

**STROUD DISTRICT COUNCIL**  
**ENVIRONMENT COMMITTEE**

**AGENDA  
ITEM NO**

**6 JUNE 2019**

**6**

<b>Report Title</b>	<b>Progressing Carbon Neutral 2030 (CN2030)</b>
<b>Purpose of Report</b>	To set out the Council's initial response to its declaration of a Climate Change Emergency and the proposed framework for moving towards a Carbon Neutral District by 2030.
<b>Decision(s)</b>	<p><b>The Committee RESOLVES to:-</b></p> <p>a) Set up a cross-party member-officer group to coordinate the actions set out in this report and to ensure actions undertaken to achieve CN2030 are embedded across the Council. This will include:</p> <ul style="list-style-type: none"><li>• Monitoring the national policy position in respect of energy standards for new homes to ensure that the Local Plan, when examined, reflects the latest national policy.</li><li>• Commissioning work to inform the review of the Local Plan that identifies the potential contribution that could be achieved from the further roll out of renewable technologies and low carbon heat, including district heating, from across the district.</li><li>• Responding to the consultation on LTP4 requesting that GCC maintain a focus on schemes that encourage modal shift to low carbon transport options and which support both existing and future communities.</li><li>• Implementing the Council's Capital programme for investment in cycle paths/ greenways and integrate provision from new housing schemes.</li><li>• Contributing to work at county level to achieve zero carbon standards for new developments, including lobbying of Government as appropriate.</li><li>• Engaging the services of an energy agency to provide community retrofit advice and support.</li></ul>

	<p>b) Work with the Stroud District Local Strategic Partnership to take a cross sector lead in supporting the delivery of CN2030. This will include:</p> <ul style="list-style-type: none"> <li>• Creating and recruiting to a new CN2030 sub group/Board.</li> <li>• Establishing the capacity and resource needs of the Transition Towns and other voluntary sector groups to contribute to community engagement to achieve delivery of CN2030 across the whole District.</li> <li>• Working with the Transition Towns and other key partners to run a seminar/ working conference and draw in a wider section of public and commercial partners.</li> </ul> <p>c) Recommend recruitment of a new post within the District Council to support both the LSP and SDC in co-ordinating the CN2030 work.</p> <p>d) Commission work to define the District's baseline carbon emissions.</p> <p>e) Work with GFirst/LEP to establish sources of funding to support the implementation of the Gloucestershire Sustainable Energy Strategy.</p>
<b>Consultation and Feedback</b>	An initial discussion has taken place with representatives of Transition Stroud and the Chair and Vice Chair of the LSP.
<b>Financial Implications and Risk Assessment</b>	<p>Many of the actions within this plan will have financial implications for the Council. Before proceeding with any of them financial evaluation will be undertaken to assess those costs.</p> <p>As part of sound budgeting practice the Council has identified initial funds to begin meeting these commitments (See paras 41-45). As work develops and further funding is required, schemes will be subject to individual business cases as appropriate as is required by the Authority's Budget and Capital Strategies.</p> <p>Andrew Cummings – Head of Finance &amp; S151 Officer  Tel: 01453 754115  Email: <a href="mailto:andrew.cummings@stroud.gov.uk">andrew.cummings@stroud.gov.uk</a></p>

<b>Legal Implications</b>	<p>There are no specific legal implications arising from this report. Legal implications may arise on individual projects from the resolution as they are scoped and implemented, which will be provided as appropriate and required.</p> <p>Craig Hallett, Solicitor &amp; Deputy Monitoring Officer  Tel: 01453 754364  Email: <a href="mailto:craig.hallett@stroud.gov.uk">craig.hallett@stroud.gov.uk</a></p>
<b>Report Author</b>	<p>Barry Wyatt  Director of Development Services  Tel: 01453 754210 Email: <a href="mailto:barry.wyatt@stroud.gov.uk">barry.wyatt@stroud.gov.uk</a></p>
<b>Options</b>	<p>CN2030 in itself is not a legal requirement and consequently there is no legal duty for the Council to undertake actions and activities in support of the target. However the Council has agreed a motion that establishes 7 expectations and this report sets out the Council's initial response.</p>
<b>Performance Management Follow Up</b>	<ul style="list-style-type: none"> <li>• The Council's commitment to CN2030 will be an important element of our environmental auditing regime under ISO14001 which has replaced the previous approach under EMAS.</li> <li>• Environment Committee would receive regular updates from the performance monitoring members in addition to reports from the proposed LSP Board.</li> <li>• Under the mandate created by CN2030, reports requiring service committee or full Council approval will be brought forward.</li> <li>• The resolution agreed by council requires an annual progress report to Council.</li> <li>• A working group of members and officers will be useful to manage the Council's reduction in its operational CO2 emissions.</li> </ul>
<b>Background Papers/ Appendices</b>	<p>Appendix A Implementation of Climate Change emergency Motion.  There are numerous background evidence papers to both the main report and appendix. These can be provided but were too numerous to list.</p>

## Background.

1. The Council's Environment Committee agreed on the 13<sup>th</sup> December 2018 the following motion which was subsequently agreed by Strategy and Resources Committee on the 9<sup>th</sup> January and at Council on the 24<sup>th</sup> January.
  - a. To set out a plan of action, including clear targets and transparent reporting, to develop district wide locally determined contributions to

complement national determined contributions in line with the Paris Agreement to limit global warming to 1.5C.

- b. To include planning and support in the District for adaptation to the climate change that is already happening.
  - c. To develop a strategy for Stroud District Council to play a leadership role in promoting community, public and business partnerships for this Carbon Neutral 2030 (CN2030) Commitment throughout the District, County and region.
  - d. To work with partner bodies across the county to ensure that the climate emergency is adequately reflected in the development and implementation of all county wide strategies and plans, including Gloucestershire 2050, the Gloucestershire Industrial Strategy, Gloucestershire Energy Strategy and Gloucestershire Transport Plans.
  - e. To investigate all possible sources of external funding and match funding to support this commitment.
  - f. To work with key partner organisations within the County and region to secure external funding.
  - g. To report back on an annual basis to Council on progress made.
2. The report at Appendix A was written by Councillor Simon Pickering and sets out the more detailed context for this report, which responds, in part, to items (a) (b) and (c) above. The appended report usefully describes the headline issues and actions but does not seek to define how the council working with partners will achieve the challenges.
3. The appended report details key changes required over the next 11 years to become a carbon neutral district and are summarised below.
- a. a complete shift to very low or zero carbon electricity generation, mostly renewable and much of it decentralised;
  - b. smarter and more flexible management of electricity demand, including storage, to enable higher penetration of variable renewable generation and to optimise electricity system operation;
  - c. huge reductions in energy demand by improving significantly the energy performance of our buildings (across all sectors and all tenures) and the equipment and processes within them;
  - d. decarbonisation of heat (i.e. stop relying on fossil fuel gas and oil) for buildings, hot water and industrial processes;

- e. dramatic steps to cut the carbon emissions of road transport by switching to walking, cycling, efficient mass transport (not powered by fossil fuels) and a huge rise in the use of electric vehicles;
  - f. ensuring new build developments achieve their full low carbon potential and contribute effectively to a smarter energy system;
  - g. a dramatic reduction in emissions from agricultural food production and land use
  - h. a huge reduction in the generation of waste and a dramatic increase in low carbon means of dealing with waste;
  - i. a dramatic increase in the capture of carbon particularly, but not necessarily exclusively, through tree planting and land management
4. Given the scale of the challenge to achieve a net zero carbon goal it is likely that some of these future measures will entail radical steps that will require far reaching policy and societal changes. They will also rely on the measures taken at a national and international level to achieve an overall carbon reduction target. As was recognised in the agreed motion, the council cannot do this alone.
5. The report is not however intended to provide a step by step response to how the 9 key changes or outcomes set out above are to be achieved, but its purpose is to describe the initial pathways and process that will be engaged in order to achieve the outcomes. In addition to these initial steps, it is envisaged that a further plan of action will be developed under the governance arrangements proposed below.

### **Governance Arrangements**

6. As described above, the achievement of CN2030 cannot be achieved by the Council alone. With this in mind it is critical that the Council engages with organisations and individuals from across the spectrum. With support, the Local Strategic Partnership (LSP) could potentially present an opportunity to bring those wider stakeholders together, develop the plan of action and provide an oversight to the constituent member's contributions. This may be best achieved through the creation of a sub group or board with a membership that has a direct stake in the CN2030 agenda. It is recommended that the District Council approaches the Local Strategic Partnership at their June meeting and seeks their agreement to create a CN2030 Board, where its constituent members would own the agenda, further develop and implement actions. The Board could report back to the LSP and its constituent members, including the District Council, who would report back to their respective organisations. This is similar to the approach taken previously in 2007 when the LSP created the Global Challenges think tank which spawned the Council's environment 'Green Paper' and the subsequent Target 2050 programme which achieved national recognition and built upon

the success of the Gloucestershire Warm and Well Partnership which still flourishes today.

7. The objectives of the Board will need to be clearly spelt out and require further discussion. They could include: to oversee development, promotion, implementation and monitoring of the CN2030 strategy and a plan of action; to identify, develop, propose and promote carbon reduction and adaptation projects; and to inspire and champion initiatives to achieve CN2030 across communities, public bodies and businesses. The membership of the Board would be crucial. In order to be effective it would need to bring together representatives from public authorities, private sector organisations, businesses, technical experts and crucially community organisations such as the Transition Town movement as a key linkage into mobilising the community and mainstreaming carbon reduction and adaptation programmes alongside energy agencies such as SWEA (Severn Wye Energy Agency).
8. The approach to communications would need to be established by the Board in order to encompass the range of views and audiences and to mobilise community involvement and engagement. A number of Parish Councils have already set out their own commitments to achieving CN2030 and have requested further support in working with their communities.
9. The approach to mainstreaming, that will need to be established between the Board members, has been the subject of recent research that suggests moving away from behavioural campaigns that 'nudge' to those that 'think'. Studies of people who have consistently adopted low-carbon lifestyles support this approach, where their low-carbon lifestyles were impacted more by campaigns that actively made connections with societal concerns to promote a holistic view of a lower-carbon future, than 'to-do' lists of behaviour changes.
10. Clearly for the LSPs ownership to be a success, its administration needs to be appropriately resourced. It is therefore recommended that the District Council creates a post with this responsibility along with being the operational focus for CN2030.
11. Given that Forest of Dean District Council and Cheltenham Borough Councils have both adopted similar resolutions the option of a shared resource is being investigated as the necessary challenges and potential measures are likely to be very similar. Discussions are also taking place with other Gloucestershire authorities.

### **Recommended Actions.**

- a) Set up a cross-party member-officer group to coordinate the actions set out in this report and to ensure other actions undertaken to achieve CN2030 are embedded across the council.
- b) Work with the Stroud District Local Strategic Partnership to take a cross sectorial lead in supporting the delivery of CN2030 and to create and recruit to a new CN2030 sub group/Board to achieve this.
- c) Immediately recommend the creation of and recruitment to a new post within the District Council to lead on the CN2030 work and support both the LSP and SDC.

### **Establishing the baseline - Current CO2 emissions from the District**

12. The Council and committee resolutions assume that CO2 targets will be set and progress monitored. In the appended report it sets out the total emission's from Stroud District was 778 million tonnes of Carbon or 6.6 tonnes (co2e) per person per year. However, and in order to demonstrate the challenges associated with identifying a baseline, this figure does not include emissions associated with motorways passing through the district, products consumed within the district but produced elsewhere (including building materials and food) nor emissions from flights by district residents and businesses. So the figure of 6.6 t CO2e per person per year is likely to be significantly less than the carbon account of every resident that lives within the district.
13. While per capita carbon emissions associated with transport, gas and electricity consumption in Stroud have reduced by 26% between 2005 and 2016, broadly in line with national reductions, and are now 38% less than in 1990. These reductions have been largely delivered by decommissioning of coal-fired power stations, closure of heavy industry, significant improvements in the efficiency of road vehicles, the significant UK growth of renewables and by gains from energy efficiency improvements in buildings and equipment (boilers, appliances and lighting).
14. Given the challenges associated with establishing an all-encompassing baseline and in the absence of an agreed national methodology a great deal of time and energy can be consumed in establishing a figure which is always going to be subject to significant variability. However even taking a reduction target of 6.6tCO2e per person represents the proverbial Everest to climb. In this respect it is not essential at this early stage to know how exactly how high the mountain actually is but just that we need to start climbing now and climb quickly in the knowledge that when we think that every opportunity has been explored and implemented, the summit is still likely to be out of sight.
15. Performance can be monitored in the same way that the Council managed its Carbon Reduction Plan. This was to collate various initiatives with potential carbon savings estimates and then post implementation, capture the savings. The focus of the reporting would inevitably need to be on actions that the

CN2030 Board can control and aim to capture contributions that are significant enough to impact on government statistical data sets, although a summary of smaller projects will be necessary to maintain momentum.

**Recommended Actions.**

- d) Commission work to define the District's baseline carbon emissions.

**Raising Standards in New Private Homes**

16. Improving the energy efficiency of new homes has long been a hot topic of debate locally and at a national level the policy supporting councils to push the agenda beyond the building regulations is not straight forward. The Council has already commissioned work to establish what target could be legitimately set within the current national policy environment. At the current time this evidence supports a planning policy requiring all new homes to achieve a SAP rating of at least 86 (which is equivalent to the now extinct code level 4. (Passivhaus could be around SAP 94 but the methodologies do not make easy comparison)). To move beyond this position to one of carbon neutrality at the current time is not supported by national policy and would not therefore survive a local plan examination. The Council will need to monitor the situation as we move towards the local plan examination and if the national position changes then we will need to flex the plan to accommodate.
17. An additional issue relates to the long lead in time for larger developments where key decisions that could influence future energy performance take place up to 10 to 15 years upstream of commencement. Within the current policy context the best approach is to flag potential future requirements so that the industry can maintain flexibility to accommodate more stringent future CO2 targets.
18. Carbon neutrality in terms of new build homes is likely to need a number of policy and legislative changes at a national level to accommodate the implications. The challenge is increased if consideration is given to operational emissions (TV, washing machine, cooker etc) in addition to regulated emissions (heating and lighting) which are controlled by the Building Regulations. This would require the establishment of a mechanism for allowable solutions (essentially offsetting) as within the boundary of all sites sufficient energy generating measures could not be achieved.
19. Government has also signalled its intention to move away from fossil fuelled gas and instead focus on efficient electrical powered heat (ground source heat pumps or air source heat pumps). However it is unclear as to how this energy shift will be enacted through policy or legislation and until that time the District Council cannot require this approach.
20. One of the key building blocks in the Gloucestershire Sustainable Energy Strategy (GSES) is to develop stronger planning policies to require zero-carbon, smart-enabled new developments. To this end, the strategy includes the intention "to work to achieve zero carbon and smart enabled standards for new developments as new Local Plans are developed". The Council will contribute to this work, including joint lobbying of Government as appropriate.

### **Recommended Action**

- e) Monitor the national policy position in respect of energy standards for new homes to ensure that the Local Plan, when examined, reflects the latest national policy.
- f) Contribute to work at county level to achieve zero carbon standards for new developments, including lobbying of Government as appropriate.

### **Raising standards in existing private homes – Retrofit**

21. It should be recognised that the potential carbon saving coming from increasing the standards in new homes, while important, is relatively small given the significant improvements in standards to date and the comparatively small numbers of homes (5000) that will be built up to 2030 compared to the existing stock (60,000 by 2030) where the churn in redeveloping that stock is very slow. The retrofit of existing homes is therefore a key challenge to address in achieving zero carbon.
22. Under the title 'Target 2050', the Council previously initiated a project with the Severn Wye Energy Agency which focused on mapping out what a 60% reduction in CO2 emissions would look like across a range of house types. At the time this was a ground breaking piece of work and the legacy of parts of that approach still continue. This work needs to be re-visited and developed in the context of the GSES commitment to develop a proposal for a low carbon housing retrofit accelerator programme. This could, for example, result with SWEA working alongside the Transition Towns groups and the growing number of community based climate action groups in order to get greater community mobilisation. The previous approach failed to get sufficient penetration, partially as the previous focus for funding was one of fuel poverty and not carbon reduction.
23. The Target 2050 project originated from a background of supporting those most at risk of fuel poverty and the carbon savings associated with cost saving measures were almost as a by-product of that principle activity. While the focus is clearly on carbon savings the majority of the actions to achieve this end will also support those at most risk of fuel poverty. However some actions such as swapping to a green energy supplier (in isolation from energy reduction measures) may cost more and consequently would not be an option for those at risk of fuel poverty even if they were able to do so as some pre-payment meter providers do not provide this option.
24. SWEA were particularly effective at being responsive to government funding schemes by maintaining an up to date database of potential clients which enabled a quick evidence based application to be made when funding schemes were launched.
25. Retrofit to achieve carbon neutrality is unlikely to be achievable within the confines of most existing dwellings and their curtilages both technically or economically and consequently solutions will require significant offsetting interventions in terms of large scale locally based renewable energy schemes.

26. The Target 2050 project created a web based installers list of Gloucestershire based companies involved in energy retrofit called 'Link to Energy'. This list is still maintained and is important moving forward in order to support local wealth building.
27. It should be noted that a report for Joseph Rowntree Foundation (Hargreaves et al 2013) <https://www.jrf.org.uk/report/distribution-household-co2-emissions-great-britain> found a strong correlation between carbon emissions and household income. Therefore, it is likely that the greatest carbon savings can be achieved by those households with the greatest disposal income who will also benefit from the greatest savings in their energy costs.

#### **Recommended Actions**

- g) Engage the services of an energy agency to provide community retrofit advice and support.
- h) Establish the capacity and resource needs of the Transition Towns and other voluntary sector groups to contribute to community engagement to achieve delivery of CN2030 across the whole District.

#### **HRA Existing and New Stock**

28. The action plan that sits under the HRA Energy Strategy is due to be updated. The challenges associated with achieving carbon neutral retrofit in the HRA stock are the same as those in the private sector as set out at para 23 above. While energy standards in HRA new build would be expected to comply with the same standards as private developments, the HRA could chose to exceed those standards or make off site contributions, however this will impinge on viability and needs to be considered on a case by case basis.

#### **Recommended Action**

- i) Work with officers and members of the Housing Committee to ensure CN2030 is embedded into the work of the HRA as well as other providers of affordable housing in the district.

#### **Renewable Energy**

29. Members will be aware of the recently published Gloucestershire Sustainable Energy Strategy <https://www.gfirstlep.com/downloads/2019/gloucestershire-energy-strategy-2019.pdf>
30. The strategy looks towards a Carbon Neutral Gloucestershire by 2050 which is consistent with Governments emerging timetable but 20 years beyond the District Councils CN2030 agreement. The strategy is excellent in setting out all the 'whats' and some of the 'hows' but the burden of the next steps fall to GFIRST/LEP to take forward. This is a huge challenge for the LEP to resource this complex piece of work but it does underpin Gloucestershire's future approach to renewable energy. This needs to be coordinated across districts and importantly relies on studies and approaches that are common across all districts, grid capacity being a particular issue.

31. SDC needs to move now on some of this evidence gathering in order to inform the Local Plan review. The outputs being to identify potential capacity of 'in district' renewable energy generation and then establishing a policy framework to support deployment. The current national policy framework will need to be considered against any local aspiration. Opportunities may arise for the District Council to invest in renewable energy schemes and work in partnership with community energy groups.

#### **Recommended Actions**

- j) To commission work to inform the review of the Local Plan that identifies the potential contribution that could be achieved from further roll out of renewable technologies and low carbon heat, including district heating, across the district.
- k) To work with GFirst/LEP to establish sources of funding to support the implementation of the Gloucestershire Sustainable Energy Strategy and Stroud CN2030.
- l) Investigate options for investing in renewable energy generating and/or storage within the district to inform a subsequent business case for council approval.

#### **Reducing Transport emissions**

32. While 43 % of Gloucestershire's emissions are related to transport the district Council has little direct legislative influence over this.
33. Fundamental planning principles aim to promote sustainable development that minimises the need to travel and where it is necessary to promote the most sustainable means. This basic principle underlines the approach taken in the Council's Local plan.
34. The Council's Capital program provides £300K for investment in Cycle paths and their planning. New developments are also expected to make provision depending on the specific circumstances.
35. Aside from the highway issues associated with new developments, the County Council provides the strategic planning role in respect of Transport through the LTP4 (Local Transport Plan 4). This covers the promotion of modal shift to more sustainable means and is used as a means of allocating resources, the District Council contributes to revisions of the plan.

#### **Recommended Actions**

- m) Implement the Council's Capital program for investment in Cycle paths/greenways and integrate provision from new housing schemes.
- n) Respond to the consultation on LTP4 requesting that GCC to maintain a focus on schemes that encourage modal shift to low carbon transport options and which support both existing and future communities.
- o) Consider joint commissioning EV charging points with GCC at suitable SDC owned locations.

## **Waste**

36. In terms of future options regarding the collection and recycling of waste we need to ensure that a carbon accounting approach is taken towards all aspects of the service. While the District Council has control over the method of collection, it is not the Disposal Authority and therefore does not make decisions regarding low carbon means of disposal. Local options for the anaerobic digestion of food waste may be worth exploring but currently it is already digested and therefore the opportunities to extract greater carbon benefit are limited.

## **Food and Agriculture**

37. Agricultural policy is largely outside the remit of the District Council although, through planning policy and the implementation of green infrastructure requirements, there may be some opportunities to influence land management. A key role will however be in the promotion of low carbon food through Council facilities and communication. It is envisaged that the CN2030 Board will give consideration to how such initiatives can be built into a plan of action

## **Adapting to a Changing Climate**

38. It is usual for Climate change activity to be categorised under one of three headings:

- Mitigation – reducing CO<sub>2</sub> and other greenhouse gas emissions
- Adaptation - to alter what we do to take in to account that the climate is changing and
- Resilience – to take action to prepare for the harmful consequences of climate change.

The greater the actions to mitigate, reduce the need for the other actions but the point has been passed where no adaptive or resilience actions are necessary.

39. The planting of woodland for example, can be both a mitigating and a resilience action in terms of carbon sequestration and reducing the rate of surface water run-off and thereby reducing the flooding impact of severe rainfall. The opportunities and mechanisms for such interventions within the district would need to be explored and links in to the Council's 'Natural Flood Management' work.

40. From 2008-2010 local authorities reported against a process-based framework to help their preparations for a changing climate. This was known as NI188. In 2010, the Department for Communities and Local Government (DCLG) announced it would end central performance monitoring and the National Indicator (NI) set. However the approach taken under NI 188, as set out in the guidance, may still be useful for local councils as an adaptation framework to use on a voluntary basis.

### **Recommended Action**

- p) With the engagement of services across the council and external partners, update the work done on adaption to climate change previously under NI188, taking into account the range of potential actions identified in section 3 of Appendix A.

This links in with the Councils Civil Contingencies responsibilities.

### **Finances and Procurement**

41. The above recommendations for initial actions are not at a point where the costs can be accurately determined. Further discussions need to take place regarding additional staff, specifying the support required from an energy agency, SDCs share of supporting the implementation of Gloucestershire's Energy Strategy, the cost of commissioning an evidence base to support relevant Local Plan Policy work and procurement decisions regarding future fuel (gas electricity) suppliers.
42. The amended motion to the Environment Committee requested that the Council identified funds through the normal budget setting process to fund the scoping and delivery of the Council's Carbon Neutral 2030 Commitment.
43. The budget agreed by Council in February 2019 included a £60k revenue sum in the 2019/20 revenue budget.
44. In preparation of its annual accounts for 2018/19 the Council has reviewed the level of reserves that it holds earmarked for Council priorities. This has included topping up the level of the pre-existing Climate Change reserve by £32k to reach a level of £200k to support these actions.
45. Strategy and Resources Committee agreed in March 2019 to include "Supporting a Zero Carbon District" as one of the priorities for the distribution of the gain from the Business Rates Pilot, now known to be £897k. Therefore actions arising from this plan can also be considered as part of the wider uses of that funding.
46. As part of the review of the Council's procurement strategy, consideration will be given to the carbon impacts associated with goods, works and services that the Council procures. This strategy will be separately reported to Strategy and Resources Committee.

# Appendix A

## Stroud District Council

### Implementation of Climate Change Emergency Motion:

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## 1. INTRODUCTION

- 1.1. A Climate Emergency was announced by the Stroud District Council Administration on 16<sup>th</sup> November 2018 which pledged to “do everything within the Council’s power to make Stroud District Carbon Neutral by 2030“(Appendix 1).
- 1.2. This public call for action was followed up by a motion to the Environment Committee on 13<sup>th</sup> December 2018 which, after a minor amendment regarding timing of agreeing funding, was passed with unanimous support from all political parties (Appendix 2). This motion set out seven actions:
  - 1.2.1.To set out a Plan of Action, including clear targets and transparent reporting, to develop District wide Locally Determined Contributions to complement National Determined Contributions in line with the Paris Agreement to limit global warming to 1.5C.
  - 1.2.2.To include planning and support in the District for adaptation to the climate change that is already happening.
  - 1.2.3.To develop a strategy for Stroud District Council to play a leadership role in promoting community, public and business partnerships for this Carbon Neutral 2030 Commitment throughout the District, County and region.
  - 1.2.4.To work with partner bodies across the county to ensure that the climate emergency is adequately reflected in the development and implementation of all county wide strategies and plans, including Gloucestershire 2050, the Gloucestershire Industrial Strategy, Gloucestershire Energy Strategy and Gloucestershire Transport Plans.
  - 1.2.5.To investigate all possible sources of external funding and match funding to support this commitment.
  - 1.2.6.To work with key partner organisations within the County and region to secure external funding.
  - 1.2.7.To report back on an annual basis to Council on progress made.
- 1.3. The Environment Committee at which this motion was approved was probably unique in the history of Stroud District Council in terms of the number of local citizens attending the meeting in support of the Council rather than in opposition of something the Council was doing.
- 1.4. The Annual Budget and Satisfaction telephone survey asks both SDC residents and businesses for their opinions on the Council’s priorities and progress on improving the environment. This is a statistically robust survey carried out by an independent organisation.
- 1.5. The 2018 survey has reaffirmed the past 5 years of outstanding results -86% residents and 90% of businesses agreeing our priority to ‘Help the community to minimise its carbon footprint adapt to climate change and recycle more’, with 78% of both residents and businesses agreeing that SDC is working to improve the environment.
- 1.6. Stroud District Council is unique by having become, in December 2015, the first local authority in Europe to become Carbon Neutral in terms of its own operations.
- 1.7. (<https://www.stroud.gov.uk/media/208649/agenda.pdf>) and Appendix 3). This was achieved by the ongoing activities of the Council dating back to the late 1990’s with

updated programmes of work and targets set by different administrations with strong cross political party support.

- 1.8. To become a Carbon Neutral District by 2030 is a considerably more ambitious target as set out in the approved motion which will require the Council to work in partnership with a wide range of partners and all the citizens of the District. This creates great opportunities and the potential to realise significant economic, social and environmental benefits as well as minimising future litigation risks.
- 1.9. Both the UK Government and the Committee on Climate Change consider that this shift to a very low carbon energy future represents the best course for the UK's economic development. There is also a statement in the final text from COP 24 in Poland (Annex 1-part 4a1 December 2018) on how to assess Nationally Determined Contributions that refers to preparing implementation plans to include "4. Planning processes: Information on the planning processes that the Party undertook to prepare its nationally determined contribution and, if available, on the Party's implementation plans, including, as appropriate: (l) Domestic institutional arrangements, public participation and engagement with local communities and indigenous peoples, in a gender-responsive manner. "This statement gives a much greater role to local Councils and Regional bodies in the UK and around the world.
- 1.10. Carbon neutral which means to that while some emissions are still being generated by a process/ building/area these emissions are being offset somewhere else making the overall net emissions zero. This is different from Zero carbon means that no carbon emissions are being produced from a product/service e.g. zero-carbon electricity could be provided by a 100% renewable energy supplier.

## **2. BENEFITS**

- 2.1. Many of the steps required to become carbon zero by 2030 will significantly contribute to a lower risk of fuel poverty and its associated health impact while others can reduce the air pollution associated with emissions from vehicles and heating systems. Cutting energy through energy efficiency measures is the most effective long-term method of reducing fuel poverty. To enable walking and cycling to become the primary mode of transport for short distances is the most effective means of reducing local air pollution and promoting numerous health benefits and community development.
- 2.2. Putting Stroud District on a course to securing these benefits for its businesses and residents will require purposeful effort from many different stakeholders in the district, county and region acting across many different fronts with a shared purpose. GFirst LEP (the Local Enterprise Partnership) and Gloucestershire County Council are in the process of developing a new Energy Strategy for Gloucestershire and both will be key partners in delivering Stroud District Council's ambitious plan.
- 2.3. There are very significant economic gains from moving to a low carbon economy. More than two thirds of the value of the District's current expenditure of over £0.16 billion a year on electricity, gas, oil, coal, petrol and diesel is exported from the county. Improving the energy performance of buildings and equipment in the county and shifting to EVs for transport could reduce the district's energy bill by £10 million (releasing the money for more locally beneficial expenditure) and create an energy productivity gain for its businesses of some 20%.
- 2.4. If the energy performance improvements are undertaken by companies based in the county, the potential Gross Value Added (GVA) gains are significant. For example: improving all the District housing to an EPC of C requires an investment of £0.4 billion

and could generate £0.2 billion GVA for the District and County's building and heating engineering businesses. Similarly, the required investment of about £ 0.4 billion in new renewable energy capacity by 2030 could result in some £80 million of GVA if the focus is on using District/ County-based engineering, construction, legal and financial expertise. If the investment was sourced from local and community sources, the long-term value of the investment (typically an annual return of 6 – 7%) would also be retained within the County, increasing the investment's local economic multiplier effect.

- 2.5. By taking a lead nationally in developing the understanding, skills, techniques and technologies to deliver fossil-free heat (through an 'ultra-low carbon thermal energy cluster' which creates a focal point for interested parties) Gloucestershire's and Stroud's businesses will be in prime position to gain the GVA from heat decarbonisation both within the county and by exporting technologies and services to other parts of the UK as they address this challenge.
- 2.6. Delivering on the ambitions outlined in this strategy also offers wider environmental benefits and strong health and social benefits. These particularly arise from reducing air pollution through the switch to EVs and by tackling fuel poverty through improving the energy performance of Stroud's housing stock.
- 2.7. This document begins to set out a draft strategy with some indicative targets. However, there will need to be specific measurable targets. This should be considered as an evolving strategy but one that is focussed on those targets that are both technically viable immediately and generate significant gains.

### 3. ADAPTION TO CLIMATE CHANGE

- 3.1. Adapting to the changing climate is a dynamic policy area for government. Plans and strategies to deal with the changing climate are being developed by several government agencies and are brought together in The National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting: Making the country resilient to a changing climate (Defra July 2018). The key risks and adaptations currently considered appropriate are outlined below:

***Flooding and coastal change risks to communities, businesses and infrastructure is a high risk now and is expected to remain a high risk in the future.***

#### *3.1.1 Actions required:*

- make sure everyone is able to access the information they need to assess any risk to their lives, livelihoods, health and prosperity posed by flooding and coastal erosion;
  - bring the public, private and third sectors together to work with communities and individuals to reduce the risk of harm – particularly those in vulnerable areas;
  - make sure that decisions on land use, including development, reflect the level of current and future flood risk;
  - boost the long- term resilience of our homes, businesses and infrastructure;
  - take action to reduce the risk of harm from flooding and coastal erosion including
  - greater use of natural flood management solutions;
  - include flood risk as a key feature of adaptation reporting from infrastructure
- 3.2. Stroud District will therefore need to:
    - Regularly update the Disaster Management Plan for the district and in partnership with the County Council

- Ensure the Local Plan reflects the level of current and future flood risk
- Continue to work with the Environment Agency and Internal Drainage Board to minimize the long-term risk of flooding to the Vale
- Continue to install natural flood management measures (NFM) in river catchments within the District. Currently, 21% of the Frome catchment flows through NFM structures and this will need to be increased to as close to 100% as is practical.

***Risks to health, well-being and productivity from high temperatures are also a high risk now and are expected to remain a high risk in the future.***

***3.2.1 Actions required:***

- work with infrastructure operators included in the third cycle of adaptation reporting to outline risks posed to their productivity from climate impacts
- deliver more, better quality and well-maintained local Green Infrastructure
- adapt our health systems to protect people against the impacts of climate change, such as ensuring all clinical areas in NHS Trusts have appropriate thermal monitoring in place

3.3. Stroud District Council will therefore need to;

- Ensure the installation and maintenance of Green Infrastructure via the Local Plan and suitable conditions or Section 106 agreements in subsequent developments

***Risk of shortages in the public water supply for agriculture, energy generation and industry.***

***3.3.1 Actions required***

- work to restore natural processes within river systems to enhance water storage capacity;
- work towards setting challenging and ambitious goals to reduce water leakage

3.4. Stroud District Council will:

- Continue to implement NFM measures through the District to moderate water flows and support recharge of aquifers

***Risk to natural capital including terrestrial, coastal, marine and freshwater ecosystems, soils and biodiversity.***

***3.4.1 Actions required***

- introduce a new Environmental Land Management scheme which will deliver environmental outcomes
- develop and start to implement a Nature Recovery Network, linking habitat restoration and creation to improved access, flood protection and water quality
- incentivise good soil management practices that enhance soil's ability to deliver environmental benefits through future environmental land management schemes
- introduce a sustainable fisheries policy as we leave the Common Fisheries Policy and prepare marine plans that include policies for climate adaptation
- build ecological resilience on land, in our rivers and lakes and at sea
- Protect soils and natural carbon stores.

3.5. Stroud District Council will

3.5.1 Implement the Severn Estuary and Cotswold Grassland SAC Management Schemes

3.5.2 Ensure the Local Plan provides for linking habitat restoration and creation to improved access, flood protection and water quality

***Risk to domestic and international food production and trade.***

### 3.5.2 *Actions required:*

- Ensure a food supply chain which is resilient to the effects of a changing climate
- Review and publish the updated UK Food Security Assessment

### 3.6 Stroud District can through the Local Plan:

- Protect the most productive agricultural land to allow conversation to production of crops for local consumption
- Support development of horticultural business
- Support glass houses and poly tunnel for growing of crops for local production
- Ensure appropriate housing for agricultural and horticultural workers

### ***Risk of new and emerging pests and diseases and invasive non-native species affecting people, plants and animals.***

#### 3.6.1 *Actions required:*

- Manage existing plant and animal diseases and lower the risk of new ones;
- Tackle invasive non-native species.

### 3.7 Stroud District Council will:

- Through the Environment Health function, work to prevent importation of pest, diseases and non-native species through Sharpness Docks
- Ensure eradication of non-native plants on council owned or council managed land
- Work with appropriate to tackle threats to humans from non-native animals

3.8 The effects of the changing climate are already impacting on Stroud District and adaption measures are already being implemented. Many of these are considered in the existing Stroud District Local Plan (2015) and the Emerging Strategy (2018). As a result of flooding in 2007 Stroud District Council, in partnership with the Environment Agency and several key partners, has developed a nationally recognised Natural Flood Management programme.

3.9 The planning for adaptation that is already taking place in the District should be extended by encouraging and enabling local communities to discuss local impacts and adaptation measures. The most effective way of doing this requires further consideration. One option may be to organise a workshop for local community groups, and Parish and Town Councils, focusing on local resilience building. Thought will need to be given to how this sort of initiative links with actions to mobilise stakeholders to engage with carbon reduction measures (see para 6.2).

## **4. CHANGES REQUIRED TO BECOME A CARBON NEUTRAL**

4.1 The changes required over the next 12 years to become carbon neutral are already well understood. They are, by and large, the changes required nationally and across every other part of the UK to move to a low carbon economy, as documented in official Government national strategies and plans as well as in various reports by NGOs. These fall into several broad categories as set out below;

- a complete shift to very low or zero carbon electricity generation, mostly renewable and much of it decentralised;

- smarter and more flexible management of electricity demand, including storage, to enable higher penetration of variable renewable generation and to optimise electricity system operation;
  - huge reductions in energy demand by improving significantly the energy performance of our buildings (across all sectors and all tenures) and the equipment and processes within them;
  - decarbonisation of heat (i.e. stop relying on fossil fuel gas and oil) for buildings, hot water and industrial processes;
  - dramatic steps to cut the carbon emissions of road transport by switching to walking, cycling, efficient mass transport (not powered by fossil fuels) and a huge rise in the use of electric vehicles;
  - ensuring new build developments achieve their full low carbon potential and contribute effectively to a smarter energy system;
  - a dramatic reduction in emissions from agricultural food production and land use
  - a huge reduction in the generation of waste and a dramatic increase in low carbon means of dealing with waste;
  - A dramatic increase in the capture of carbon particularly, but not necessarily exclusively, through tree planting and land management.
- 4.2 It is clear that not all these ambitious targets can be realised by local government acting alone; it will require concerted effort from national government, national network operators, national and local business and finance working together. However, there are several roles that Stroud District Council can play working in partnership with the citizens of the District, key statutory and non-statutory partners and, most importantly, with businesses across the District. These include: leadership & delivery, coordination, engagement, policy and planning.
- 4.3 It needs to be recognised that delivery will require dramatic changes which are likely to lead to resistance from various quarters and it will be important to remain focussed and purposeful whilst avoiding being distracted by potential conflict.

## 5. ACTIONS IN STROUD DISTRICT

### ***A complete shift to very low or zero carbon electricity generation, mostly renewable and much of it decentralized;***

- 5.1. The current total use of electricity in Stroud District is 545 GWh per annum. Nationally, approximately 29% of electricity is generated from renewable sources. Within Stroud District approximately 12% of energy is generated from renewable sources, the majority (78%) from solar PV.
- 5.2. Much of the increase in renewable energy will be due to an end to coal generation and the growth in offshore wind and increased onshore wind energy in Scotland and large scale solar throughout the UK.
- 5.3. But more will need to be done within the District, both to reflect the potential here and to make a reasonable contribution to achieving the national target.
- 5.4. A district target for generating renewable energy by 2030 will need to be agreed. However, if 45% of electricity consumed in the District for renewable generation would

represent roughly a quadrupling of current within-district generation from new onshore wind, solar PV and hydro schemes.

- 5.5. The Stroud valleys were traditionally powered by over 50 watermills and studies during the 1990's identified at least 12 sites which may be suitable for the installation of new turbines. The installation of natural flood management throughout many of the catchments is likely to moderate water flows through the year which, combined with the development of new efficient low head systems, and the requirement of virtual power plants for reliable power purchase agreements (PPAs) may enable the future development of more hydro. Based on the original Hebe study (1997) these could generate at least 1GWh. However, with the exception of the small scheme on the canal at Dudbridge, there has been limited progress to date.
- 5.6. Currently 1 in 19 houses within Stroud District have PV panels, there are 2 field-scale schemes and an increasing number of businesses have installed roof-mounted PV panels. Stroud District Council has installed a PV system on Stratford Park Leisure centre, the Pulse at Dursley and on 590 council houses.
- 5.7. Recent changes in the feed-in tariff and the stopping of the domestic sale of energy to the grid have provided a negative message to the domestic market. However, developments in home battery storage, increased uptake of EV, smart home energy systems, energy storage systems, commercial power purchase agreements, and continued decline in PV panel prices, combined with effective communication, are likely to ensure continued uptake.
- 5.8. Whilst much of this can be accommodated on existing roofs, there will be a need for new field -scale schemes, probably directly linked to end users. Enabling 1 in 5 houses to install roof-top solar panels by 2030 would add at least 20 GWh of new solar PV electricity generation. Assuming a further 20GWh on commercial roofs, this would leave a further 498ha of ground mounted solar (just over 1 % of the land area of Stroud District).
- 5.9. Subsidy-free onshore wind is likely to be viable with appropriate grid capacity, a direct end user and, under current planning guidance, overwhelming public support. This requires a significant change in the political appetite for onshore wind in the district. The most favourable wind within the District, on the top of the Cotswold scarp, is currently within the AONB so would require an exception to national planning guidance. To generate 50% of the predicted electricity requirement outside the AONB and within the Vale would require a further 39 four MW (150 blade tip) turbines. Whilst technically feasible this would need further strengthening of grid capacity as well as strong public and political support.
- 5.10. However a combination of technologies along with further energy efficiencies in homes and industry would suggest a target of a further 10 large turbines and 249 ha of ground mounted if combined would with the rapid expansion of roof mounted solar would approach 50 % of renewable electricity generation within the district by 2030.
- 5.11. Current grid capacity is currently constrained in large areas of the District. Therefore, it will be important to work with Western Power Distribution to identify areas for large scale deployment of new renewable electricity generation capacity to allow appropriate grid strengthening and or deployment of large-scale energy storage
- 5.12. Stroud District Council will play a key role in promoting future uptake and development of new renewable electricity generations by:
  - taking a lead in development of PV, battery storage and smart power systems in new- build Council housing;
  - installation of PV, battery storage and smart grid technology on appropriate Council owned buildings;

- Considering investing new field-scale solar developments potentially combined with grid scale energy storage and sleeved PPA to optimise revenues. This may be in partnership with a community energy group (and therefore attract significant community investment);
- developing new guidance for the development of Neighbourhood Plans that actively supports new renewable energy developments;
- actively working with Western Power Distribution to ensure grid capacity for new renewable energy generation and deployment of energy storage;
- using the development of appropriate policies in the Local Plan review to:
  - Introduce appropriate policy guidance to encourage the installation of PV panels (combined with battery storage) on existing housing including listed buildings and in conservation areas;
  - Introduce appropriate policy guidance to encourage the installation of PV panels (combined with battery storage) on commercial buildings throughout the District including those within the AONB;
  - Allocation of suitable areas of land within the District following paragraph 151 of the NPPF for renewable energy including onshore wind and large field-scale solar developments;
  - development of appropriate policies to encourage the development of new hydro power schemes through the District;
  - development of appropriate policies to encourage new small and medium scale tidal power schemes within the District

5.13 There will be a very significant role for individual citizens in the development of new renewable energy generation through:

- installation of new roof-mounted PV on their own properties potentially with battery storage & linked to EV charger, with a PPA to an energy company, as part of a large virtual power plant or with a smart system to allow peer to peer selling and buying of power;
- active support of new largescale renewable energy developments;
- investment in community renewable energy generation and storage projects;
- Purchase of power from energy companies that invest in new renewable energy generation (not just those trading in existing renewable energy).

5.14 However, the level of citizen involvement will be dependent on a number of factors which will include national Government policy and incentives; mortgage companies and the capacity and viability of commercial installers. Community energy groups and Stroud District Council can play a role through appropriate accurate communication and support for early adopters. Stroud District Council can also play a crucial role through supportive planning policies.

5.15 The development of new solar generation will be dependent on the financial viability and capacity of business to install new PV arrays and, for roof installation, the availability of scaffolding. This will be linked to demand for new installation and, perhaps more importantly, consistent national policy. However, the development of supportive planning policies and energy performance requirements of new-build by Stroud District Council will contribute to supporting local installers.

5.16 Business and commercial organisations not directly involved in renewable energy will need to be encouraged to install new renewable generation on their own buildings.

However, these will need attractive PPA arrangements, commercial partners, supportive planning policies, grid capacity and citizen support.

- 5.17 Community energy groups have the potential to play a vital role in the development of new renewable energy generation particularly through new investment facilities to fund new schemes and return surplus income to support projects to combat fuel poverty.

***Smarter and more flexible management of electricity demand, including storage, to enable higher penetration of variable renewable generation and to optimize electricity system operation;***

- 5.18 The development of smart flexible energy management and battery storage will be dependent of several factors particularly technology development and national guidance and grid capacity which are largely outside the remit of Stroud District Council
- 5.19 However, there is potential for the use of Council land for the installation of battery storage and for installation of battery storage combined with PV in all new Council houses, which may provide new commercial opportunities for income generation for the council or investment opportunities for community energy groups.
- 5.20 The Local Plan Review will need to include policies which will require all new developments to be zero carbon and smart-enabled. Community groups and influential citizens can play an important role in being early adopters of installation of home battery storage.

***Huge reductions in energy demand by improving significantly the energy performance of our buildings (across all sectors and all tenures) and the equipment and processes within them;***

- 5.21 The Government Clean Growth Strategy sets a target of all fuel-poor homes to be upgraded to Energy Performance Certificate (EPC) Band C by 2030 and an aspiration is for as many homes as possible to be EPC Band C by 2035 where practical, cost-effective and affordable. It also sets a long-term trajectory to improve the energy performance standards of privately rented homes, with the aim of upgrading as many as possible to EPC Band C by 2030 where practical, cost-effective and affordable.
- 5.22 To meet a carbon neutral target will require retrofit activities on the vast majority of Stroud housing stock and of non-domestic buildings which are currently below a C rating. This should be subject to appropriate consideration of the character and construction fabric of buildings of recognised heritage value and also reflect the need to avoid overheating as the risk of summer heatwaves increases.
- 5.23 At current energy prices and household income levels, there are very few households in England in C rated homes which are officially fuel poor (under the 'Low Income High Costs' definition). Achieving this target would therefore also help to ensure that fuel poverty in the District was effectively addressed. Making these improvements will reduce energy bills because, even though the price per unit of energy is expected to increase, the more energy efficient homes will be using fewer units. It will also reduce the scale of heat demand sourced from oil or gas which will not be decarbonised by national policies until 2040.
- 5.24 There are a large number of older Redbrick and Cotswold stone properties within the District, both rented and privately owner. These are often the least energy house within the District. For homeowners, there are often very significant cost savings on energy by elimination of draughts, insulation of lofts and walls as well secondary glazing.

- 5.25 In the rented sector, period properties retrofitted to achieve modern standards of insulation (while preserving the character and beauty) tend to make for happy tenants who are able to pay more for rent and remain in the property longer.
- 5.26 Given the timescales and the current state of the housing stock (as from the County EPC data), this target requires a very high rate of homes being improved to a C rating each year. The rate of refurbishment is therefore probably not the issue; it is the fact that the refurbishment currently being undertaken is not focused on improvements which lower carbon emissions and improve the energy performance of the building.
- 5.27 The local authorities, with the County and Health Service, are working together to tackle fuel poverty, marshalled by Severn Wye Energy Agency (SWEA) through the Warm and Well programme. SWEA also has a track record in delivering energy advice and low carbon housing retrofit initiatives across the County and has established a network of local retrofit contractors (Link to Energy) which could provide the foundation for a more concerted programme to increase low carbon retrofit rates.
- 5.28 Minimum Energy Efficiency Standards (MEES) apply to all rented properties for domestic and commercial use in UK. The Government has legislated that from April 2018, rented properties are required to have an EPC rating of E. This is expected to rise to D in 2023 and C in 2030.
- 5.29 Effective enforcement of the Private Rented Sector Minimum Energy Efficiency Standards (PRS MEES) is needed to secure greater investment by private landlords in improving the least energy efficient housing. This will not happen under the current arrangements whereby, as the top tier local authority, GCC Trading Standards holds the formal responsibility for enforcement yet has other priorities and significant resource constraints. This responsibility needs to be transferred to District Council private sector housing teams (as requested by Stroud DC) so that they can: (a) integrate the enforcement of MEES alongside their other engagement with landlords and with Warm and Well, and; (b) apply for funds where available to support delivery.
- 5.30 The community energy sector in the County is of relatively modest scale and impact but has recently re-galvanised its efforts and is starting to organise county-wide with a view to increasing its effectiveness and impact.
- 5.31 Green Open Homes activities in Stroud have been led by community organisations seeking to normalise low carbon retrofit and inspire households to upgrade their own homes; they have continued to be active after nationally available grant support ended. However, the limited supply chain for low carbon housing retrofit (already busy on normal refurbishment activity) means that enthused householders can find it difficult to obtain quotes and initiate work. The local 'low carbon contractor finder' scheme, Link to Energy, is relatively low profile and there are significant opportunities to develop this.

***Decarbonisation of heat (i.e. stop relying on fossil fuel gas and oil) for buildings, hot water and industrial processes;***

- 5.32 The Committee on Climate Change has indicated that by about 2040 the UK will need to stop relying on carbon-based fuels (coal, oil and gas) to generate heat to keep buildings warm or produce hot water or steam for industrial processes) in order to be on target to meet national carbon emission reduction targets for 2050. While the detail of how this will be done remains unclear, there are several different approaches which will need to be considered:
- a) Reducing demand for heat in existing and new buildings;

- b) Optimising the roll-out of heat networks in urban centres and delivery of zero carbon heat supplies through them using waste heat and/or renewable heat;
  - c) Identifying and realising opportunities to recover waste industrial heat to supply heating locally (thus displacing other fuels);
  - d) overcoming barriers to increase take up of renewable heat technologies and/or fuels including air-, water- and ground- source heat pumps (because electricity will be very low carbon by then), biomass and bio-wastes in buildings and industrial processes;
  - e) Generating and using green gas locally, either directly or via the gas network and
  - f) Injecting hydrogen into the gas network to displace fossil fuel gas (whilst ensuring the hydrogen production is zero carbon rather than derived itself from fossil fuels through reforming natural gas).
- 5.33 The incinerator at Javelin Park and other industrial processes in the District (e.g. Muller at Stonehouse) will be producing significant amounts of heat which is currently wasted. There are opportunities for heat networks in new developments linked to industrial processes throughout the District.
- 5.34 Within Stroud District, in addition to the reduction in overall heat demand, there are significant opportunities for the development of Anaerobic Digestion to inject bio methane into the gas grid network from existing water treatment works, waste food, farm waste and use of purpose grown crops such as grass and herbal lays grown on marginal grassland or as temporary ley of arable land infected with blackgrass.

***Dramatic steps to cut the carbon emissions of road transport by switching to walking, cycling, efficient mass transport (not powered by fossil fuels) and a huge rise in the use of electric vehicles;***

- 5.35 Transport and transport planning do not fall within the strict remit of the District Council. However, the District Council is providing financial support for the development of strategic cycle routes within the District and has a role through the planning process in the strategic location of new developments and the installation of appropriate infrastructure that will enable walking, cycling and mass transport to be the preferred option for travel via appropriate policies within the revised Local Plan. The rise in EV vehicles is currently very rapid, driven largely by the development of technology and market forces, with their registration doubling every year. It is expected that by or before 2028, every second new car will be an EV vehicle. It appears that with increasing range of batteries, the greatest demand for EV charging points will be in domestic homes. The demand for home charging points will increase rapidly and, whilst grid capacity provision will be a role for the Western Power Distribution (WPD), there is likely to be a role for suitable planning policies to facilitate installation of EV charging points on listed buildings and in conservation areas and all new- build houses as well as potentially on lamps. The provision of EV charging points for staff and Council vehicles will need to be considered along with the need for EV charging points in Council car parks. By 2030 the provision of suitable facilities and planning policies for driverless cars will need to be considered.

***Ensuring new build developments achieve their full low carbon potential and contribute effectively to a smarter energy system;***

- 5.36 Unless new build developments achieve zero net carbon emissions, the planned growth of 12,500 homes will increase total carbon emissions if they are built to current building

regulations. Following this approach rather than imposing more stringent energy performance targets would result in larger carbon emission reductions being required from other areas of action – which may not be possible given the challenging contributions these other areas are already expected to make.

- 5.37 Therefore, Stroud District Council has crucial role to play in including policies within the revision of the Local Plan that set sufficiently high energy performance criteria for all new-build housing from the time of adoption of the revised Local Plan in 2021. The District Council can also set an example by ensuring that all new housing built on council-owned land and council housing is built to a standard that ensures zero net carbon emissions. This may be through modular construction and would probably include PV, energy storage and enable smart home technology.

***A dramatic reduction in emissions from agricultural food production and land use;***

- 5.38 Agricultural policy is largely outside the remit of the District Council although, through planning policy and the implementation of green infrastructure requirements, there may be some opportunities to influence land management. A key role will however be in the promotion of low carbon food through Council facilities and communication. This will need to involve the active promotion of vegan and vegetarian diets and, where meat is included in the diet, ensuring it is from extensive farming systems. Stroud District already boasts one of the best local food farmers' markets in the UK, vegetarian restaurants, a vegan school food Production Company and the world's only vegan football club. Therefore, the implementation of this will need to build on this unique and strong foundation.

***A huge reduction the generation of waste and a dramatic increase in low carbon means of dealing with waste;***

- 5.39 Since the introduction of the new collection scheme, Stroud District has already seen the greatest increase in recycling rates by any English Authority and now has the least amount of residual waste to landfill. Recycling and sending food waste to an anaerobic digester (AD) at Bishops Cleeve to be turned into bio methane and injected into the gas grid network to replace fossil fuel gas are currently the most effective means of reducing carbon emissions from waste. However, there is still a significant amount of waste generated in the District and a significant amount not being recycled or food waste sent to the AD plant.

***A dramatic increase in the capture carbon, particularly but not necessarily exclusively through tree planting and land management;***

- 5.40 The potential role and funding of commercial industrial-scale carbon capture is set out in the Government Clean Growth Strategy (Beis 2017). These are likely to be large scale plants close to energy intensive industry. However, it may be appropriate for the District Council to consider developing appropriate supportive policies within the revision of the Local Plan, should small scale commercially viable technology be developed both for new build and retrofitting (e.g. Javelin Park incinerator).
- 5.41 The Government Committee on Climate Change has recently (November 2018) published a report on Biomass in a Low-Carbon Economy which recommends increasing the woodland cover in England from 13% to 16% and potentially to 19% by 2050 to increase storage of carbon and the sustainable production of timber for low carbon

construction methods (particularly use of cross laminated timbers). Stroud District covers some 460 sq. km. Current woodland cover is relatively low (circa 10%). There is significant potential for greater sequestration through better woodland management and the production of biochar.

- 5.42 The planting of a further 10% of the District with broad leaf trees (4,600 ha) would be the equivalent of an additional store of 24Gt tonnes of CO<sub>2</sub> per annum. However much of the commercial unproductive land within the District is internationally important as coastal grazing marsh or chalk grassland and thus will require careful strategic planning.

## **6. GOVERNANCE STRUCTURES AND PARTNERSHIP WORKING**

- 6.1. The development and implementation of these changes will require a focussed action by a range of organisations working together in a genuine and effective partnership that can respond quickly to opportunities. It will require a can-do attitude, highly effective communication with minimum bureaucracy, excellent networking mechanisms between delivery partners and businesses to carry out this work. It will need to involve or link to developers, installers, funders, services providers, and community energy groups, Severn Wye Agency, GFirst LEP, and Gloucestershire County Council. However, it will be very important not to duplicate the Gloucestershire Sustainable Energy Partnership and a close working relationship with the emerging Gloucestershire Sustainable Energy Delivery Group will be required.
- 6.2. In order to work in effective partnership, and develop a strong sense of shared purpose, it will probably be necessary to establish some form of district-focused, purpose-driven governance body, and to organise initial workshops to mobilise and involve stakeholders. Recent papers from Transition Stroud make suggestions which should be reviewed alongside the points above to identify an appropriate approach in Stroud District. (Ref 'Thoughts on Expenditure to Support Scoping and Delivery of the Stroud District Carbon Neutral 2030 Commitment' 5 December 2018, and 'Mobilising Local Stakeholders for Carbon Neutral Stroud', 4 January 2019.)
- 6.3. To ensure the District Council is effectively focussed on the carbon neutral by 2030 and adaption actions it will be important that this is clearly articulated in future corporate delivery plans and budgets. Clear officer and committee responsibilities need to be allocated. It may be appropriate to include a new box in the standard committee paper format to check each proposal's compatibility with the carbon neutral and adaptation commitments of the council.
- 6.4. There are already a small number local area-based climate change action group which should be encouraged and potentially expanded. Climate change action groups based in small areas or on just one or two streets may have many advantages. Particularly were there are properties of similar design and construction which would provide opportunities cost effective retrofit programmes on a large number of houses in one location.

## **7. TARGET SETTING AND MONITORING**

- 7.1. Carbon emissions per capita in Stroud have reduced by 26% between 2005 and 2016 (Table 1), broadly in line with national reductions, and are now 38% less than in 1990. These reductions have been largely delivered by decommissioning of coal-fired power stations, closure of heavy industry, significant improvements in the efficiency of road vehicles, the significant UK growth of renewables and by gains from energy efficiency improvements in buildings and equipment (boilers, appliances and lighting).

- 7.2. In 2016 the total emissions from Stroud District was 778 million tonnes per annum (6.6 tonnes per person carbon equivalent per annum).
- 7.3. However the total emissions over which local authorities may be expected to exert some influence were 555.9 MtCO<sub>2</sub>e per annum (4.8 tonne per person per annum). The Government's legal commitments under the Climate Change Act 2008 are likely to reduce UK emissions by a further 25% (1.2 tCO<sub>2</sub>e per person per year or 138.9 MtCO<sub>2</sub>e) by 2030 leaving something in the region of the equivalent of 3.6 tCO<sub>2</sub>e per person per year (417 MtCO<sub>2</sub>e per annum). To reach the agreed target of a carbon neutral District by 2030 will require setting targets for reduction, capture and offsetting significantly over and above the nationally agreed targets.

## 8. IMPLEMENTATION PLAN

- 8.1. Many of the activities required for Stroud District to become Carbon Neutral are not within the direct control of the Council. The Implementation Plan will need to be rapidly developed in partnership with the citizens and a wide range of partners. A crucial role of the Council will be to provide leadership to enable the dramatic changes required.

## 9. BASELINE DATA

Year	Total		Local authority potential influence	
	2005	2016	2005	2016
Industry and Commercial Total Mt CO <sub>2</sub> e	282.8	186.9	281.9	186.9
Agriculture Total Mt CO <sub>2</sub> e	17.8	15.7	14.1	13.6
Domestic Total Mt CO <sub>2</sub> e	290.3	194.8	290.3	194.8
Transport Total Mt CO <sub>2</sub> e	433.4	419.1	177.3	171.7
<b>Grand Total Mt CO<sub>2</sub>e</b>	<b>993.3</b>	<b>778.5</b>	<b>763.5</b>	<b>566.9</b>
Population ('000s, mid-year estimate)	110.1	117.5	110.1	117.5
<b>Per Capita Emissions (t CO<sub>2</sub>e)</b>	<b>9.0</b>	<b>6.6</b>	<b>6.9</b>	<b>4.8</b>

**Table 1: 2005 and 2016 Carbon Emissions for Stroud District**

*Beis 2018* (<https://www.gov.uk/government/collections/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics>)

**Local Authority potential Influence:** These figures are derived from BEIS published data on local and regional carbon emissions. These column uses subset of data which excludes large industrial plants (i.e. those included by the EU Emissions Trading Scheme) and motorway transport. This is designed to reflect those emissions over which local authorities and regions may be expected to exert some direct influence. These figures also do not include the emissions from products consumed in the District but manufactured elsewhere. Nor do they cover emissions from flights by district residents and businesses.

	kWh
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GWh								
Domestic	Non-Domestic	All	Domestic		Non-domestic		All	
Total	Total	Total	Mean	Median	Mean	Median	Mean	Median
225	320	545	4,239	3,267	67,183	8,788	9,424	3,366

**Table 2 Annual Electricity Consumption per meter (for each domestic property there is normally one meter in each house)**

(Beis 2017) <https://www.gov.uk/government/statistical-data-sets/regional-and-local-authority-electricity-consumption-statistics>

Sales (GWh)			Averages (kWh)					
			Domestic		Non-domestic		All	
Domestic consumption	Non-domestic consumption	Total consumption	Mean consumption	Median consumption	Mean consumption	Median consumption	Mean consumption	Median consumption
582	247	829	13,476	11,712	480,119	122,469	18,978	11,807

**Table 3 Gas Consumption 2017 per meter (for domestic properties there is normally one meter per house)**

(Beis) <https://www.gov.uk/government/collections/sub-national-gas-consumption-data>