined above, it also sets out a number of specific requirements which are listed below:

- all new buildings to be carbon neutral by 2020, with development plans required to promote a gradual move towards this target.
- development plans required to identify areas or technology which can contribute to the supply of renewable energy.
- For all new developments to use water-saving technology.
- To avoid development on land which is at an unacceptable risk from coastal or river flooding, except in exceptional circumstances.
- Use master planning (and supplementary guidance) to consider the possible scope of combined heat and power schemes to contribute towards using energy more efficiently and in reducing the amount of energy used overall

5. A Local Development Plan Climate Change Policy

5.1 The Local Development Plan 2012 (LDP) currently addresses Climate Change through an aim to '*reduce greenhouse gases from development in the area'*, which is delivered through the policies and the land allocations in the plan. It is still valid for an aim of the Local Development Plan to tackle the challenges of sustainable development and climate change in order to meet national legislation and policy, particularly:

- The need to reduce greenhouse gas emissions, as required by the Climate Change Act (2009) and reflected in national and regional planning policy
- The need to support the transition to a low carbon economy, as detailed in the 2011 Economic Strategy.
- The need to adapt to the current and future impacts of climate change, as required by the Climate Change Act, the Climate Change Adaptation Framework/Programme and reflected in national and regional planning policy

5.2 If anything, the conclusion from this position paper is that the challenges of climate change remain as important, if not more so, for the emerging LDP2016 as they are for the current LDP (2012).

5.3 The policy review process has confirmed that the LDP's current approach is already addressing many of the planning authorities climate change commitments, through SG's on Renewable Energy, Carbon Neutrality and Flooding and Erosion etc. However, a more detailed statement on the local development plan's legislative commitments on climate change (particularly on adaptation) and it's overall approach to these is required in order to justify and stress the importance of the current aim, and set out how it will be achieved.

5.4 This paper has discussed the wide ranging policy implications of adapting to and mitigating climate change, and the explicit importance that the Scottish Government places on these objectives. The preferred means of reflecting this emphasis and to stress the importance of action on climate change is to introduce a new policy (Policy 15) into the plan on the basis that it would enable the LDP to develop and demonstrate a clear, comprehensive and coherent approach to climate change, with regard to why action is required and how it will be achieved. An example of a model policy is presented below:

Table 2: LDP Policy

Policy 15 Climate Change
Aberdeenshire Council recognises the serious implications of climate change and the responsibility that it has to assist in reducing the causes and adapting to the impacts of climate change. Aberdeenshire Council will support and promote development forms and patterns that reduce greenhouse gas emissions and/or specifically address the likely impacts of climate change, where such development is compatible with the other policies of this plan. The way we will do this is set out in the following supplementary guidance: SG Climate Change 1 Wind energy *[This removes "SG Rural development 2 Wind farms and medium to large wind turbines" from the "Policy 3 Development in the countryside" policy to relocate it under this policy]* SG Climate Change 2 Other renewable energy developments *[This removes "SG Rural development 3 Other renewable energy developments" from the "Policy 3 Development in the countryside" policy to relocate it under this policy]* SG Climate Change 3 Flooding *[This removes "SG LSD8 Flooding and erosion" from the "Policy 8 Layout siting and design of new development" policy to relocate it under this policy] [See also Main Issue 5]* SG Climate Change 4 Carbon Neutrality in new development *[This removes "SG LSD11 Carbon neutrality in new developments" from the "Policy 8 Layout siting and design of new development" policy to relocate it under this policy]* All new buildings are required to achieve a "Gold" sustainability label in 2016 and a "Platinum" label in 2020. All new buildings are also required to avoid 20% of the Building Standards mandatory CO_2 reduction targets through the installation and operation of low and zero-carbon generating technologies. This proportion will rise to 25% in 2020, and 30% in 2026. SG Climate Change 5 Water Efficiency in New Developments.

5.5 The alternative is to accept that there is no need to strengthen the existing aim, and to make no addition to the policies. No change would be made to the supplementary guidance. This option is not preferred because an 'aim' does not provide the necessary scope to clearly,

comprehensively and coherently set out the LDP's climate change commitments and the approach taken to these.

5.6 A further alternative would be to expand the terms of this policy to include a much wider range of issues associated with climate change, including restoring the water environment, sustainable design, sustainable travel and carbon storage. However, we do not feel that this is appropriate as "taking on the challenges of sustainable development and climate change" is an aim of the plan and a requirement of all policies. We take the view that only policies which largely and directly relate to mitigation or adaptation should be included in the policy. The fact that other policy topics have climate change implications does not necessarily require them to be supplementary guidance under a climate change policy, although they should be referenced in the justification text. Likewise questions associated with creating sustainable travel patterns are inherent in the settlement strategy promoted by the proposed Strategic Development Plan and are unlikely to require a specific policy.

6. Supplementary Guidance to be Included in a Climate Change Policy.

6.1 As mentioned above, while a number of "Supplementary Guidance" policy statements (SG's) address climate change issues, it is considered appropriate that only those which largely and directly relate to mitigation or adaptation should be included as supplementary guidance in the policy. For example, while LSD:2 Layout, Siting and Design promotes mitigation by requiring applicants to maximise solar gain, optimise resource efficiency, demonstrate connectivity and sustainability of heating, lighting, water and waste systems, it also addresses house types and sense of place etc, which are unrelated to climate change. In light of this, LSD2 is more appropriately located in a general LSD policy. The SG's to be included in the policy are set out below. Where relevant, significant changes are identified and discussed, with preferred and reasonable alternative options set out.

6.2 Supplementary Guidance Layout, Siting and Design11: Carbon Neutrality in New Developments

6.2.1 SG LSD11 requires all new buildings to achieve a 60% carbon reduction in 2013, 90% in 2015 and a 100% reduction (carbon neutrality) by 2017. It also requires all new buildings to achieve an 'active' rating under the Sustainability Labelling Scheme, whereby at least some of the carbon reduction is achieved through the installation of low and zero carbon generating technologies (LZCGT's). This SG relates largely and directly to climate change as it addresses the following national legislative and policy requirements:

- Climate Change Act requirement for public bodies to contribute to a 42% reduction in greenhouse gases by 2020 and an 80% reduction by 2080.
- Section 72 of the Climate Change Act, which requires a rising percentage of carbon reduction to be delivered through the installation of low and zero carbon generating technologies (LZCGT's)
- Structure Plan target for all new buildings to be carbon neutral by 2016.
- Scottish Government's strategic priority for a 'transition to a low carbon economy'.

6.2.2 The policy review process identified two key issues which need to be addressed in order to align the SG with the Climate Change Act and the proposed SDP (2013). Before discussing the two 'main issues', it is important to note that the proposed SDP states that "*joint supplementary guidance may be prepared to require new development to meet specific carbon-dioxide levels".* Currently, Aberdeen City and Aberdeenshire's LDP policies on 'carbon reduction in new development' include different carbon reduction targets and timetables for their delivery. The development of joint supplementary guidance has significant merit, as it would provide a consistent approach to carbon reduction across the North East. This would avoid the situation where one Council sets higher carbon reduction targets and/or a shorter timescale for their

delivery, which, given the costs associated with carbon reduction, could influence development decisions. In light of this, officers from Aberdeenshire and Aberdeen City Councils have agreed to develop a joint approach to carbon reduction and LZCGT targets and the timetable for their delivery.

How should Carbon Neutrality be Achieved by 2020?

6.2.3 There is a need to amend LSD11's CO_2 reduction targets and the timetable for their implementation, as development management have highlighted that there are significant challenges in achieving these targets, which are significantly higher than the Building Standards (BS's) requirements, i.e. 50% higher in 2013. The proposed Strategic Development Plan (SDP) has also extended the date for all buildings to be carbon neutral, which it defines as *'development which limits the amount of energy used and creates as much renewable energy as it uses each year for heating and electrical appliances*", from 2016 to 2020. Given that the LDP is legally required to align with the SDP, there is a clear need for the carbon reduction targets within SG:LSD11 to be reduced and phased in over a longer time period, in order to achieve carbon neutrality by 2020, not 2016.

6.2.4 With regard to how carbon neutrality could be achieved by 2020, the LDP could rely on the mandatory Building Standards (BS's). However, while future increases were expected to be in line with the Sullivan Report's (2007) recommendation for carbon neutrality by 2016, the Sullivan panel has been reconvened to review their recommendations and are not expected to report back until the end of 2013. While the Sullivan panel may still recommend a path for the mandatory BS's to achieve carbon neutrality by 2020, there is no guarantee this will happen, particularly as the Scottish Government has announced that the increase in the building standard for CO_2 reduction, which was expected in 2013, will not be implemented until Oct 2015. In light of the above, if the Council were to align with the mandatory building standards, there is no guarantee that this approach would meet the proposed SDP target for all new buildings to achieve carbon neutrality by 2020.

6.2.5 The Proposed SDP also states that supplementary guidance may require new development to meet CO_2 reduction targets "*through the sustainability labelling mechanism*". The sustainability labelling scheme (SLS), which was added to the Building Regulations Technical Handbooks in 2010 (Section 7), aims to encourage more demanding sustainability standards and enable consistency between planning authorities that use supplementary guidance, such as LSD11, to promote higher levels of sustainability in their areas. The SLS requires all new buildings submitted for building warrant to achieve a sustainability label. While the entry level label, Bronze, requires compliance with the mandatory building standards, the scheme includes a further five optional labels with rising sustainability requirements; Bronze Active, Silver, Silver Active, Gold and Platinum. With regard to domestic buildings, the silver and gold labels require applicants to meet increased standards in 8 aspects, including carbon emission reduction and water efficiency etc. The platinum level refers to carbon emission reduction only, requiring buildings to meet a net zero carbon standard. It should be noted that the sustainability labels only apply to new buildings. The carbon emissions reduction thresholds for each label are set out below:

Domestic

- Silver – 45% carbon reduction over 2007 building standard
- Gold – 60% reduction
- Platinum – 100 reduction (net zero carbon equivalent)

Non-Domestic

- Silver - 50% reduction
- Gold – 75% reduction
- Platinum – 100%

6.2.6 It should be noted that the mandatory BS requirements for CO_2 reduction are due to increase to 45% for domestic buildings and 60% for non domestic in Oct 2015.

6.2.7 In light of the above, the preferred approach is to use the Sustainability Labelling Scheme, with applicants required to meet the 'Gold' sustainability label in 2016 and 'Platinum' in 2020. This approach is preferred as it would enable the policy to align with a nationally recognised standard and adopt a gradual, phased approach to carbon reduction, with carbon neutrality achieved by the SDP target date of 2020.This is also the preferred approach of Aberdeen City planning officers.

6.2.8 The alternative would be to rely on the mandatory BS's to require carbon neutrality by 2020. This option is not preferred as there is no guarantee that the mandatory BS's would meet the SDP target date. This approach would also not be in line with the SDP's recommendation for the Sustainability Labelling Scheme to be used.

What percentage of carbon reduction should be met through the installation of LZCGT's and how should this rise over time?

6.2.9 LSD11 does not fully comply with the requirements of Section 72 of the Climate Change Act, as a 'specified and rising proportion of expected CO_2 reduction from LZCGT's' is not provided. For example, LSD11 requires new buildings to achieve a Bronze 'Active' sustainability label, which only demonstrates that some LZCGT's have been used. Currently there is no scope within the sustainability labelling scheme to demonstrate that a percentage of CO_2 reduction is achieved through the installation of LZCGT's. In light of this, the policy must specify a rising percentage of CO_2 emissions to be reduced through LZCGT's.

6.2.10 A review of the approach and targets set out in recent LDP's and Proposed Plans is shown below:

Table 3: **Approaches of other Local Authorities**

Local Authority	**Policy Approach**
Aberdeen City LDP (2012)	50% of the Building Standards mandatory CO_2 reduction targets to be achieved through LZCGT's. Based on expected increases in the mandatory Building Standard in 2015, this means that 'domestic' builds would need to achieve a minimum: 22.5% reduction of the total projected CO_2 emissions through LZCGT's in 2016
Orkney Islands LDP (adopted 2012) Stirling Proposed Plan (2012) Dundee City Proposed Plan (2012)	10% of the mandatory BS CO_2 reduction in 2012, rising to 15% in 2015/2016 Based on expected increases in the mandatory Building Standard in 2015, this means that 'domestic' builds would need to achieve a minimum: 6.75% reduction of the total projected CO_2 emissions through LZCGT's in 2016

6.2.11 The above table shows that requiring a rising percentage of the mandatory Building Standards CO_2 reduction to be delivered through LZCGT's is the preferred approach of Orkney, Stirling and Dundee. This is also the approach recommended by the Scottish Government.

6.2.12 The table also shows that from 2016 Aberdeen City will require LZCGT's to deliver 50% of the mandatory Building Standards CO_2 reduction through LZCGT's. It would be difficult for the next LDP to justify a 50% requirement, given that the current plan does not specify a percentage and a number of other recent LDP's will require significantly less in 2016. In light of this, the following targets have been agreed with Aberdeen City planning officers.

6.2.13 The preferred approach is that policy should specify that a 'medium' percentage, equating to 20% of the mandatory building standard CO_2 reduction target in 2016, is met through the installation of LZCGT's, rising to 25% in 2020 and 30% in 2026. This approach is preferred as it

would meet Section 72 of the Climate Change Act, promote the transition to a low carbon economy and contribute to national renewable energy targets.

6.2.14 An alternative approach would be to continue with the current approach. This option is not preferred as it does not comply with Section 72 of the Climate Change Act.

6.2.15 Another alternative would be for the policy to specify that a 'low' percentage, 10% rising to 15% in 2020, is met through the installation of LZCGT's. While this approach would comply with Section 72 of the Act and enable higher levels of CO_2 reduction to be achieved through energy efficiency measures, we are of the view that the preferred option can be achieved and would make a greater contribution to a low carbon economy and national renewable energy targets.

6.2.16 While a further alternative would be to specify a 'high' percentage of 30% in 2016 rising to 35% in 2020, there is evidence to suggest that the development industry would face significant challenges in meeting these targets. This approach may also detract from measures to maximise the energy efficiency of buildings.

6.3 Flooding and Erosion

6.3.1 National and regional policy clearly identifies flooding and coastal erosion as two of the key climate change impacts which need to be addressed by development plans. For example, SPP states that "*development should…normally be avoided in areas with increased vulnerability to the effects of climate change, particularly areas at significant risk from flooding, landslip and coastal erosion*".

6.3.2 In light of the above, SG LSD8: Flooding and Erosion can be seen to relate largely and directly to climate change adaptation and should therefore be included within the new Climate Change policy. The position paper on Flooding and Erosion provides detailed information on the national and regional policy context for the LDP's current approach, identifies key issues and sets out options for how these could be addressed.

6.4 Renewable Energy

6.4.1 National and regional policy strongly supports renewable energy generation as a way of reducing GHG emissions. For example, the Draft SPP states that "*the planning system should help to address climate change (mitigation) by…supporting the expansion of renewable energy generating capacity*". The support provided for renewable energy developments in the current and draft SPP is reflective of broader government targets for the reduction of GHG emissions and the production of energy from renewable sources, as set out in the Climate Change Act (2009) and the Scottish Government's 2011 Economic Strategy.

6.4.2 In light of the above, it is clear that the LDP's supplementary guidance on renewable energy generation relates largely and directly to climate change mitigation and should therefore be included within the new Climate Change policy. The position paper on Renewable Energy provides detailed information on the national and regional policy context for the LDP's current approach, identifies key issues and sets out options for how these could be addressed.

6.5 Water Efficiency

6.5.1 The Council's 'Bigger Issue' Report (2007) into Climate Change outlined the predicted impacts of climate change on Aberdeenshire's rivers. The report states that increased flooding in autumn, lower river flows and higher water temperatures would *"have consequences for fish populations, with knock on effects for tourism, jobs and the economy. Shortages of water for industrial, agricultural and domestic use could become all too common*". The proposed SDP also highlights the particular importance of the River Dee as an economic asset, Special Area of Conservation (SAC) and the main source of drinking water in Aberdeenshire. While the SDP

points out that the River Dee is already under pressure, it reflects The Bigger Issue report's findings when it points out that "*the effects of climate change may affect the river and we may have to take appropriate adaptation measures'*. In light of this, the SDP adopts a precautionary approach by setting the following targets:

- To avoid having to increase the amount of water Scottish Water are licensed to take from the River Dee, as a result of the new developments proposed in the plan.
- For all new developments to use water-saving technology.

6.5.2 It should be noted that the promotion of water efficiency in new developments would also contribute to climate change mitigation, as water use accounts for 0.6% of the UK's total CO_2 emissions, while hot water use accounts for 5% of emissions.

6.5.3 Given that the LDP is legally required to align with the SDP targets, there is a clear and justified need for new supplementary guidance, which requires water efficiency measures to be installed in all new developments.

6.5.4 With regard to how a new SG would promote water efficiency in new developments, the SG could utilise the Sustainability Labelling Scheme (SLS), which includes water efficiency targets/measures for the silver and gold labels. This would provide a nationally recognised and verifiable methodology. However, the SLS does not address water efficiency in non domestic buildings and would therefore not meet the SDP target for 'all new developments' to use water saving technology. While there is a greater financial incentive for businesses to install water efficiency measures, a policy requirement would be needed to ensure that the SDP target is met in full. This could be achieved through the BREEAM scheme, which provides a number of water efficiency 'levels'.

6.5.5 The preferred approach is that a new SG on Water Efficiency in New Developments should be developed and included within the Climate Change Policy. Applicants would be required to achieve a 'Gold' sustainability label for water efficiency in domestic buildings and BREEAM level 4 for water efficiency in non-domestic buildings. This option is preferred as it would increase water efficiency, minimise water abstraction from the River Dee, meet the SDP's targets and also contribute to climate change mitigation.

6.5.6 An alternative would be to continue with the current approach, whereby the LDP does not require water efficiency measures in new developments. Given that there is no information on when the mandatory building standards will require water efficiency measures; this approach is not preferred as it would fail to meet the SDP targets.

6.5.7 A further alternative would be to require applicants to achieve a 'Silver' sustainability label for water efficiency in domestic buildings and BREEAM level 3 for water efficiency in non-domestic buildings. While this approach would still increase water efficiency and meet the SDP requirements, it is not preferred as we take the view that the higher standard can be achieved.

6.6 Carbon Soils

6.6.1 In 2010 the Scottish Government published a discussion paper on the '*Management of Carbon-Rich Soils'*, which set out the Government's position with regard to carbon rich soils, with a particular focus on climate change mitigation. Scotland's soils contain some 3,000 million tonnes of CO_2, with peat and organo-mineral soils that are rich in carbon covering about 60% of the Scottish land mass. The stock of carbon in our soils corresponds to nearly 200 times our net annual GHG emissions.

6.6.2 While current CO_2 emissions from soil damage etc are not generally counted in national reporting inventories, it is clear from the above that the loss of a small proportion of Scotland's carbon-rich soils could add significantly to Scotland's GHG emissions.

6.6.3 Carbon-rich soils are relevant not only to climate change mitigation but also to adaptation. For example, peaty soils and bog habitats that are degraded are, in general, at much greater risk of damage if there is prolonged drought, especially in summer, and further at risk of erosion if there is then heavy rainfall.

6.6.4 The 2009 Scottish Soils Framework (SSF) aims to promote the sustainable management and protection of soils by setting out the key pressures on soils, relevant policies to combat those threats and the actions required across a range of sectors. With regard to carbon rich soils, the SSF expects Local Authorities and land managers to assess the impact of activities on carbon storage.

6.6.5 SPP (2010) supports the need to protect carbon rich soils when it states that "*the disturbance of some soils, particularly peat, may lead to the release of stored carbon, contributing to greenhouse gas emissions. Where peat and other carbon rich soils are present, applicants should assess the likely effects associated with any development work*". SPP also supports the protection of soils in general by stating that "*decision making in the planning system should.. take into account the implications of development for water, air and soil quality*".

6.6.6 The Draft SPP (2013) explicitly states that development plans should aim to minimise the release of CO_2 from soils. The draft also states that "*consideration of proposals for wind turbine developments should take account of…. impacts on carbon rich soils, using the carbon calculator*".

6.6.7 While there is a clear policy context for the protection of carbon rich soils, it is important to note that there is a limited distribution of carbon rich soils in Aberdeenshire. For example, the highlighted areas within Figure 1 show the carbon rich areas in Aberdeenshire (Class 5 and 6: JHI Soil Classifications).

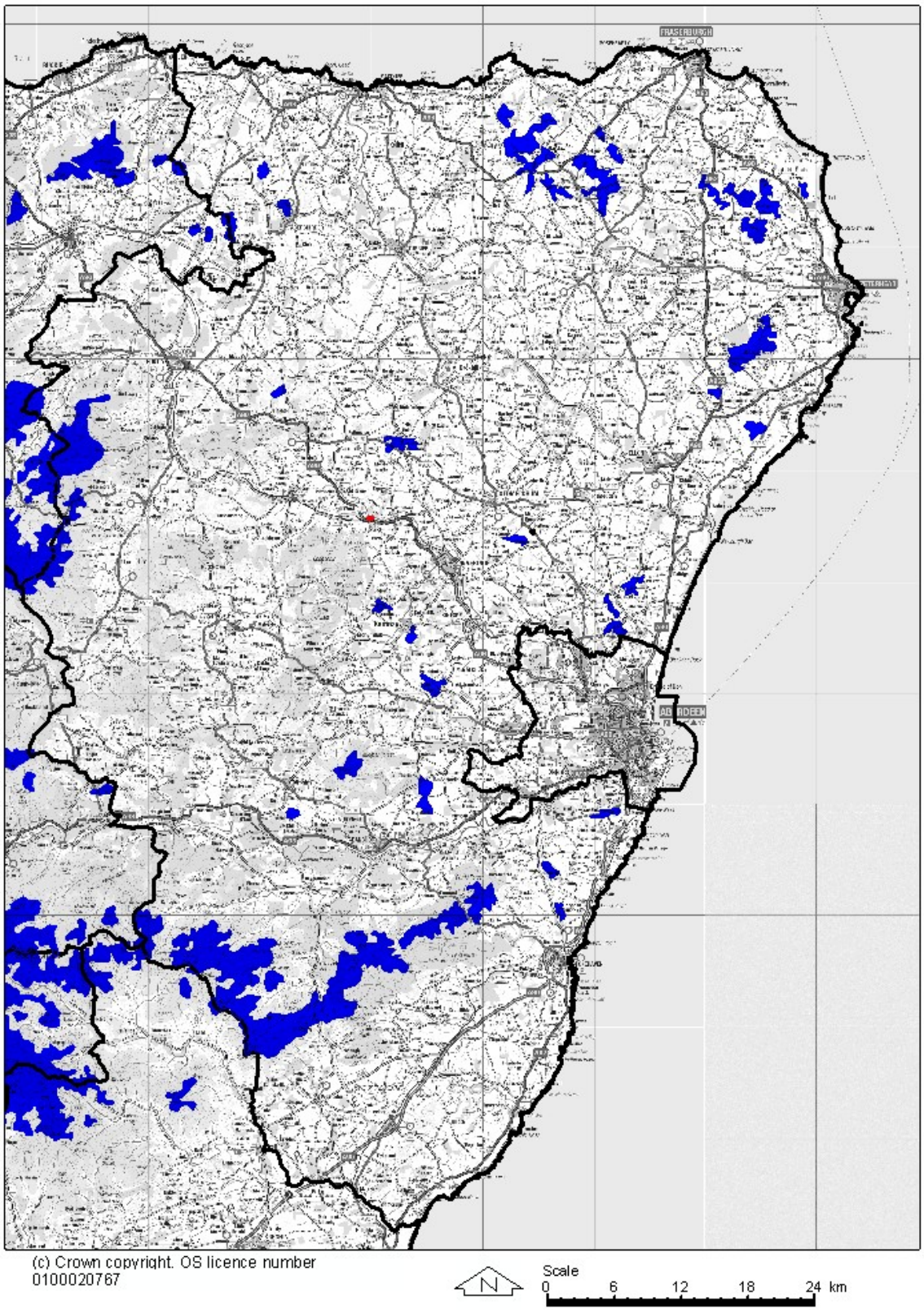

Figure 2: Carbon Rich Areas in Aberdeenshire.

6.6.8 Currently the protection of carbon rich soils is addressed in Natural Heritage2: Protection of the Wider Biodiversity and Geodiversity. Criteria 3 requires applicants to demonstrate that "*due regard has been given to the extent of organic and organic-rich soils on sites, (in order) to limit loss of soil carbon and the potential contribution of soil disturbance to greenhouse gas emissions*". While this approach addresses the SPP requirement for consideration of carbon rich soils, there is a need to significantly expand the approach to require use of the 'carbon calculator' when assessing the impacts of wind turbines on carbon soils. In addition, the current approach should be amended to utilise the map based classifications of carbon soils which the James Hutton Institute have provided.

6.6.9 The preferred approach is to expand SG Safeguarding 2 to include the protection of carbon rich soils. This would require the policy to be relabelled ("Protection and conservation of agricultural land and carbon rich soils"), with an additional section added on carbon soils.

6.6.10 An alternative approach would be to include a new 'Protection of Carbon-Rich Soils' SG within the Climate Change Policy. While this approach would clearly relate the issues of development on peat-rich soils to the Climate change issue, it also leads to confusion in relation to the other soil related policies.

6.6.11 Another alternative would be to expand the current approach within SG Natural Environment 2 "Protection of the wider biodiversity and geodiversity". However, a fit with this policy topic is hard to justify.

7 Implications of Climate Change Policy on Other LDP Topic Areas

Transport Related Greenhouse Gas Emissions

7.1 The need to address transport emissions is emphasised in national and regional planning policy. For example, the Draft SPP states that development plans should reduce CO_2 emissions by "*promoting a pattern of development which reduces the need to travel and encourages active travel and travel by public transport*". Reducing transport emissions is a key issue in Aberdeenshire, where road transport emissions account for 27% of the total CO_2 emissions.

7.2 We consider that transport emissions are most appropriately and effectively addressed through the allocations process. While the draft SDP directs the scale and distribution of development by identifying three broad areas; i.e. Strategic Growth Areas, and the LDP settlement strategy sets out where development will be concentrated in Aberdeenshire, i.e. around settlements, it is the allocations process which identifies the locations/settlements. By setting assessment criteria which directs allocations to locations which reduce car travel, promote active travel and public transport, transport related emissions can be effectively reduced. For example, development bids submitted to the Council for inclusion in the next LDP were assessed using an SEA and GAM scoring matrix which considered the following:

- Impact on transport related CO_2 emissions (SEA)
- Connectivity to existing settlement
- Proximity to local services
- Proximity to public transport links

Settlement Strategy

7.3 The Climate Change policy is unlikely to have a significant impact on the LDP's settlement strategy, as the latter accords with national planning policy, in terms of how the distribution and pattern of development can contribute to climate change mitigation. For example, the LDP's settlement strategy concentrates development around existing settlements, which aligns with the PP requirement to "*promote a pattern of development which reduces the need to travel and encourages active travel and travel by public transport*". It also accords with NPF2 which

requires the "*promotion of compact settlements*" and the draft NPF3, which encourages a focus on "*improving existing settlements*".

Rural Development

7.4 While transport emissions will primarily be addressed through the allocations process, there is scope to reduce road transport emissions by removing the cohesive group criterion/approach within the rural development policy. This criterion allows incremental growth to existing 'groups' of houses that are not big enough to be considered villages or settlements. Given that cohesive groups, which can range from 5-15 houses, are very unlikely to have accessible services or public transport links, their expansion will lead to increased car dependency and transport emissions. The position paper on Rural Development supports this view when it states that "*retaining the policy as it currently stands has the potential in the long term to result in sporadic rural clusters. This pattern would result in high car dependency and a lack of nearby services*". While it is accepted that SPP requires development plans to adopt a 'positive' approach to rural development, the position paper on rural development considers that "*there is sufficient provision for rural development to be delivered through other parts of the SG RD1*". In light of this, the removal of the 'cohesive groups' approach is supported by this position paper, on the basis that it would contribute to reduced car travel and associated CO_2 emissions.

Green Networks

7.5 SPP requires development plans to promote green networks in and around city regions and other cities and towns and points out that by "*encouraging connectivity between habitats, green networks can improve the viability of species and the health and viability of previously isolated habitats and ecosystems, supporting adaptation to climate change*". Green Networks are also identified as a way of tackling climate change in the draft Climate Change Adaptation Programme. While the current LDP does not have a policy on Green networks, NE2: Protection of the Wider Biodiversity and Geodiversity already addresses the need to encourage connectivity between habitats by requiring applicants to enhance biodiversity, with measures including the restoration of wildlife networks. NE2 also supports woodland expansion, which has the potential to connect fragmented habitats. Policy 8 identifies a need for approximately 40% of development sites to be "open space" while the open space strategy places an emphasis on informal space as providing the bulk of this. Green networks and the approach that is taken to them is likely to be a "main issue" for the forthcoming Main Issues Report.

Other policy topics

7.6 It is useful at this point to outline and highlight the wider contribution of other SG's in the justification of Climate Change policy. The relevant SG's are:

- LSD:2 Layout, Siting and Design contributes to mitigation by requiring applicants to maximise solar gain, optimise resource efficiency, demonstrate connectivity and sustainability of heating, lighting, water and waste systems. LSD2 also promotes adaptation by requiring applicants to demonstrate how a development will respond to the local climate in terms of wind, rain and snow.
- DC4: Waste Management Requirements for new Development contributes to mitigation by promoting sustainable waste management, which seeks to reduce the amount of waste sent to landfill and associated greenhouse emissions (methane)
- NE2: Protection of the Wider Biodiversity and Geodiversity requires applicants to identify measures that will be taken to enhance biodiversity and geodiversity, including the restoration of wildlife networks. This promotes adaptation by addressing the current and future need for some species to migrate as temperatures increase.
- SG Safeguarding3: Protection and Conservation of Trees and Woodland addresses the SPP requirement to support woodland expansion.

In each of these cases it may be appropriate to modify the supporting text to clarify the linkage to climate change mitigation and adaptation issues.

8. Conclusion

8.1 In order to reflect national policy and guidance, and address the significant issues raised by Climate Change in Aberdeenshire, a degree of change is required in the plan. While the policy context justifies the current LDP approach, there is a clear need to include a new Climate Change policy to enable the LDP to develop and demonstrate a clear, comprehensive and coherent approach to this issue, with regard to why action is required and how it will be achieved.

8.2 This policy should include existing supplementary guidance on renewable energy, carbon neutrality and flooding and erosion, a new SG's on water efficiency and modification of SG2 in order to address issues associated with carbon rich soils. The Climate Change policy should also reference the wider contribution of other SG's. There is also a need to revise LSD11: Carbon Neutrality in order to comply with the Climate Change Act and the Proposed SDP.

APPENDIX 1

9. Definitions of Climate Change 'Mitigation' and Adaptation'

9.1 The 2009 Climate Change Adaptation Framework (CCAF)) defines mitigation as "*the implementation of policies and actions to reduce greenhouse gas emissions and enhance carbon storage*". Mitigation is vital if the scale of climate change and the associated impacts are to be minimised. While the latest National Statistics (2011) show that Scottish GHG emissions were 29.6% lower than 1990 levels, further reductions will be required to meet the Climate Change Act targets for 2020 and 2080.

9.2 The CCAF defines adaptation as "*The adjustment in economic, social or natural systems in response to actual or expected climatic change, to limit harmful consequences and exploit beneficial opportunities*". It is widely accepted that the current levels of GHG emissions will lead to future climate change no matter what mitigation is undertaken. Adaptation is important to enable Scotland to adjust to the impacts of predicted climate change. While the initial focus of the Scottish Government has been on mitigation, adaptation is now widely seen as fundamental to the package of measures required to tackle climate change.

10. Likely Causes of Climate Change

10.1 In 2007, The Intergovernmental Panel on Climate Change (IPCC) stated that:

'Most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations.'

10.2 Greenhouse gases (GHG's) (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride) trap heat from the sun and warm the earth's surface through a 'greenhouse effect'. These gases are produced and released into the atmosphere as a result of human behaviour, such as burning fossil fuels like coal, oil and gas for energy use. Aberdeenshire Council's 'The Bigger Issue Report' (2007) points out that while the concentration of CO_2 emissions remained stable for 400,000 years, emissions have risen at an unprecedented rate since the industrial revolution. It should be noted that while there are six greenhouse gases; these are usually presented as *carbon dioxide equivalent* CO_2^e units.

Scottish Greenhouse Gas Emissions 2011

10.3 Table 4 below sets out the percentage of total Scottish GHG emissions by sector in 2011. Information is only provided on sectors which can be influenced by the planning system. For example, agriculture, aviation and shipping are not covered.

Table 4: Scottish GHG emissions by sector.

Scottish Government Sectors	**% share of emissions 2011**
Energy Supply	33%
Transport (excluding aviation and shipping)	20%
Business	17%
Residential	13%
Public	1%
Waste Management	4%
Development	3%

10.4 It is important to note that road transport accounts for 88.5% of all transport emissions, with 49.5% of emissions from car use alone. Source emissions from the Energy Supply sector can be attributed to the users of the energy, with 33% from business, 25% from the residential sector and 24% from transport sources. It is clear that the business/industry, transport and residential sectors are the main sources of both the 'energy supply' emissions and overall GHG emissions.

10.5 With regard to Aberdeenshire, the Department of Energy and Climate Change (DECC) have produced 'Local and Regional CO_2 Emissions Estimates for 2005-2011'. This shows that Aberdeenshire reflects the national trend, with the key emissions sectors being Industry and Commercial sector (26%), Road Transport (27%) and Domestic (31%).

10.6 'The Bigger Issue' (2007) report highlighted that the distribution of emissions in Aberdeenshire generally reflects the locations of the transport infrastructure and major towns. Areas of low population density in the west of Aberdeenshire have a low level of GHG emissions. This is attributable to the lack of transport infrastructure, industry and the upland character of these areas. Aberdeenshire has relatively light industrial emissions, which reflects the overall structure of the area's employment. The overall contribution of the transport system to the total emissions is low over the majority of Aberdeenshire, but there is a high level of impact along the major transport corridors.

11. Climate Change Projections

11.1 The UK Climate Projections 2009 (UKCP09) show the changes that can be expected during the rest of this century. Projections are available for three different emissions scenarios, low, medium and high. The graphs below show projected changes at five different probability levels up to the end of the century. Figure 2 shows that, under a medium emissions scenario, there is a 90% probability that the East of Scotland will experience a 4degC increase in annual mean temperature by the end of the century.

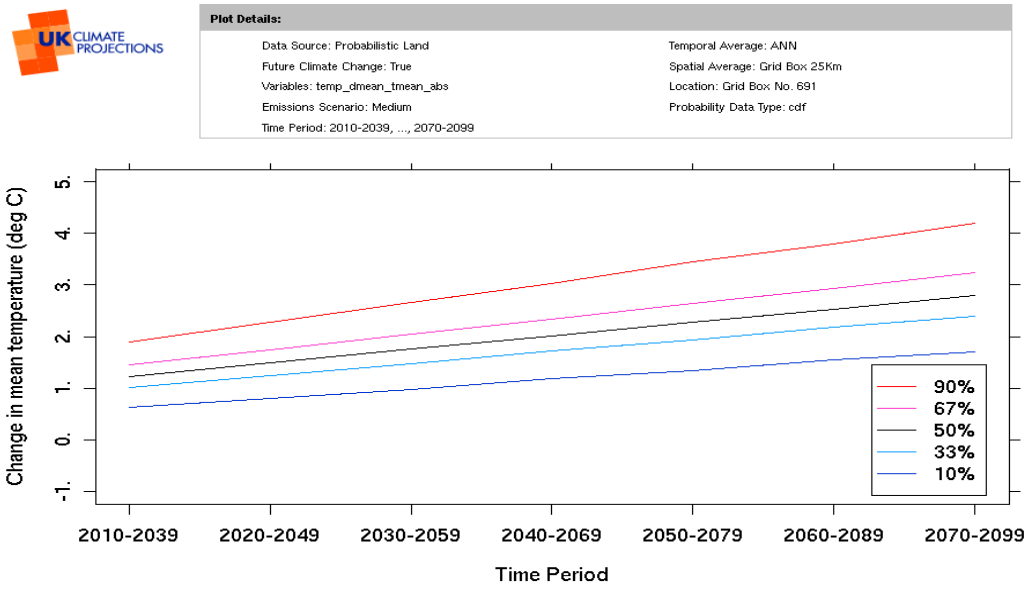

Figure 3 Predicted change in mean temperature over time

11.2 Figure 3 shows that, under a medium emissions scenario, there is a 90% probability that the East of Scotland will experience a 10% increase in annual precipitation by the end of the century.

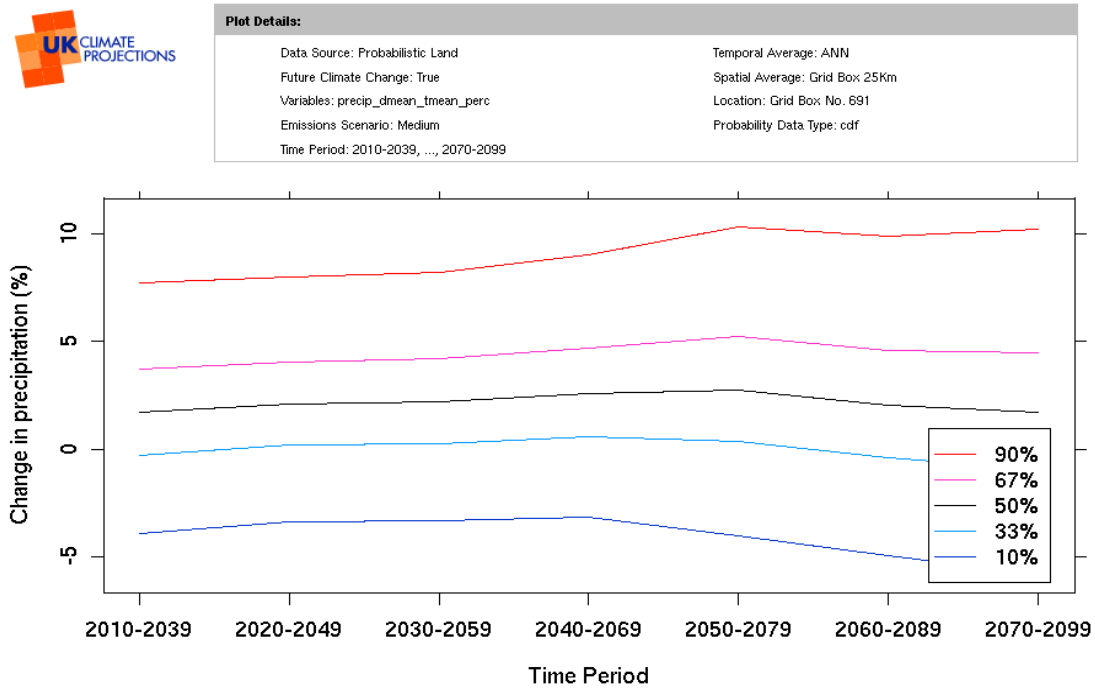

Figure 4 Predicted change in precipitation over time

11.3 Overall, under all the emissions scenarios, it is likely that the annual mean temperature in the East of Scotland will increase by 2-3^{o}C by the end of the century, while rainfall will increase in winter and decrease in summer.

11.4 The projections also show that over the next century the sea level around Scotland is going to rise. Scotland will also experience more extreme weather events, with more extended hot and dry periods, fewer days of snow and frost, with the wettest days of the year likely to be considerably wetter than at present. While projections do not currently exist for future storminess at a Scottish level, the projections suggest that while there may be a decreased number of storms, the strongest storms will be more intense.

12. Impacts of Climate Change

12.1 The UK Government's Sustainable Development Strategy – 'Securing the Future' (2005) states that "*the effects of a changing climate can already be seen. Temperatures and sea levels are rising, ice and snow cover are declining*".

12.2 The UK's 2012 Climate Change Risk Assessment (CCRA) has identified the main sectoral threats/risks that may result from Climate Change. A sample of impacts for each sector is provided below:

- *Impacts on the Natural Environment* - biodiversity and landscapes are likely to change significantly as a result of rising temperatures, while drier summers are likely to reduce river flows and soil moisture.
- *Business* - Increases in all forms of flooding could pose a major risk to Scottish businesses. As well as direct damage to premises, significant disruption may affect operations and supply chains.
- *Buildings and Infrastructure* - More frequent extreme weather events and increases in coastal and inland flooding could impact on buildings and disrupt transport and other key infrastructure across Scotland. Also, a potential reduction in water availability in summer could affect domestic users, industry and business.
- *Health and Well-Being* - Heat-related deaths and hospital admissions caused by hotter summers are projected to increase.
- *Coastal Areas* - Erosion and sea level rise could also damage (or further damage) coastal areas including communities and transport links.

12.3 The CCRA also points out that some impacts, particularly on transport and service connections, could be disproportionately higher in rural areas such as Aberdeenshire, with knock on negative effects for rural communities and businesses.

12.4 The CCRA (2012) identified the following two issues as requiring early adaptation action:

- Reductions in river flows and water availability during the summer
- Increases in flooding, both on the coast and inland

References

- Aberdeen City (2012) *Local Development Plan*
- Aberdeen City and Shire Strategic Development Plan Authority, (2013) *Proposed Aberdeen City and Shire Strategic Development Plan Proposed Plan*
- Aberdeenshire Council, (2012) *Aberdeenshire Local Development Plan*
- Aberdeenshire Council (2011) *Climate Change Action 2011-2015*
- Aberdeenshire Council (2011) *Climate Change Declaration*
- Aberdeenshire Council (2009) *Local Climate Impacts Profile*
- Aberdeenshire Council (2008) *Sustainability Charter*
- Aberdeenshire Council (2007) *The Bigger Issue*
- Department of Energy and Climate Change (2012) *Local and Regional CO_2 Emissions for 2005-2011*
- United Nations Intergovernmental Panel on Climate Change (2007) *Climate Change 2007 Fourth Assessment Report*
- The North East Scotland Climate Change Partnership Declaration http://www.aberdeenshire.gov.uk/green/MicrosoftWord-NESCCPdeclarationMay08.pdf
- The Scottish Government (2009) *Climate Change Act*
- The Scottish Government (2006) Planning Act etc.
- The Scottish Government, (2010). *Scottish Planning Policy*
- The Scottish Government (2013) *Scottish Planning Policy Consultation Draft*
- The Scottish Government (2009) *National Planning Framework 2*
- The Scottish Government (2013) *Draft National Planning Framework 3*
- The Scottish Government (2009) *Climate Change Adaptation Framework*
- The Scottish Government (2013) *Draft Climate Change Adaptation Programme*
- The Scottish Government (2011) *Economic Strategy*
- The Scottish Government (2012) *Low Carbon Scotland: Meeting our Emissions Reduction targets 2013-2027. The Second Report on Proposals and Policies (RPP2)*
- The Scottish Government (2011) *Greenhouse Gas Emissions*
- The Scottish Government (2013) *Building Standards Technical Handbook*
- The Scottish Government (2009) *Scottish Soils Framework*
- The Scottish Government (2010) *Management of Carbon Soils*
- The UK Government (2005) *Sustainable Development Strategy*
- The UK Government (2012) *Climate Change Risk Assessment*
- The UK Government (2006) *The Stern Review: Economics of Climate Change*