

Addressing the climate emergency – an update on progress

1. Introduction

Sheffield has had a strong record of accomplishment on sustainability. It was one of the first UK cities to develop an energy recovery facility and to create an energy network that provides heat and hot water to businesses and residents in the city. More recently, private-sector led renewable power plants have been developed in the Lower Don Valley (E.ON) and at Holbrook in the east of the city (UYE).

Sheffield was the first UK city to initiate a city-wide switch to low energy LED street lighting and following installation has also trialled dimming to further reduce carbon emissions. We are also one of the first cities in the UK to trial electric refuse collection vehicles and we are now rolling out an EV cargo bike scheme as well as EV van and taxi trial schemes.

The city already has a number of innovative companies and organisations whose activities, products and services contribute towards greater environmental sustainability as well as providing good jobs for Sheffield people, and are already demonstrating how we can move towards a net-zero future.

Sheffield Climate Alliance works to promote a zero-carbon approach across all sectors of our city as well as campaigning on related issues such as fracking and divestment in fossil fuels. Sheffield Renewables and Community Energy England are working to bring about change in how we view, use and generate our energy and both have a track record in delivering renewable energy projects that provide wider community benefits.

We have a large number of local businesses who are keen to rise to the challenge of net-zero, as demonstrated at Sheffield Sustainable Business Network's inaugural event earlier in the year.

Our universities also provide a huge advantage and opportunity for the city and its residents. The Advanced Manufacturing Research Centre is a collaborative partnership between the University of Sheffield, Boeing and Rolls Royce which applies world-leading research and development, environmental sustainable solutions and is a centre of Sheffield's advanced manufacturing expertise with an international reputation for excellence that creates and shapes industries.

Transitioning to a zero-carbon economy will require a massive change in many, if not all aspects of life. It will require the buy-in of everyone in the city – our residents, businesses, institution, organisation and communities across the city.

The challenge is undeniably very significant but as the change that is starting across the country and the world shows, change is inevitable. We should not see this change as a negative.

Whilst there is a lot to do, the wider benefits that this transition will bring are incredibly significant. This ranges from new jobs and services to support the growing demand for clean and green products, to improved local air quality from fewer vehicles, better health outcomes and quality of life from warmer homes, and increased 'active travel' improving our neighbourhoods. All this contributes towards greater resilience as a city.

This is particularly pertinent given the current Covid pandemic, which has seen air quality identified as a potential factor in outcomes of Covid patients, as well as clear popular demand that as a country we 'build back better' and ensure that our recovery from this pandemic is a fair, just and green one.

This approach is being mirrored by cities and towns across the UK, as well as across the world. The [C40 group](#), which represents the world megacities, has recently launched its campaign to achieve a green and just recovery.

C40 mayors have collectively identified key actions that are critical to achieving a vision for a green and just recovery – and a future that works for everyone. This includes leading in taking action for jobs and an inclusive economy and helping to create ‘15 minute cities’ where all residents of the city are able to meet most of their needs within a short walk or bicycle ride from their homes. It also includes building with nature to prioritise ‘nature based solutions’ such as parks, green roofs, green walls, blue infrastructure and permeable pavements, to help reduce the risks of extreme heat, drought, and flooding, and improve liveability and physical and mental health.

Whilst Sheffield may not be a megacity, we are learning from what others are doing on this agenda and looking to identify where we can implement similar approaches. Our Zero Carbon commission is actively undertaking this, identifying best practice and looking to see how Sheffield can take this forward.

We can also point to new and existing projects here in Sheffield: the award winning [Grey to Green](#) programme which has created the UK’s largest retrofit sustainable urban drainage scheme, whilst the [Connecting Sheffield](#) programme aims to transform the transport infrastructure that people use to get around the city as part of their everyday lives by creating high-quality, safe and convenient routes into and around the city for cycling, walking and public transport. We have included a short summary of some of these programmes in appendix 7.

1.1 Our approach to net-zero carbon

Over the past nine months the Council, working with the support of the Green City Partnership Board and along with other stakeholders in the city, has been developing a comprehensive evidence base to underpin our city’s approach to achieving net-zero carbon.

Independent consultants were co-commissioned by the Council and the Green City Partnership Board to complete this study. This report to Oversight and Management Scrutiny Panel outlines some of the key findings emerging from this commission and outlines the next steps we intend to take with our partners to drive forward decarbonisation across the city.

There will be a focus on the UK next year when the Glasgow hosts the 26th UN Climate Change Conference of the Parties (COP26). The COP26 summit will bring parties together to accelerate action towards the goals of the Paris Agreement and the UN Framework Convention on Climate Change. The Council is already exploring how it can support an international campaign to build momentum around the shift to a decarbonized economy ahead of COP26, where governments must strengthen their contributions to the Paris Agreement.

It is hoped that our work with partners across the city can help to contribute towards a global movement that ‘will send governments a resounding signal that business, cities, regions and investors are united in meeting the Paris goals and creating a more inclusive and resilient economy.’

The UK is committed to working with all countries and joining forces with civil society, companies and people on the frontline of climate change to inspire climate action ahead of COP26.

2. Background

Over the past five years the Council has adopted two strategies; 'Growing Sustainably' (2017), which was a response to the 2015-16 Sheffield Green Commission, and the Sheffield Green City Strategy (2018) which remains the adopted City Sustainability Strategy.

The Green City Strategy established an original goal of the city achieving net zero carbon emissions by 2050, which the city adopted in 2018 and which at the time reflected similar climate goals set by other UK Core Cities, Government as well as other international cities recognised as leaders in climate change action.

In October 2018, the Intergovernmental Panel on Climate Change issued its update report SR 1.5, which set out the global impact of failure to restrict global warming to less than 1.5 degrees Celsius (above pre-industrial levels) and was a clear message to the global community that urgent and significant decarbonisation was required, with immediate effect.

2.1 Declaration of a climate emergency

In early 2019, Sheffield City Council declared a climate emergency and in doing so became one of the first local authorities in the county to take such action. The motion was agreed unanimously at Full Council in February 2019 and responded to several petitions to the Council to declare a climate emergency.

The February Full Council motion noted that cities are one of four critical global systems that can accelerate and upscale climate action, but recognised that this will require major transitions in how both mitigation and adaptation are undertaken and tasked the Green City Partnership Board to explore how the city should respond to the IPPC report and review our existing commitment to become a zero carbon city by 2050 (Green City Strategy, adopted 2018).

A commitment was given to report back to Full Council within 6 months with a more ambitious date for the city to become zero carbon, accompanied by an action plan 'setting out the required work to deliver a new goal through all relevant strategies and plans, and would entirely and actively welcome the involvement of the cross-party scrutiny system in shaping and overseeing this vital work.'

The Green City Partnership Board subsequently engaged the Tyndall Centre for Climate Change Research to complete a carbon budget report for Sheffield. Further details are outlined below in section 2.2.

In June 2019, the Council announced that ***a new commitment will be made to bring forward the city's carbon neutral target from 2050 to a minimum of 2030, and that a Citizens' Assembly will be commissioned to consider the necessary action in the city to implement this change.*** At the same time, the Cabinet Member's title was amended to include Climate Change, as an indication that tackling the climate emergency was, and remains, a top priority for the city going forward.

2.2 Tyndall Centre for Climate Change Research - Carbon Budget for Sheffield

In July 2019 Full Council received a report (Appendix 5) and a presentation from the Tyndall Centre for Climate Change Research. The presentation set out how a carbon budget had been calculated for the City of Sheffield and provided a recommended budget or limit to carbon dioxide or equivalents, from the energy system from 2020 onwards.

The targets were derived from the 2015 International Paris Climate Agreement and were intended to enable Sheffield to play its part in delivering actions required to hold the increase in global average temperature to well below 2 degrees Celsius and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius.

The key findings and recommendations from the Tyndall Centre report are:

- Sheffield has a total recommended carbon budget 16MtCO₂e for period 2020 – 2100
- **Sheffield uses this entire budget in less than 6 years at 2017 levels**
- A rapid programme of decarbonisation is required, commencing 2020 and averaging **14% year-on-year reduction**
- The city should aim to become 'Zero Carbon' by **2038 at the latest**
- An even greater rate of reduction will be required for **zero carbon 2030**

2.3 Citizens' Assembly

Following the announcement in the summer of 2019, the Council explored how it could most effectively deliver a Citizens' Assembly. The matter was discussed at Full Council during the autumn and a report outlining next steps was presented to the Green City Partnership Board in February 2020, outlining options and next steps.

Prior to this, at November 2019 Full Council meeting, Members agreed that the following suggestions should be considered:

- Look into establishing a climate emergency committee to develop strategies, and implement actions to bring about the necessary changes to meet our zero-carbon emissions target by at least 2030.

Note: This OSMC report recommends that this should be established early in the New Year (recommendation 3)

- Considering the introduction of climate change impact assessments for appropriate Council decisions. -

Note: We have been developing such a tool as part of our Zero Carbon Commission, and this OSMC report recommends that the emerging tool is shared with Scrutiny Panel chairs and that it is applied across all their activities (recommendation 2).

- Investigating the feasibility and desirability of establishing a properly resourced team of sustainability officers to work on real progress towards making Sheffield carbon-neutral and help develop the world leading technologies needed to supply good quality jobs.

Note: Work has been on-going during 2020 to progress this action. Details are included in section 2.6 on resources.

The emerging Covid-19 pandemic and the subsequent first lockdown in March 2020 meant that a decision was taken to cancel the Citizens' Assembly, as it was not felt that it is possible to hold a meaningful and equitable citizens' assembly during Covid-19, due to restrictions on mass gatherings or meeting face to face. Cllr Mark Jones wrote to all the members of the Green City Partnership Board to explain this decision, along with the decision not to commence plans to reconvene in the autumn due to the risk of a second wave, and to outline an alternative approach.

As we conclude the development of the evidence base (see Section 3 - Zero carbon commission) the Council is developing an alternative approach to holding a face-to-face Citizens' Assembly, that takes account of both the need to engage with a wide range of people from all communities, but also recognises the constraints the current Covid pandemic place upon us.

This proposed approach will enable the Council and its partners to hold wider conversations and engage with people from across the city. The conversations will initially focus on sharing the truth about climate change and findings of the emerging Zero Carbon Commission, as well as providing opportunities for communities to be involved with planning for a zero carbon future. These wider conversations will aim to test out approaches and, as well as exploring our local evidence base, will also look at the findings of the national [Climate Assembly](#).

The UK Climate Assembly started prior to Covid, on a face-to-face basis but held its final session remotely. Its recent report outlines the actions that the assembly believes need to be taken. The six themes that run through the report are the need for:

- education and information;
- fairness;
- freedom and choice;
- co-benefits and
- nature.

There was also a call for strong leadership from government, and the recognition that everyone needs to play their part. The recommendations seek to provide individuals, communities and organisations with the information, incentives and conditions to make change possible.

These themes will be explored in our public engagement which is proposed to take place after the completion of the commission.

2.4 *Covid-19*

The Covid pandemic is having a devastating, and often inequitable, impact on our communities and residents. We recognise that, in these very challenging times, climate change and decarbonisation may not be at the forefront of peoples' minds as we deal with the immediate and often very difficult impacts of the current pandemic.

However, there are some opportunities. Some of the changes in behaviour such as increased working from home, using technology more and travelling less – where people can of course - are changes that would could have a positive effect on the climate. In some instances, the situation has push us to re-evaluate how we live and work; valuing our communities and green spaces more, and noting and appreciating better air quality and less traffic during lockdown.

Covid has meant that some attention is taken from the climate agenda, but there is strong public sentiment that, in recovering from what is clearly a human and economic disaster, change is required. Research has found that just 6% of people want to return to the status quo, and a majority of the population believe that the climate should be prioritised as much or more than the economy. 81 per cent of the population is concerned about climate change according to research carried out by the Department for Business, Energy and Industrial Strategy, an increase of 3% since March.

A report by HSCB earlier this year noted that the 'C-19 crisis is accelerating the change in consumption behaviour and broadening the public support for a cleaner economy and for environmental responsibility.'

But we should not be complacent. Although there have been some temporary reductions in emissions during lockdown, levels of greenhouse gases in the environment have reached a record high this year.

Previous economic crises suggest that emissions may potentially increase as the economy seeks to recover and following this unique health induced human and economic crisis. People are expected to increase car use as a result of concern about the safety of travelling on public transport: recent research by the University of Cambridge and Yougov found that 26% of people in the UK expected to use their car more since Covid, compared with 9% who said they would use it less. The need to act has not gone away.

2.5 *Green City Partnership Board*

The Green City Partnership Board (GCPB) was established in July 2018. A full list of the current membership is provided in Appendix 6. Following changes made at the end of last year by the current Chair, Cllr. Mark Jones the board now has cross-party representation.

The Green City Partnership Board provides the critical function of bringing together key partners and stakeholders from across the city to work together on solutions to address our climate emergency. Over the course of this year, and despite the current pandemic the board have helped to oversee and steer our Zero Carbon Commission.

The Green City Partnership Board has recognised the key role that it plays in helping us all to achieve this shared goal. At its February Board meeting earlier this year its members confirmed that the board's focus should be on working towards achieving net zero carbon. It recognised that it has a clear role in enabling, engaging and communicating with the city and its communities, as achieving this ambition will require everyone in the city to play their part.

At our last Board meeting in September, we had a presentation from Board Member Liz Ballard (CEO Sheffield and Rotherham Wildlife Trust) on the ecological crisis faced by the planet. Following a discussion, the chair asked for a show of hands on whether members wanted to see the Council explore the possibility of declaring an ecological emergency. There was unanimous support for the proposal, and it was agreed to progress this outside of the meeting. A few other core cities, and a number of other local authorities, have declared similar ecological emergencies and are now developing their plans to take this forward, e.g. [Bristol](#) City Council.

Looking forward, the Green City Partnership Board has a key role in continuing to support the development of our net zero plan, to collaborate with others to facilitate this approach across the city, as well as developing our wider approach on climate change adaptation and ecological crisis we face as a city.

2.6 Resources

The Council have undertaken the first phase Achieving Change (restructure). This has created a Sustainability and Climate Change Team within the Strategic Transport, Sustainability and Infrastructure Service and has brought together the Climate Emergency, Air Quality and wider sustainability functions.

A further Achieving Change was approved in February 2020 that would establish the core structure for the Climate Change and Sustainability Team, and create two new posts (plus an additional 'existing' post) to support the work developing our approach on decarbonisation, as well as develop our work on city resilience and climate change adaptation. The Covid-19 pandemic has significantly delayed progressing this, and we are awaiting corporate processes recommencing following a postponement earlier in the year.

There is still a requirement to confirm the funding in advance of recruitment to these new posts.

3. Zero Carbon Commission

The Council and its partners already had a strategic evidence base, including the Tyndall Report outlined in section 2.2. This set a proposed carbon budget for the city however it wasn't intended to establish the detail on how the city can achieve its net zero ambition.

The Council and the GCPB therefore agreed to commission a series of reports that together will inform a zero carbon plan City and provide an initial evidence base for sharing through the proposed wider engagement that is planned in-lieu of a Citizens Assembly.

The commission was resourced by Sheffield City Council as one-off spend in order to sustain momentum and the initial findings of each report have been presented to the Green City Partnership Board for discussion, consideration and feedback.

The work is split into three elements;

1. Greenhouse gas emissions baseline inventory
2. Gap Analysis – Business as usual projections
3. City-level mitigation pathways for Sheffield / Pathways for Sheffield City Council

3.1 *The Baseline inventory*

(Please refer to the summary infographic (Appendix 1) and baseline report (Appendix 2) for full details.)

The first work package has provided us with a comprehensive greenhouse gas and energy baseline inventory and provides an in-depth analysis of this. The baseline inventory was developed covering the three key Greenhouse Gases (GHG): CO₂, Methane (CH₄) and nitrous oxide (N₂O).

In line with the Tyndall Centre Carbon Budget report, this analysis only considered Scope One and Scope Two emissions; that is emissions directly generated in the city from combustion (e.g. vehicles) or processes and those associated to emissions from electricity use (i.e. generated outside of Sheffield but consumed here, e.g. for heating or cooking)

The sectoral split of where our greenhouse gas emissions arise (2017) shows that the largest sector is industrial and commercial emissions (35%) closely followed by domestic (33%), with 26% arising from Transport and around 6% arising from agricultural, waste and land use emissions.

The majority (over 90%) of our city's greenhouse gas emissions are from carbon dioxide, and therefore this became the focus of subsequent work.

The report looked at trends in carbon emissions and energy consumption from 2005 to 2017. Over this period, total emissions have fallen by 42%. Industrial and commercial emissions have dropped by 55%, domestic emissions by 37% and transport emissions by only 13% over this period. The report explores these trends in more detail; some headline points are outlined below:

Industrial and commercial energy consumption has decreased by ~ 33% since 2005; the largest drop being in solid fuels and then gas. Overall energy intensity has fallen by between 40% and 65%, dependent on fuel which will reflect a range of factors from structural change, with an growing service sector, to efficiency improvements and some fuel switching.

The vast majority of industrial carbon emissions are related to commercial and light industrial activity, with only about 4% related to large industrial sources.

Domestic energy use dropped by 25% overall with a 30% reduction for gas, indicating both boiler and fabric efficiency improvements, and a 15% reduction for electricity, largely indicating improvements in appliance efficiency.

Transport energy use has only dropped by 17%. Car mode share remains fairly constant but bus share has dropped and along with bus energy use.

Overall we can see how the decarbonisation of domestic heat, where gas is the primary fuel for over 80% of dwellings, and the decarbonisation of transport present some of the greatest challenges for the city.

3.2 *The gap analysis*

(Please refer to the summary infographic (Appendix 3) and Gap Analysis report (Appendix 4) for full details.)

This report explored how a decarbonisation trajectory based on current 'business as usual', incorporating existing policies and programmes, including National Government programmes compares against a goal of achieving net-zero carbon emissions by 2030.

Overall, Sheffield has already made some good progress in reducing emissions between 2005 and 2017, with the rate of emissions reductions being higher than the national average so far.

The report made clear that the current policy landscape is not sufficient to meet net zero by 2030, or even to continue this level of emissions reductions into the future.

This position reflects the picture at the national level, where the current policy landscape is not sufficient to meet the fourth and fifth carbon budgets nor to reach net zero by 2050. It should also be noted that this scenario would be similar for other UK cities, and is consistent with other projections such as the SCATTER tool, used by other core cities.

The report noted that much of the progress in reducing carbon emissions in recent years has been from grid decarbonisation, which has progressed at a rapid pace. Going forward, more focus will need to be turned to tricky areas such as decarbonisation of heat and transport. The third report will outline the decarbonisation pathways for the city.

3.3 *Pathways to decarbonisation*

This report is split into two parts. The first will explore the actions required at the city-level in order to achieve net zero carbon emissions by 2030. The second will explore what action the Council will need to consider across its own activities, operations and wider estate in order to be net zero carbon by 2030.

As part of the work to develop the pathways to decarbonisation report, the consultants engaged with a large number of key stakeholders. These were representatives of organisations from sectors who it is envisaged will be critical in the initiation and delivery of the actions required to address climate change.

4. Next steps and recommendations

Concluding work is now being undertaken on the reports, prior to them being presented to Green City Partnership Board for receiving, consideration and feedback.

Once this has been confirmed the Council will be making the reports public and will also be commencing a programme of wider engagement across the city, as a way of sharing the findings as well as seeking support and buy-in to the approaches.

This climate conversation, held over a period of months is intended to enable the council and its partners to develop a clear action plan with a strong evidence base and which the citizens of Sheffield have informed.

It is hoped this plan can be contributed to, adopted and signed-up to by a considerable number of organisations, as well as individuals, across the city.

4.1. *Acting with agility*

Whilst it is important to have a clear evidence base, to understand the scale of the challenge (and opportunity) facing us and to develop a pathway to net zero, it is also important that we don't allow this to delay our action or to miss opportunities. There are clear areas where we will need to act and we are already taking action at the same time that we are gathering the evidence. This includes:

- submitting bids for the government funding which is being made available
- developing a climate emergency assessment that can be used to inform the decision-making process
- considering how procurement can contribute and build on our Sustainable Procurement Policy
- working to ensure that climate change is central to the emerging Sheffield Plan
- exploring options for increasing understanding of the climate emergency amongst elected members and officers across the organisation to enable them to make good decisions and to act as climate leaders.

Appendix 7 sets out some examples of where we are already making progress on climate-related projects and programmes.

4.2 *Scrutiny Committee as climate leaders*

We greatly appreciate the opportunity to update OSMC on progress to address the climate emergency. We anticipate that the final reports on our pathways to decarbonisation will suggest that responsibility for addressing the climate emergency will need to lie across the council (and, indeed, across the city) and there is a valuable role for Scrutiny to play in helping to embed our ambitions across the organisation. We would like to make three recommendations that would help to support the city to progress:

1. Scrutiny Committee chairs to support and challenge other committees on climate action

Achieving net zero carbon will require action to be taken across all our activities, as both a Council and a city. We would greatly appreciate the support of Scrutiny chairs to challenge their wider committees to take action on the climate emergency and to encourage wider agenda items to consider how they can embed climate action into their work.

We are developing a 'climate impact assessment' tool as part of the net-zero carbon commission and would like the opportunity to roll this out for use by Scrutiny committees, alongside other parts of the Council, in order to embed positive climate action into all our activities and programmes, plans and strategies.

2. Support the roll-out of carbon and climate awareness programmes for Members and Officers and attend awareness sessions.

This will help to provide a wider understanding of how we can support our climate agenda through wider activity – including our strategies and policies as well as through the delivery of our services. It will help provide the background for Members to support recommendation 1 above, to improve decision-making and to have the conversations that they will need to have as community leaders.

3. Support the establishment of a cross-party climate change and sustainability Committee

Establishing a climate emergency committee to develop strategies, and implement actions to bring about the necessary changes to meet our zero-carbon emissions target by at least 2030, alongside exploring wider programmes relating to the circular economy, city resilience and adaptation and the ecological emergency.

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18th November 2020

Addressing the climate emergency – Appendices

1. Sheffield Greenhouse gas emissions baseline and inventory - Infographic
2. Sheffield Greenhouse gas emissions baseline and inventory Report
3. Sheffield Net-zero Carbon Gap Analysis infographic
4. Sheffield Net-zero Carbon Gap Analysis Report
5. Setting Climate Commitments for the City of Sheffield: Quantifying the implications of the United Nations Paris Agreement for Sheffield – The Tyndall Centre for Climate Change Research
6. Green City Partnership Board Membership –November 2020
7. Related projects and programmes – A summary