

Gloucester City Council

Meeting:	Cabinet Council	Date:	9 December 2020 28 January 2021
Subject:	Climate Change Strategy		
Report Of:	Leader of the Council and Cabinet Member for Environment		
Wards Affected:	All		
Key Decision:	No	Budget/Policy Framework:	Yes
Contact Officer:	Meyrick Brentnall, Climate Change and Environment Manager		
	Email: Meyrick.brentnall@gloucester.gov.uk	Tel: 396829	
Appendices:	1. CLS Report		

FOR GENERAL RELEASE

1.0 Purpose of Report

- 1.1 To present the findings of a report into how the City Council can reduce our carbon emissions to zero by 2030 in line with our climate emergency resolution.

2.0 Recommendations

- 2.1 Cabinet is asked to **RESOLVE** that:

- (1) the draft action plan be subject to a targeted consultation with the Environment and Ecology Forum and the Climate Change cross-party Member Group
- (2) authority be delegated to the City Council Climate Change Manager, in consultation with the Cabinet Member for Environment, to make any changes to the actions following the consultation referred to above prior to submitting a report to Full Council in early 2021.
- (3) the steps needed to move the whole City towards carbon neutrality by 2050 are noted as per the appendix report, and that officers continue to develop this city-wide action plan.

- 2.2 Cabinet is asked to **RECOMMEND** to Council that, subject to 2.1 (1) and (2) above, the actions contained in the CLS report (Appendix 1) are adopted as a plan for achieving the goal of net zero carbon emissions by the city council by 2030.

- 2.3 Council is asked to **RESOLVE**

- (1) That following the implementation of 2.1 (1) and (2) above, the actions contained in the CLS report (Appendix 1) are adopted as a plan for achieving the goal of net zero carbon emissions by the city council by 2030.

- (2) The steps needed to move the whole City towards carbon neutrality by 2050 are noted as per the appendix report, and that officers continue to develop this city-wide action plan.

3.0 Background and Key Issues

- 3.1 In July 2019 the city council adopted a climate emergency resolution, this required the city council to become carbon neutral by 2030 and the City as whole by 2050. This report will deal predominantly with the former. In March of this year a road map of how these targets could be met was agreed at Cabinet. This included a recommendation to employ an expert to do a thorough baseline assessment of our emissions and give guidance as to how we should hit our 2030 target.
- 3.2 In the summer of this year, following a competitive process, CLS were commissioned to take this work forward. The brief was to undertake the following:
 1. A scoping exercise identifying what Council carbon emissions are to be included, taking account of current best practice
 2. Taking into account point 1 above, provide a carbon audit of buildings and operations
 3. A high-level assessment of what modifications to buildings/machinery, behavioral operations and renewable capacity can be instigated to reduce emissions
 4. A number of broadly costed scenarios detailing how over the next 10 years the city council can become a net zero emissions council.
 5. 5 Looking more broadly at the emissions of the whole city, to develop a methodology for calculating the baseline emissions of the city of Gloucester taking on current advice and best practice.
- 3.3 Appendix 1 contains the findings of the consultant's report. The CLS report is very long and at times detailed, however, the main thrust of the report can be gleaned from reading pages 7 to 26. This summarises what the Council's carbon emissions currently are, and what is needed to bring them down to net zero by 2030.
- 3.4 This covering report will run through the above five areas of commissioned work, before moving on to a wider overview of the assessor's report and how its findings can be implemented.

The Scoping exercise

- 3.5 What to include in our emissions reporting is not as straightforward as it may seem. Fortunately, the UN has published some guidance on this and has divided how we calculate CO2 emissions into 3 distinct categories: scope 1, 2 and 3.
- 3.6 Put simply, scope 1 is the direct energy burnt by the organisation. This would include fleet fuel and gas for heating and, in our case, the gas burnt to generate electricity at GL1 in the combined heat and power plant. Scope 2 is scope 1 plus electricity use and any energy usage the organisation is directly accountable for, so this would include all lighting, heating, computer use and fleet activity. Scope 3 is everything from the embodied energy in the buildings we own, to the emissions associated with the food sold in our retail outlets.

- 3.7 Reporting to scope 3 is an onerous and costly exercise and goes beyond what most would consider a reasonable carbon audit. Certainly, most authorities and organisations undertaking similar exercises have included scope 1 and 2 only, and this is what the consultant has recommended Gloucester City Council adopts. As we begin to understand CO2 reporting more, we may move to scope 3 at a later date.
- 3.8 Even when the scope has been decided, there will still be issues as to exactly what buildings and processes to include. For example, do we include the Amey operations, those of Aspire or indeed the airport? There is no firm guidance on this, however, the consultant has drawn the line at buildings and operations that we own and either directly or indirectly pay the bills. This will include Amey and Aspire but exclude the airport and our city centre commercial estate. This is also broadly in line with what other authorities in Gloucestershire are currently undertaking.

The carbon audit of buildings

- 3.9 For a number of years, we have had remote metering installed in most of our properties and this allows easy access to the required information, including in some instances half hourly meter readings. These provide an insight into how a building works and whether or not energy is being wasted. CLS supplemented this information with site visits to get a feel for how the buildings operate at a human level (e.g. are windows left open with air conditioning on), as well as allowing subtle sub-metering with 'clamps' around cables to further refine the energy monitoring. COVID-19 has meant that access was not always straightforward and of course buildings were mostly empty. This will impact on the final result but is taken into account in the report.

A high-level assessment of what modifications to buildings/machinery, behavioral operations and renewable capacity can be instigated to reduce emissions

- 3.10 This forms the lion's share of the report at appendix 1. CLS visited almost all of our buildings that had a loading of more than a few Kwh and produced a series of recommendations to increase energy efficiency and, where appropriate, put forward renewable energy suggestions. An overview is included later on in this covering report. As mentioned above, COVID-19 did hamper the investigations, making site visits difficult and not allowing certain aspects of energy use to be monitored in detail.

A number of broadly costed scenarios detailing how over the next 10 years the city council can become a net zero council.

- 3.11 Three scenarios are put forward that detail how we can reduce our emissions. The first scenario covers energy efficiency, the second energy efficiency, renewables and an electric fleet, the third looks at innovative ways in which to reduce our gas usage. This is explored by the consultant and summarised later in this report.

A Methodology for calculating the baseline emissions of the city of Gloucester taking on board current advice and good practice.

- 3.12 This concluding section of the assessor's report sets the scene for a city-wide strategy to be produced in the future, as to how we can reach the goal of a carbon neutral city by the year 2050.

CLS Report Overall Summary

- 3.13 For the city council operation the Scope 2 headline figure of energy consumption is 15.82 Giga Watt hours (GWh) of energy per year **or 3438 tonnes of CO₂ per year**. When renewables are added it is reduced slightly to **3425 tonnes**. This includes Amey, Aspire as well as fleet transport use from Amey and the Council. If all the interventions recommended are implemented, this consumption could be reduced by 32.4% with regard to electricity, 22.9% for gas and 18.8% for vehicles. This is considered conservative and the consultant expects greater savings to be realised. All the interventions have a short (typically 5–6 years) pay back and therefore could be viably funded through borrowing.
- 3.14 Even with the above actions implemented, a significant amount of carbon will have to be accounted for; as such the next step is to generate low carbon energy preferably on site utilising predominantly solar on existing buildings. When this is factored along with the proposed energy efficiencies, we can deliver 131% of our electricity demand, thus enabling us to offset some of our gas/fossil fuel consumption. When looking at this in more detail it is probably best to talk of carbon rather than kWhs. To help illustrate this, the report has three graphs on pages 20 and 21 depicting predicted carbon emissions over the period 2020 - 2030. The first graph shows the reduction in carbon anticipated if the recommendations on energy efficiencies are implemented: this shows a reduction from 3500 tonnes per year to 2000 tonnes by 2030. The second graph shows the same as above but takes into account changing the fleet (predominantly the waste and recycling fleet) to low carbon (i.e. electric, either by battery or hydrogen fuel cell). This reduces the overall carbon budget by another 1000 tonnes leaving 1000 tonnes a year left. Graph 3 depicts the regression to zero carbon and this final 1000 tonnes reduction will be the most difficult to achieve, as it is largely as a result of burning gas at GL1 and the crematorium.
- 3.15 While technology is constantly changing, the most likely response at GL1 will be to move to heat pumps powered by electricity, preferably generated by ourselves on one of our sites. To get a good spread across the year, this should be a combination of wind, solar and even low head hydro and could involve for example a solar farm on council land or a third party site where we invest in the infrastructure and 'sleeve' the energy for our use. Reducing gas usage at the Crematorium may be the hardest of all as any significant change in operations will need sensitive treatment. The report recommends a change in technology from cremation to resomation. This process, based on alkaline hydrolysis, takes about 4 hours and leaves a liquid and powdered bones, the latter of which can be returned to the next of kin as ashes. The temperatures required for this are lower and can be achieved with heat pump technology. Clearly this a very emotive subject and will only be followed with public support. The only alternative is to 'offset' in some way, either

through generation elsewhere, third party energy efficiency or tree planting. All have their problems.

- 3.15 Having broadly mapped out the trajectory of how to get to zero carbon, the report goes into a degree of detail on how to achieve the savings and provides useful figures as to what the cost will be, the pay back and the carbon saved. This is all set out in the tables on pages 24 and 25. The first table lists a suite of measures ME1 to ME19 that reduces our energy consumption through efficiencies, the second MF1 – MF10 looks at fuel use. The third R1 – R14 displays the potential contribution from renewables, predominantly solar. This and the narrative in pages 34 – 139 are the core of the report and detail the interventions needed to reach our carbon reduction goals.
- 3.16 It is proposed therefore that the CLS report broadly forms the work programme for the next few years, to be implemented by the climate change manager and asset management colleagues in partnership with the various end users such as the Guildhall, Aspire and Amey.
- 3.17 The final part of report looks at the emissions from the City of Gloucester as a whole. Perhaps the most useful table here is the one on page 144. This describes the tonnage of CO2 emitted by: electricity (157,667), gas (184,328), and transport fuel (80,187).
- 3.18 Reaching the 2050 target for electricity should be straightforward and the majority of vehicles by then will probably be electric in some shape or form too. The real problem will be gas, in particular the 109,640 tonnes emitted from domestic boilers. This will require a massive investment in insulation and the move from gas boilers to electric (probably heat pumps). This of course raises issues (as does the electrification of transport) for the generation of low carbon electricity to support these new technologies. The report puts forward a number of ideas but is at pains to point out that although the city council only uses 1% of Gloucester's carbon, it's influence could potentially be much greater. One of the most important things the city council can do is lead by example, thus encouraging others to follow, hence the importance of the Council getting on with reducing its own emissions over the next few years.

4.0 Social Value Considerations

- 4.1 Climate change will impact on all aspects of our lives and if unchecked will have a significant negative impact on the social fabric of our communities. Anything that mitigates against climate change will have positive social value.

5.0 Environmental Implications

- 5.1 The report supports the reduction in CO2 and other greenhouses gasses and therefore has positive environmental implications

6.0 Alternative Options Considered

- 6.1 To not develop a comparable action plan would mean the city council would miss its climate change targets, find it difficult to persuade local residents and businesses to cut their emissions and waste money on energy.
- 6.2 To go further and faster, while this may bring emissions down quicker, would come at more expense and may generate resistance from a public not used to the compromises and costs involved.

7.0 Reasons for Recommendations

- 7.1 The city council has adopted ambitious climate change targets, in particular a desire to be a carbon neutral authority by 2030. If this target is to be met along with all the co-benefits around energy security, cost, local emissions etc then the strategy as laid out in this report and in the appendix will need to be broadly followed.

8.0 Future Work and Conclusions

- 8.1 The report tells us how we can achieve the 2030 target of carbon neutrality with a suite of detailed actions to be taken forward over the coming months and years. Some of the proposals are straight forward, others are more complex, and some will be subject to outside funding sources and political will. As time moves on the recommendations will need to be re-appraised and certainly some of the more long-term projects may be subject to significant change. To ensure the projects are scrutinised and not falling behind, it is proposed to monitor progress on the action plan at the climate change cross-party Member group. It is also envisaged that further reports will be put to cabinet when particularly significant or controversial projects are rolled out.
- 8.2 What the report does not do is solve how to reduce carbon emissions in the city as a whole. The consultant's report did give a hint to how big the issue is, in that approximately 434,301 tonnes of carbon is emitted by Gloucester each year. For now, it is proposed to try and reduce emissions on an ad hoc basis by being opportunistic with funding streams and finding savings where we can. As the city council brings its emissions down, then we will engage more with local residents and business to help them bring their emissions down.

9.0 Financial Implications

- 9.1 The financial implications for the Council will be assessed on a project by project basis. The merits of each project will be considered to determine whether they provide good value for money in relation to the carbon benefits achieved from undertaking them. Those with business cases that provide the best value for money i.e. achieve the greatest carbon benefits with the shortest payback in relation to the investment made will be considered more favourably.
- 9.2 The projects undertaken will be subject to both financial and value for money scrutiny to ensure that the business cases presented are met. Progress and financial monitoring reports in relation to the projects will be presented to the Climate Change Member Group.
- 9.3 This is a developing area in relation to formal accounting and auditing standards with significant focus from the international accounting bodies. It is expected that

there will be formalisation of the annual reporting required in this area in the next decade including audited value for money statements. Hence it will be important to ensure appropriate processes are implemented at the outset to capture this data.

- 9.4 It should also be noted that the Council has set aside £100,000 to assist delivery of those projects that need to go ahead for carbon benefit but do not necessarily offer the best financial value. The use of these funds will be assessed based on the business cases provided to the Climate Change Member Group.
(Financial Services have been consulted in the preparation of this report.)

10.0 Legal Implications

- 10.1 The overriding legislative context for the council's climate change strategy for 2030 is the Climate Change Act 2008. This Act places a legal duty on central government to set legally binding targets to reduce UK greenhouse gas emissions to net-zero by 2050. The UK legal framework on climate change is also shaped by both caselaw and international agreements.

(One Legal have been consulted in the preparation of this report.)

11.0 Risk & Opportunity Management Implications

11.1

Risk	Impact	Level of impact	Likelihood of impact	Mitigating measures
Projected pay back times incorrect. Issues with finance generally	Carbon financial benefits not realised	2	2	Work to bring in external finance
Not enough officer resource to deliver outcomes	Carbon financial benefits not realised	2	2	Prioritise work to ensure at least some outcomes are realised
Waste recycling contractors and Leisure Service operators do not deliver intended outcomes	Carbon financial benefits not realised	2	2	Work closely with partners and define and manage contract procurements correctly.
Grants and other support are not available as expected	Carbon financial benefits not realised	2	3	Be clear as to expectations and work closely with funders
Opportunities	Impact	Level of Impact	Likelihood of impact	Maximising measures
Financial	More efficient	2	3	Ensure that

benefits of Carbon management projects	services			financial benefits are integral to projects
Better working with partners	Greater aggregate impact	2	2	Closer working

12.0 People Impact Assessment (PIA) and Safeguarding:

12.1 The PIA Screening Stage was completed and did not identify any potential or actual negative impact; therefore, a full PIA was not required.

13.0 Community Safety Implications

13.1 It is not considered that there are any specific community safety implications of this report.

14.0 Staffing & Trade Union Implications

14.1 None.

Background Documents: None