



WOKINGHAM BOROUGH COUNCIL

OVERVIEW AND SCRUTINY MANAGEMENT COMMITTEE

CLIMATE EMERGENCY TASK & FINISH GROUP

REPORT AND RECOMMENDATIONS

JUNE 2021

Task & Finish Group Members:

Councillor Alison Swaddle (Chairman)

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CONTENTS

		Page
Foreword	Councillor Alison Swaddle	3
Section 1	Executive Summary	4
Section 2	Recommendations	6
Section 3	Background	9
Section 4	Transport	12
Section 5	Homes	18
Section 6	Renewable Energy	22
Section 7	Behaviour Change	25
Section 8	Progress Against Other Priorities	29
Section 9	Conclusions and Next Steps	31
Annex A	The Group's 2020 Recommendations	32
Annex B	6 th Carbon Budget - CCC Recommendations	35
Annex C	WBC Budget Extracts 2021/24	37
Annex D	Climate Emergency Funding Sources	39
Annex E	References	41

CLIMATE EMERGENCY TASK & FINISH GROUP

Foreword by Councillor Alison Swaddle

Welcome to the second report of the Climate Emergency Task and Finish Group. So much has happened since our first report in 2020. The Council has successfully responded to the enormous challenges presented by the Covid-19 pandemic. This has involved the redeployment of significant numbers of staff, a huge joint effort with partners across the Borough and significant additional expenditure. All achieved whilst maintaining the key basic services upon which our residents rely.

The response to the pandemic has demonstrated how the Government, local authorities and partners can work together to tackle a major national and international crisis. The size and speed of the response provides a template for the longer term existential threat created by the Climate Emergency.

In our 2020 report we recognised the Council's bold and ambitious response to the Climate Emergency through its Action Plan. We also highlighted a number of areas where we felt the Action Plan should be strengthened with SMART targets that were open to external validation. In a number of areas, our 2021 report follows a similar theme. In spite of the huge focus on responding to the pandemic, we welcomed the further progress made on priorities such as the first solar farm, active travel and work with local schools. However, our discussions this year crystallised the enormity of the challenge facing the Borough and the country. One of our major areas of concern was the lack of a coherent national strategy setting out how local authorities fitted into the delivery of Net Zero and, crucially, how the far reaching changes required would be funded.

2021 will be a significant year as the Government will host the international COP26 summit in November. It is likely that the Government will announce a number of key plans in the run up to COP26 covering areas such as decarbonising transport and energy for homes and businesses. This should provide greater clarity on strategy and funding. The Council is also working on key strategic plans such as the updated Local Plan and the next iteration of the Local Transport Plan. It is vital that these, and other plans, are consistent with the Climate Emergency Action Plan and that Members and officers work seamlessly and consistently across the authority.

The Task and Finish Group met (virtually) on eight occasions. We interviewed the Executive Member for Climate Emergency, officers and external experts. We also received written evidence from the Thames Valley Berkshire Local Enterprise Partnership (the LEP). As stated in last year's report, we are keenly aware that the Action Plan is a living document which will evolve over the next nine years. Our role has been to act as a "critical friend" on that journey.

Finally, I would like to thank the officers, Members and external witnesses who gave up their time so generously and contributed to the Task and Finish Group's work in such a positive and constructive manner. I would especially like to thank Neil Carr from Democratic Services for his work in assisting the Task and Finish Group.

Alison Swaddle

Section 1 - Executive Summary

- 1.1 Wokingham Borough Council declared a Climate Emergency in July 2019. The initial Climate Emergency Action Plan (CEAP) was published in January 2020 with a commitment to an annual update. The Action Plan focused on eight priority areas including transport, homes, renewable energy, waste and behaviour change.
- 1.2 The Task and Finish Group's first report in 2020 concluded that the Council's Action Plan was a bold and ambitious document which required further work to confirm the deliverability of key priorities. Since then, further progress has been made in a number of areas in spite of the Council's focus on tackling the Covid-19 pandemic. The impact of the pandemic affected the Action Plan in a number of ways including more home working and active travel and a significant reduction in public transport use.
- 1.3 2021 is likely to be a significant year as the UK is due to host COP26 in Glasgow in November. In the run up to COP26 it is likely that the Government will publish significant new strategies relating to decarbonising transport and energy. The Council is also due to publish its updated Local Plan and Local Transport Plan. It is essential that these plans are consistent with the CEAP and that the Council's Members, officers and contractors work consistently within that framework.
- 1.4 The Group's 2021 report focuses on four key elements of the CEAP: transport, homes, renewable energy and behaviour change. The Group received evidence from a number of elected Members and officers as well as several external experts.
- 1.5 We noted that UK emissions had reduced by 40% since 1990, largely as a result of decarbonisation in the power sector, reflecting the move from coal to renewable sources of energy. The next steps towards Net Zero would be much more challenging as they impacted directly on every aspect of our lives, from the food we eat, to the way we heat our homes, to the way we travel and the products we consume. We recognised that the challenge is enormous. For example, the car culture is deeply embedded but we need to deliver a significant reduction of cars on the road and a transition to "greener" forms of transport. At the same time, we need to remove 22 million gas boilers from the UK's homes and develop a culture of reduce, repair and reuse.
- 1.6 The Climate Change Committee (CCC) published the sixth carbon budget report in 2020. The report highlighted the need for an overarching national strategy which set out the role of local authorities in supporting the delivery of Net Zero and, crucially, the level of financial support necessary to make progress. Without such a framework, local authorities were "left to work out their own course based on piecemeal policy and communications from the Government".
- 1.7 In relation to transport the Group noted progress over the past year. Work was ongoing to develop a Low Emission Transport Strategy and an Electric Vehicle

feasibility study. Officers had achieved significant funding from Government programmes and were incorporating Government guidance relating to walking and cycling infrastructure. We noted the Council's significant capital expenditure plans for new roads and measures to tackle congestion. We questioned whether the construction of new roads was consistent with the CEAP and recommended the adoption of a revised transport hierarchy which placed active travel and green public transport above the private car. The Group emphasised the potential of enhanced bus services and suggested a stronger partnership with local bus operators. We felt that further work should focus on the barriers to bus usage and trials for subsidised fares on specific routes.

- 1.8 In relation to homes, the Group highlighted the enormous challenge of retrofitting over 60,000 homes in the Borough. We noted that the cost of making a new home carbon efficient was estimated at £5k compared to £25k to carry out a full retrofit. With an average house price in the Borough standing at £416k an additional £5k up front did not appear too onerous. The current lack of national strategy and funding was a major risk to the implementation of the CEAP. We suggested that the Council seek to work collaboratively with housing developers to make new homes as carbon efficient as possible. This could be supported by an interim Supplementary Planning Document linked to the current Local Plan.
- 1.9 In relation to renewable energy, the Group welcomed progress relating to the development of the first solar farm in the Borough. This would generate enough energy to cover emissions from the Council's offices and facilities each year. We also noted the approval of the Wokingham Community Energy scheme which aimed to create investment opportunities through a community share offering. We heard about the "every home a power station" concept where homes were fitted with solar panels and energy efficiency technologies in order to make them active rather than passive structures, capable of generating, storing and releasing their own solar energy. We felt that renewable initiatives should fully consider the impact on biodiversity.
- 1.10 The Group emphasised the important role of behaviour change in delivering the CEAP. We saw behaviour change as the golden thread running through every aspect of the CEAP. An effective way to overcome the barriers to uptake of new technologies would be to use empty shops or pop up facilities in local communities for time-limited demonstrations and displays. We also considered the effectiveness of carbon counting systems which helped individuals and groups to understand carbon footprints and the lifestyle changes which helped to cut carbon emissions.
- 1.11 The Group highlighted the need for ongoing training for Members, officers and partners to enable them to support delivery of the CEAP. We felt that service and budget reviews should be carried out to ensure that spending and functions aligned with the CEAP. Green finance know-how should also be developed in order to maximise any future funding opportunities.
- 1.12 Finally, the Group reiterated its earlier recommendations that the CEAP should be underpinned by a Vision for the Borough in 2030 and beyond and must be underpinned by SMART targets and robust external validation.

Section 2 - Recommendations

Transport

- i) Ensure that the transport hierarchy set out in the Group's report is embedded into all highways and development planning and decisions. This includes ensuring that the Local Transport Plan (LTP4) and all subsequent iterations of the LTP are consistent with the CEAP and reflect the proposed transport hierarchy. Different highways teams must work collaboratively on this basis.
- ii) Review the road building proposals and measures for tackling congestion in the Medium Term Financial Plan (2021-24) to ensure that they are consistent with the CEAP and the transport hierarchy set out in the report and do not generate induced demand.
- iii) Undertake a Borough-wide Journey Needs Assessment, including consultation with key stakeholders, and use it to assess the viability of "green" transport options. In addition to walking, cycling and public transport, options should include electric bikes and scooters, autonomous guided pods (similar to the Heathrow Pod system), electric taxis and electric "last mile" delivery fulfilment.
- iv) Review and adjust the CEAP targets to reflect the Government's announcement that the sale of new petrol/diesel cars and vans will end in 2030. Alongside this, develop a communication campaign and series of events to normalise the use of electric vehicles (EVs), linking with the strategy to provide the necessary EV charging infrastructure (this will include working with vendors).
- v) Ensure that the Bus Service Improvement Plan reflects the Group's recommended transport hierarchy, identifies barriers to increased bus usage (including affordability) and addresses the following issues:
 - Improving access to bus services through additional/enhanced routes;
 - Increasing public awareness through improved advertising, enhanced bus shelters with digital displays and greater connectivity with train services;
 - Pilot schemes for subsidised fares on specific routes to generate data on impact, cost and customer satisfaction.
- vi) Review plans for future road schemes (including schemes currently in the design phase) to ensure the provision of safe cycle routes in line with the recommendations in Local Transport Note (LTN) 1/20.
- vii) Use planning powers and funding opportunities to encourage the maximum roll-out of home, workplace, community-based (e.g. supermarkets) and on-street EV charging points across the Borough.

- viii) Explore the potential for introducing clean air zones at Twyford crossroads and Wokingham town centre in order to improve air quality and reduce carbon emissions.

Homes

- i) Following the scrapping of the Government's Green Home Grant scheme and the Council's Green Bank scheme, urgently consider any new measures to address the additional carbon and funding gap that this creates for the CEAP.
- ii) Introduce a Supplementary Planning Document linked to the current Local Plan to ensure that, whilst we wait for the new Local Plan Update to be completed, any new homes are built as close to carbon neutral as possible.
- iii) Engage proactively and work together with housing developers, planning to build in the Borough, to clarify the Council's position on Climate Emergency and explain the planning and building control requirements arising out of the CEAP.
- iv) Develop a Retrofit Strategy for the Borough. Consider a pilot Energiesprong (or similar) retrofit scheme in order to assess deliverability, generate performance data and customer satisfaction feedback.
- v) Recognise the barriers to "greener" homes and tackle the skills gap by developing a skilled workforce in liaison with colleges/universities and other partners. This will include use of the WBC housing companies to "pump-prime" training opportunities and skills development for local workers and businesses.
- vi) Use the Council's housing companies to showcase the highest standards of energy efficiency in any future developments. These standards may surpass standards set in the new Local Plan.

Renewable Energy

- i) Confirm that net WBC income generated from solar farms and other renewable energy schemes will be reinvested in the Borough via the CEAP.
- ii) Recognise the importance of decentralised power generation (on individual properties) and dual use sites (such as car parks) and work with partners to develop a strategy which enables the uptake of renewable energy opportunities across the Borough for all domestic and private properties.
- iii) Work with partners to deliver a Borough-wide campaign to improve energy efficiency knowledge and behaviour in every household and business.
- iv) Confirm that renewable initiatives will fully consider the impact on biodiversity.

Behaviour Change

- i) Adopt behaviour change science as a golden thread throughout the whole CEAP, rather than a stand-alone action, to ensure that for every action, consideration is given as to how we will help enable people to adapt.
- ii) Recognise that lack of familiarity with new technology is a significant barrier to take-up and tackle this through short-term displays in empty shops (or pop-up facilities) in town centres and community locations. The displays to include workshops and demonstrations. Recruit, develop and support community champions to engage with local communities.
- iii) Submit the findings of the evaluation of potential deliberative processes to the Overview and Scrutiny Management Committee for evaluation and scrutiny prior to implementation. Publish updates and incorporate findings from the chosen deliberative process into the annual CEAP update.

Other Priorities

- i) Provide regular training for Members, staff and partners to enable them to support the targets in the CEAP. Ensure integration between departments and that Climate Emergency awareness is embedded into every service and key decision.
- ii) As part of the annual service/budget planning process, carry out reviews to ensure that policy, spending and functions align with the CEAP, identify any contradictions, then implement mitigation plans.
- iii) Develop project and financial appraisal systems that include CO₂ emissions and climate impacts.
- iv) Review the following CEAP projections and targets:
 - the projected future reduction in CO₂ from national initiatives (currently based on carrying forward historic rates of CO₂ reduction) to reflect projections from the Department for Business, Energy and Industrial Strategy (BEIS);
 - the CO₂ savings associated with CEAP target 17 (20% of all homes to be retrofitted by 2030) as the funding for this work is uncertain;
 - the relationship between CEAP targets 2, 3 and 4 – reduction in private car and van use (targets 3 and 4) will require far more than the proposed doubling of public transport use (target 2).

Section 3 - Background

- 3.1 In July 2019, Wokingham Borough Council declared a Climate Emergency. The Council committed to “playing as full a role as possible in achieving a net carbon neutral Wokingham Borough by 2030”. The Council pledged to develop a Climate Emergency Action Plan and to submit annual updates showing progress on individual carbon reduction targets.
- 3.2 The Climate Emergency Action Plan (published in January 2020) focussed on eight priority areas for carbon emission reductions, including transport, homes, businesses and waste. The Action Plan also set out proposals to generate renewable energy, increase carbon sequestration and strengthen the planning process to deliver carbon neutral construction and infrastructure. Finally, the Action Plan set out proposals for engagement with residents, schools, businesses and local stakeholders as well as ideas to promote positive behaviour changes.
- 3.3 In February 2020, the Overview and Scrutiny Management Committee established the Climate Emergency Task and Finish Group with the following Terms of Reference:
- To scrutinise the Council’s Climate Emergency Action Plan;
 - To scrutinise emerging targets and key performance indicators underpinning the Action Plan;
 - To assess the level of carbon reduction to be delivered by the Action Plan in light of the Council’s 2030 target;
 - To produce a final report to the Overview and Scrutiny Management Committee and the Executive, with guidance for improvement relating to the Action Plan.
- 3.4 The Task and Finish Group’s first report was published in 2020. The report including 14 recommendations was submitted to the Overview and Scrutiny Management Committee in September 2020 and the Council’s Executive in October 2020. Of the Group’s 14 recommendations, 13 were accepted. The Group’s 2020 recommendations are set out at Annex A, together with details of the Council’s response to date.
- 3.5 The Task and Finish Group’s 2020 report made the following overall comments on the Council’s Action Plan:
- “The Action Plan was an ambitious document in line with national best practice. However, more work was required to clarify the impact of specific schemes and ensure that they were supported by SMART targets. We felt that the current version of the Action Plan was specific, measurable and time-bound, but more work was needed to demonstrate that it was achievable and realistic. The Action Plan was underpinned by a significant three year £50m budget, but we noted that the budget contained a number of pre-existing spending commitments - while £18m was new spending, £13m was not reflected in the Action Plan. The Action Plan also contained a clear governance structure on paper, but we

questioned whether this translated into a real life structure which provided robust challenge and support from a range of stakeholders across the Borough.

We commended the Executive Member and Officers for the progress made on the Action Plan between January and July 2020, especially in light of the impact of the Covid-19 pandemic on the Council's day-to-day activities. We also noted that the Covid-19 pandemic had created huge risks for the Borough, but also provided a number of opportunities in relation to a "green recovery" with investment in new jobs, new ways of working and new methods of service delivery".

3.6 The Climate Emergency Task and Finish Group reconvened in February 2021 and agreed to work with the original Terms of Reference. Between February and May 2021, the Group held eight virtual meetings. The Group reviewed the Action Plan with a focus on the specific targets and the underpinning carbon reduction assumptions. It also considered a range of national briefings and reports, including an assessment of progress made by other councils. We also received evidence from the following individuals:

- Ian Bellinger (WBC Category Manager, Growth and Delivery);
- Dr Richard Carmichael (Imperial College London);
- Professor Paul Chatterton (University of Leeds);
- Graeme Cooper (Decarbonisation Director, National Grid);
- Robert Curtis (WBC Transport Planning Team Manager);
- Andy Glencross (WBC Assistant Director, Highways and Transport);
- Ian Gough (WBC Energy Officer);
- Rhian Hayes (WBC Category Manager, Economic Prosperity and Place);
- Jo Hand (Giki Zero);
- Professor Chris Hilson (University of Reading);
- Gregor Murray (WBC Executive Member for Climate Emergency);
- Diana Torvar (WBC Climate Emergency Strategy Officer);
- Robert Williams (Chief Executive, Reading Buses);

In addition, the Group received written evidence from the Thames Valley Berkshire Local Enterprise Partnership (LEP) and John Booth (Reading Friends of the Earth).

3.7 As part of its 2021 review of the Climate Emergency Action Plan, the Task and Finish Group agreed to focus on four key issues. These were:

- Transport;
- Homes;
- Renewable Energy;
- Behaviour Change.

These issues receive the major focus of the report. Future reports will include a focus on other areas of the Action Plan.

- 3.8 Following the initial drafting of our report, we met with the Executive Member in order to sense check and invite initial feedback on our conclusions. The Group's final report will be submitted to the Overview and Scrutiny Management Committee in June and then to the Council's Executive later in 2021.
- 3.9 UK emissions have fallen by over 40% since 1990, largely as a result of decarbonisation in the power sector and improvements in energy efficiency. The significant reductions in the power sector reflected the move from coal to renewable sources of energy such as wind and solar. These changes have not resulted in a significant impact on people's day-to-day lives.
- 3.10 The next steps in achieving net zero will be much more difficult, entailing big changes to every aspect of our lives, from the food we eat, to the way we heat our homes, the way we travel and the jobs we do. It will involve, for example, upgrading the country's housing stock, replacing millions of gas boilers and replacing petrol and diesel cars with electric vehicles. We will need to find ways of funding the enormous investment required whilst recovering from the economic and financial strains arising out of the Covid-19 pandemic. The scale of the challenge is enormous.
- 3.11 The most recent Government carbon emission figures indicated that the Borough's carbon footprint was 573 ktCO₂e in 2018 (down from 580.9 ktCO₂e in 2017). This was made up of domestic emissions (45.1%), transport emissions (31%) and emissions from the industrial and commercial sector (25.9%). As we stated in our 2020 report, the impact of consumption emissions (including imported goods, aviation and shipping) meant that the true carbon footprint was likely to be significantly higher.
- 3.12 The Climate Change Committee's (CCC) sixth carbon budget report (December 2020) included a supporting document: Local Authorities and the Sixth Carbon Budget. This paper set out a number of challenges facing local authorities which are delivering Action Plans. One challenge relates to the lack of an overarching national strategy which sets out how English local authorities fit into the delivery of net zero. "The onus is on local authorities to work out their own course based on piecemeal policy and communications from Government....they cannot deliver effectively and efficiently without longer term policy and funding certainty to underpin investment decisions". This was a recurring issue in the Task and Finish Group's witness sessions. The CCC report set out a number of recommendations for the Government and local authorities in order to ensure the effective delivery of the sixth carbon budget at the local level. These recommendations are set out at Annex B.
- 3.13 The Task and Finish Group report looks at the key priorities within the Council's Action Plan, with the specific priorities outlined above: Transport, Homes, Renewable Energy and Behaviour Change. Each section sets out the relevant targets within the Action Plan and summarises progress made since the 2020 update. The Group's findings and outcomes are then set out along with specific recommendations to the Council's Executive.

Section 4 – Transport

4.1 Action Plan Targets

The Climate Emergency Action Plan (CEAP) set out targets for CO₂e savings for each of the key priority areas. The targets for Transport are set out in the table below. The targets represent cumulative savings for the period 2020-2030.

CEAP – Action Plan Target	tCO ₂ e
Deliver a greenway network across the Borough – 37km by 2030 – 60km by 2035	45
Double public transport use by 2030 from 2019 baseline	7,813
20% reduction in distance travelled in private vehicles per person per year by 2030	19,624
Use of cars/vans/motorbikes decreases from 74% total miles to 56% in 2030	18,756
Reduce CO ₂ emissions from Council related travel by 70% by 2030	73
Continue research and innovation programmes for CO ₂ reduction	Neutral
50% (new) electric vehicles (EVs) registered in the Borough by 2030	45,000
Council car fleet to be entirely ultra-low emission by 2028	45
100% of new buildings to be EV ready from 2022	Neutral
Air Quality – reduce NO ₂ concentration by 50% in 3 management areas by 2025	TBC
Air Quality – Educate residents - how to improve air quality whilst reducing emissions	TBC

4.2 Update

We were informed of the following actions taken to support the key Transport targets in the Action Plan:

- Development of a Low Emission Transport Strategy and completion of the Electric Vehicle Overview and Benchmarking feasibility study.
- Implementation of Congestion and Intelligent Traffic schemes with the aim of improving network capacity.
- Government publication of the “Gear Change” strategy and guidance for Local Cycling and Walking Infrastructure (LCWIP) in 2020.
- Borough-wide LCWIP developed in line with Government guidance – schemes for Earley/Reading, Woodley/Reading and Wokingham Town Centre/A329 London Road
- Successful bid for £577k funding from Government’s Active Travel Fund.
- Planning permission granted for Park and Ride projects at Winnersh Triangle and Coppid Beach.
- Development of a Bus Service Improvement Plan (including the establishment of an Enhanced Partnership) in line with the Government’s Bus Back Better Strategy.
- Works progressing for Greenway projects at Cantley, Woosehill Meadows and Coombes Lane/Coles Lane.
- The My Journey team continue to deliver cycle training for children and adults across the Borough.
- New electric vehicle charging points installed including Arborfield and Matthews Green schools, Elms Field and Bulmershe Leisure Centre.

- Funding secured for additional air quality monitoring units, including at two schools.
- Schools competition for no-idling banners – winning banners installed at hotspot locations, e.g. Wokingham train station.

4.3 Evidence and Analysis

The July 2020 WBC Climate Emergency Action Plan Progress Report indicated that transport accounted for 182.5 ktCO₂e – 31.4% of the Borough’s carbon footprint. This figure did not include emissions from major transport links such as the M4 which runs through the Borough. Nationally, emissions from passenger cars have fallen by just 1% since 2011, in spite of the rise in sales of electric and hybrid vehicles. The National Audit Office attributed this to increased sales of Sport Utility Vehicles (SUVs), an increase in road traffic and revised methods for estimating differences between emissions measured in laboratory conditions and emissions measured on the road. In 2019/20, SUVs made up more than 40% of new cars sold in the UK, while fully electric vehicles accounted for less than 2%. One effect of the Covid-19 pandemic – a huge decrease in public transport use – is likely to see increased car usage for some time to come as public confidence in trains and buses is rebuilt

We noted that the Council’s Medium Term Financial Plan for 2021/24 included a commitment to spend £130m on new roads and £17m on measures to reduce congestion and improve traffic flow (Annex C). In our 2020 report we referred to the Fundamental Law of Road Congestion which states that an increase in road capacity leads to an increase in the number of miles travelled as a result of “induced demand”. We questioned whether building new roads was consistent with the CEAP, for example the aim to reduce the distance travelled in private vehicles by 20% by 2030. We also noted other carbon impacts from new roads including the embodied carbon in the steel, concrete, asphalt and other raw materials used to build them and the loss of carbon sinks following land clearance and removal of mature trees.

As part of its discussions in 2020, the Group was informed that the Action Plan included an assessment of the carbon impact of around 10,000 new homes in the Borough up to 2030, but did not include, for instance, the associated carbon impact of additional vehicles on the transport network. The Group noted that the Borough had the highest level car ownership in the country (1.6 cars per household). This meant a potential extra 12,000 cars on the Borough’s roads by the end of the decade.

The Group heard that, in relation to transport, the easiest aspect to tackle was emissions from passenger vehicles. HGVs, aviation, shipping and rail were more challenging. Decarbonising transport also led to significant improvements in air quality. Each year in the UK, 40,000 deaths were linked to air pollution and a legal precedent had been set recently with a coroner including air quality as a cause of death. Environmental law firm Client Earth was monitoring every local authority’s performance against the national air quality standards.

We noted the findings of the RAC Foundation Transport Price Index which used Office for National Statistics (ONS) data to plot the % change in the cost of motoring, rail and bus fares over a rolling 10 year period. The Index demonstrated that, over the past 10 years:

- the cost of motoring increased by 9%;
- Rail fares increased by 37%;
- Bus and coach fares increased by 75%;
- the cost of living (RPI) increased by 28%.

As mentioned above, the Government is due to publish its Transport Decarbonisation Plan in 2021. In its “Setting the Challenge” document (2020) the Government set out the following key principles:

- Public transport and active travel will be the natural first choice for our daily activities.
- From motorcycles to HGVs, all road vehicles will be zero emissions.
- Our goods will be delivered through an integrated, efficient and sustainable delivery system.
- Clean, place based solutions will meet the needs of local people.

In order to deliver on these principles and its Climate Emergency commitments we heard that the Council would need to ensure that its Local Transport Plan 4 was aligned with the Climate Emergency Action Plan and with the following transport hierarchy:

- Travel less – e.g. from more home working.
- Active travel – more walking and cycling.
- Assisted travel – e.g. electric bikes.
- Public transport – using clean energy.
- Shared transport – car clubs/car pooling.
- Private car – using clean energy.

The Group considered the value of a Borough-wide journey needs assessment. This would inform the development of a network of high-quality, safe cycling routes to link residential areas, local businesses, shops, schools and transport hubs can be developed that takes people to where they need to get to. Part of this process would include fully consulting with cyclists and aspiring cyclists to not only understand the routes required, but how to make them as safe and user friendly as possible and to further understand barriers that need to be overcome to encourage more people to cycle. In addition, this programme must include working with local businesses to understand the journey needs of their staff. A key focus must be local journeys. At present, around 60% of 1-2 mile journeys in England are made by car. We need to encourage and enable residents to walk or cycle for these local trips to the park, school or shop.

We noted the Government’s Local Transport Note (LTN1/20) which stated that “cycling will play a far bigger part in our transport system from now on....Too much cycling infrastructure is sub-standard, providing little protection from motorised

traffic and giving up at the very places it is most needed....Cycling must be placed at the heart of the transport network". Government data indicated the following benefits of cycling and walking infrastructure:

- Health – physical inactivity costs the NHS up to £1bn per annum, with further indirect costs calculated at £8.2bn.
- Wellbeing – 20 minutes of exercise per day cuts risk of developing depression by 31% and increases the productivity of workers.
- Congestion – the new east-west and north-south cycle routes in London are moving 46% of the people in only 30% of the road space.
- Air quality – meeting Government targets to double cycling and increase walking would lead to savings of £567m annually from air quality alone and prevent 8,300 premature deaths each year.
- Climate change – mode shift to active transport is one of the most cost effective ways of reducing transport emissions.
- Economy – cycling contributes £5.4bn to the economy per year and supports 64,000 jobs.

The Group heard from Reading Buses about the importance of a new low carbon culture which saw public transport as a top priority rather than the last resort. We noted that the layout of the Borough provided significant challenges for the development of improved bus services but felt that a number of measures should be considered, including the principles set out in the Government's "Bus Back Better" strategy. The Government states that "buses are the easiest, cheapest and quickest way to improve transport. Building a new railway or road takes years, if not decades. Better bus services can be delivered in months. Experience shows that relatively small sums of money, by the standards of transport spending, can deliver significant benefits". Improved bus services can also support wider policies as they are used by less advantaged residents. A cost-benefit analysis of major bus schemes found that they delivered benefits more than four times their cost.

In relation to electric vehicles (EV) we considered the slow uptake and the current barriers to quicker progress, as follows:

- Upfront Price - the most popular reason for households not purchasing an EV was the upfront price. Including the plug-in car grant, zero emission vehicles cost an average of £13k more than petrol/diesel equivalents. We noted that, counterintuitively, the Government had reduced the "plug in car grant" incentive for potential EV buyers from £3,500 in 2019 to £3,000 in 2020 and then to £2,500 in 2021. At the same time, the March 2021 Budget froze petrol and diesel fuel duty for the 11th consecutive year.
- Charging Infrastructure – surveys indicated that drivers felt that a lack of local charge points held them back from purchasing an EV. Over the last decade, there has been significant growth in the number of public charge points in the UK, which has now reached over 34,000. However, the CCC states that, in a scenario of EV uptake exceeding 20 million vehicles, almost 400,000 public charge points would be required, with the bulk of these being rapid chargers. It is likely that most charging will take place when vehicles are stationary (at work, at a train station or overnight). On average cars are stationary 97% of the

time. Most charging will be slow, but rapid charging en route will be important. This is being addressed by the Government's Project Rapid.

- Range anxiety – many drivers expressed concern that they would run out of range on long journeys. Comparing the driving range of the most popular BEVs in the UK with their petrol/diesel vehicle counterparts reveals that EVs have considerably less driving range. We heard that the average daily journey distance for a car in the UK is 37 miles. For a second family car the distance is 11 miles. It was considered that a reasonable maximum driving distance should be around 200 miles or 3 hours, so this would be an adequate range for EVs.

The Group noted that, in March 2021, over 10% of all new car sales were electric or hybrid, but this accounted for only 2% of the cars on the road. It was also clear that company car sales would quickly move to EV due to the tax benefits. Later in the decade there would be a tipping point after which sales of EVs would increase dramatically. As a strategy the Council could let an initial contract with a private company for the installation of charging infrastructure. Then, after a few years, when the market had developed and the risks had decreased, the Council could take on the role itself and collect revenue from the works.

In September 2020, there were 32.9 million cars registered in the UK. 1.1% of these cars were ultra-low emission. As the average lifespan of a car is 14.5 years it is clear that many petrol/diesel vehicles will be on the road in the mid-2030s. In relation to the support the Council can provide in the move to EVs we heard about the importance of communication, publicity and the use of “nudges” to increase residents' awareness.

As an example, Coventry City Council was running a “Go Electric Taxi” scheme as part of its role as UK City of Culture 2021. The scheme sees £1.2m investment in charging infrastructure and other measures such as financial incentives, free charging for a trial period and zero commission fares on taxi app bookings. It was important for potential EV buyers to see the vehicles in use in order to understand the long term benefits. Could the Council implement a similar scheme for taxis based, for example, at Wokingham station? This could be a highly visible scheme which would introduce residents to EVs.

The Group heard about the co-benefits of climate change mitigation. Reducing air pollution from emissions of fossil fuels and the accompanying health impacts was an important co-benefit. Others included environmental, resource efficiency and sustainability of ecosystems. A number of local authorities had introduced clean air zones to tackle specific areas of concern.

4.4 Recommendations

- i) Ensure that the transport hierarchy set out in the Group's report is embedded into all highways and development planning and decisions. This includes ensuring that the Local Transport Plan (LTP4) and all subsequent iterations of the LTP are consistent with the CEAP and reflect the proposed transport hierarchy. Different highways teams must work collaboratively on this basis.

- ii) Review the road building proposals and measures for tackling congestion in the Medium Term Financial Plan (2021-24) to ensure that they are consistent with the CEAP and the transport hierarchy set out in the report and do not generate induced demand.
- iii) Undertake a Borough-wide Journey Needs Assessment, including consultation with key stakeholders, and use it to assess the viability of “green” transport options. In addition to walking, cycling and public transport, options should include electric bikes and scooters, autonomous guided pods (similar to the Heathrow Pod system), electric taxis and electric “last mile” delivery fulfilment.
- iv) Review and adjust the CEAP targets to reflect the Government’s announcement that the sale of new petrol/diesel cars and vans will end in 2030. Alongside this, develop a communication campaign and series of events to normalise the use of electric vehicles (EVs), linking with the strategy to provide the necessary EV charging infrastructure (this will include working with vendors).
- v) Ensure that the Bus Service Improvement Plan reflects the Group’s recommended transport hierarchy, identifies barriers to increased bus usage (including affordability) and addresses the following issues:
 - Improving access to bus services through additional/enhanced routes;
 - Increasing public awareness through improved advertising, enhanced bus shelters with digital displays and greater connectivity with train services;
 - Pilot schemes for subsidised fares on specific routes to generate data on impact, cost and customer satisfaction.
- vi) Review plans for future road schemes (including schemes currently in the design phase) to ensure the provision of safe cycle routes in line with the recommendations in Local Transport Note (LTN) 1/20.
- vii) Use planning powers and funding opportunities to encourage the maximum roll-out of home, workplace, community-based (e.g. supermarkets) and on-street EV charging points across the Borough.
- viii) Explore the potential for introducing clean air zones at Twyford crossroads and Wokingham town centre in order to improve air quality and reduce carbon emissions.

Section 5 – Homes

5.1 Action Plan Targets

The Climate Emergency Action Plan (CEAP) set out targets for CO₂e savings for each of the key priority areas. The targets for Homes are set out in the table below. The targets represent cumulative savings for the period 2020-2030.

CEAP – Action Plan Target	tCO ₂ e
By 2030 20% of households to be retrofitted	35,446
From 2022 major residential development designed and built to be carbon neutral	Neutral
From 2022 major non-residential development designed and built to achieve the BREAM excellent standard	Neutral
Establish a Spatial Strategy and Design Framework which promote active and sustainable travel, sustainable design and construction and biodiversity gain	Neutral
Support low carbon and renewable energy generation	Neutral
From 2022 all new residential and non-residential buildings to be designed and built to be EV ready	Neutral

5.2 Update

We were informed of the following actions taken to support the key priorities relating to Homes:

- Energy Company Obligation (ECO) and Help to Heat Scheme – the scheme (commencing in November 2020) aimed to help eligible residents to reduce their carbon emissions and lower their fuel bills by making their homes more fuel efficient. Improvements relating to the Help to Heat Scheme included loft insulation or cavity wall insulation as standard. Also, some peripheral measures such as hot water tank jackets, low energy lighting, etc.
- Eligible households for the Help to Heat Scheme included those in receipt of means tested benefits or with household income below £35k after taxes. Since the end of 2020, 486 homes had benefitted from these schemes (mostly the ECO scheme) which had delivered a carbon reduction of 217 tonnes CO₂e per annum.
- An interim Net Zero Carbon Design Guide was commissioned to help establish Net Zero requirements for new Council developments – designers and developers are being encouraged to use the Guide to improve the design of projects.
- Subject to Planning approval, promotion of an affordable self-build scheme at Toutley – including 13 units with a mix of 2, 3 and 4 bed houses.

5.3 Evidence and Analysis

Our homes use 35% of all the energy in the UK and emit 20% of all CO₂ emissions. Decarbonising heat is the biggest energy challenge in tackling the climate emergency, particularly because it requires action in millions of individual homes. Currently, just 1m of the UK's 27m homes have low-carbon heat. Much of

the energy we use within our homes is wasted because our housing stock is highly inefficient. Issues like draughty, single-glazed windows, ill-fitting doors, open fireplaces, lack of insulation, poor ventilation, and more mean that much of this heat energy is lost.

At the moment, new homes in the Borough are being built with gas connection points and gas boilers. The cost of making a new home carbon efficient was estimated at £5k compared to the £25k cost of retrofitting a home at a later date. With average house prices in the Borough standing at £416k it was felt that additional expenditure of £5k up front for energy efficiency measures was not unreasonable. There were around 70,000 homes in the Borough, so the Action Plan target of 20% homes retrofitted by 2030 was very ambitious. This challenge also reflected the lack of a national strategy and consistent funding opportunities, outside of the current funding schemes directed at low income groups.

The Council should aim to use all the planning powers at its disposal to ensure that new homes were as carbon efficient as possible. The Group felt that the Council should consider an interim Supplementary Planning Document to set higher standards immediately while the Local Plan Update was ongoing.

The Group noted that, in relation to the retrofitting of homes and other buildings, councils were operating without a national strategy and clear funding opportunities. Many councils had developed action plans with ambitious targets but, after 10 years of austerity and the Covid-19 pandemic, there was little flexibility in council budgets to implement retrofit schemes.

The Council's Action Plan included a target to retrofit 20% of the Borough's homes by 2030. Retrofitting these homes will require more than one or two insulation measures. It will require an integrated approach to transforming the energy needs and technical systems in homes requiring quality in design, installation and customer care. With 60,000 homes in the Borough, this is an ambitious target. One of the key questions: even if funding was available is who will carry out this level of work? In effect, what is required is a retrofit of the further education system to train young people with the skills to carry out this huge retrofit programme. The Group discussed the potential for delivering this new training programme through local colleges in Bracknell and Reading and wider afield. The jobs necessary included surveyors, designers, installers, community liaison officers, post installation evaluators, etc.

We heard about a pilot project to retrofit a Council property in Riseley up to a high standard with the aim of improving understanding of the costs and challenges involved. The property was a semi-detached house with three bedrooms. It did not have a gas supply and already used an air source heat pump. Measures implemented at the property included improved loft insulation, thermally efficient windows and doors and modern heating controls. The cost of these measures was £15.5k. In addition, 12 solar panels and a battery storage system had been added at a further cost of £8.6k. Added to this, the cost of an air source heat pump was £6k to £8k. The works had improved the SAP rating for the property from grade D to B. Officers would be monitoring the effectiveness of the measures in conjunction with the tenant. The financial implications outlined above indicate the huge cost of retrofitting the Council's housing stock of 2,700

homes. If we use the figure of £20k per property, this would total £54m plus ongoing maintenance.

We heard about Energiesprong approach which had originated in the Netherlands and was now being trialled in the UK. Energiesprong homes utilised off-site manufacturing which enabled retrofits to be carried out quickly with minimum disruption to tenants. The system applied the following criteria:

- Performance guaranteed for 30 years
- Implementation of measures within one week.
- Affordability delivered through energy savings and reduced maintenance costs.
- Attractive design with upgraded features.
- Procurement based on purchasing housing concepts rather than detailed specifications and drawings.

In relation to new housing developments, the Group considered progress relating to the Local Plan Update. The emerging Local Plan was seeking to continue the approach of putting development in the right places which reflected the Climate Emergency challenge. The suite of policies in the plan would allow for and encourage active travel and set environmental performance standards for new building and require electric vehicle charging points. The emerging Local Plan would set out clear principles and requirements with supporting documents providing further detail including detailed standards.

The use of supplementary planning documents allowed for a much quicker and efficient update of requirements compared to updating the Local Plan itself. As discussed earlier, the emerging plan aimed to achieve carbon neutral development. This aim was broadly supported by residents and stakeholders in consultation responses, although developers were concerned about costs and impact on viability.

The revised timeline for the Local Plan Update. Following an unexpected change to the emergency planning arrangements around AWE Burghfield in May 2020, the Grazeley garden town proposal was no longer achievable. Officers were reconsidering all of the sites submitted for consideration and also, to help consideration of alternative potential strategies, had commissioned masterplanning work to understand the potential of two specific areas of land which were not previously available. It was envisaged that a further consultation on the Local Plan would take place in the summer/autumn of 2021.

5.4 Recommendations

- i) Following the scrapping of the Government's Green Home Grant scheme and the Council's Green Bank scheme, urgently consider any new measures to address the additional carbon and funding gap that this creates for the CEAP.
- ii) Introduce a Supplementary Planning Document linked to the current Local Plan to ensure that, whilst we wait for the new Local Plan Update to be completed, any new homes are built as close to carbon neutral as possible.

- iii) Engage proactively and work together with housing developers, planning to build in the Borough, to clarify the Council's position on Climate Emergency and explain the planning and building control requirements arising out of the CEAP.
- iv) Develop a Retrofit Strategy for the Borough. Consider a pilot Energiesprong (or similar) retrofit scheme in order to assess deliverability, generate performance data and customer satisfaction feedback.
- v) Recognise the barriers to "greener" homes and tackle the skills gap by developing a skilled workforce in liaison with colleges/universities and other partners. This will include use of the WBC housing companies to "pump-prime" training opportunities and skills development for local workers and businesses.
- vi) Use the Council's housing companies to showcase the highest standards of energy efficiency in any future developments. These standards may surpass standards set in the new Local Plan.

Section 6 – Renewable Energy

6.1 Action Plan Targets

The Climate Emergency Action Plan (CEAP) set out targets for CO₂e savings for each of the key priority areas. The targets for Renewable Energy are set out in the table below. The targets represent cumulative savings for the period 2020-2030.

CEAP – Action Plan Target	tCO ₂ e
Increase generation of renewable energy through investment in solar farms – to power the equivalent of 25,000 homes in the Borough by 2030	25,560
Increase renewable energy generation to generate equivalent to 1,550 kilowatt hours (k WH) per household in 2030	27,333

6.2 Update

We were informed of the following actions taken to support the key priorities relating to Renewable Energy:

- Planning application submitted for the first solar farm, located in Barkham, a 40 hectare site which would lead to the generation of enough energy to power 6k-8k homes and would save 6k-7k tonnes of CO₂e per annum.
- The solar farm site would also accommodate 15k trees. It was estimated that the solar farm would operate for 40 years, after which the land could revert back to more traditional farming use.
- Wokingham Community Energy (WCE) – WCE had been approved by the Council's Executive in January 2021. The aim of the scheme was to create investment opportunities through a community share offering. Income raised through the sale of shares would then be used to deliver green energy projects across the Borough such as solar or green energy installations. The selected projects would then generate income through the sale of electricity to public energy suppliers and/or the export of electricity into the Grid.

6.3 Evidence and Analysis

In relation to solar farms, the Group heard that a planning application had been submitted for the first WBC solar farm, situated on 40 hectares of land straddling Barkham Ride. It was estimated that the solar farm would generate 37m kilowatt hours of energy per annum against WBC's annual corporate use of 35m kilowatt hours of energy. Alternatively, the energy from the farm could also be used to power around 5k to 8k homes and businesses.

The current plan was for the energy from the solar farm to put back into the national grid. The Group was keen to ensure that any income generated by the solar farms was reinvested in the Borough via the CEAP.

The Group asked about the number of homes that could be supported by the energy generated by a WBC solar farm? It was confirmed that the Energy team

had not carried out this calculation due to the wide range of property types across the Borough and the different energy requirements for each type. The current plan was for the energy from the solar farms to be fed into the National Grid.

Once the solar farm was in situ, there would be room on the site for animal grazing which could generate additional income for WBC. The solar farm had been designed with diversity in mind. There would be room for grazing animals such as sheep or chickens, which could help to deliver additional income. The whole site would be fenced for security reasons.

The Group considered the Council's powers to ensure that new house building included solar panels. At present housebuilders had obligations to meet set standards. The Local Plan update process was exploring the issue of achieving higher standards in line with the Climate Emergency Action Plan.

The Group heard about the "every home a power station" concept where homes were fitted with energy efficiency technologies, solar PV and smart meters in order to make them active rather than passive structures, capable of generating, storing and releasing their own solar energy. These homes could generate electricity for storage or transfer to the grid. As an example, these homes utilised integrated photovoltaics on the roofs and a solar heat collector on south facing walls for water heating. The system used existing technologies. The innovation relates to the way that they are brought together.

We heard that the electricity challenge was huge - if we are going to heat homes and charge electric vehicles we will need to increase capacity significantly. Solar farms and solar PV could play a part in this process. The Council could calculate the potential amount of energy delivered through solar farms and widespread use of solar PV and match that to the Borough's carbon footprint.

In 2019 and before the pandemic, the UK was building over 170,000 new houses per annum. This new housing could help drive localised renewable energy with homeowners utilising electricity created on their rooftops. For example, a home with two residents will, on average, need 12 solar panels on a 3kW system. Most new build homes have the potential to create their own renewable energy and contribute to the grid. With self-funding options available, solar panels are an investment for individuals and families looking to save money and protect the environment. Housebuilders can also offer sustainable options to help with renewable energy creation and increase energy efficiency. Directing properties for maximum sunlight harvesting means that solar panels can be even more effective when used.

In relation to existing homes, we noted that some councils offer incentive schemes to their tenants. This was achievable through the Government's Feed in Tariff (FIT) scheme until January 2020 when it was replaced by the Smart Export Guarantee (SEG) scheme. Usually, a home owner who purchases a solar PV system will benefit from reduced energy costs and payments from the SEG. In the case of council properties, tenants may be able to save on electricity

costs with the SEG payment going back to the organisation that funded the installation, i.e. the council itself.

As an example, Manchester City Council owns 13,000 of the 68,000 social homes in the city which are currently managed by an arms-length management organisation, Northwards Housing. Over the past five years 1,500 solar panels have been installed and further retrofitting is planned. With regard to procurement, the council has adopted specific carbon reduction questions which examine suppliers' approaches and how they will be applied to contracts. 10% of the overall evaluation bids is linked to these questions.

The Group heard about examples of solar cooperatives, including Bristol, Edinburgh and London (Repower). Home batteries were another option but were costly (£6k to £8k). Community wind was another possibility but was not considered realistic in many UK locations– it was not considered in the Council's Action Plan. Witnesses stressed the importance of reinvesting profits from local energy generation back into the Borough through the CEAP.

6.4 Recommendations

- i) Confirm that net WBC income generated from solar farms and other renewable energy schemes will be reinvested in the Borough via the CEAP.
- ii) Recognise the importance of decentralised power generation (on individual properties) and dual use sites (such as car parks) and work with partners to develop a strategy which enables the uptake of renewable energy opportunities across the Borough for domestic and private properties.
- iii) Work with partners to deliver a Borough-wide campaign to improve energy efficiency knowledge and behaviour in every household and business.
- iv) Confirm that renewable initiatives will fully consider the impact on biodiversity.

Section 7 – Behaviour Change

7.1 Action Plan Targets

The Climate Emergency Action Plan (CEAP) set out targets for CO₂e savings for each of the key priority areas. The targets for Behaviour Change are set out in the table below. The targets represent cumulative savings for the period 2020-2030.

CEAP – Action Plan Target	tCO₂e
Climate Emergency to be part of the core communication strategy for the Council	TBC
Active engagement with residents and local businesses with Climate Emergency initiatives	TBC
Estimated Total Carbon Savings	TBC

7.2 Update

Officers have divided behaviour change into six priority areas: businesses, energy, food, schools, transport and waste. Work was ongoing with partners and behaviour change experts to identify initiatives relating to each priority. The focus was on identifying barriers to behaviour change and the communications and “nudges” which the Council could use to enable residents and businesses to change behaviours. The WBC Communications team were working on a communications and engagement plan.

Officers have undertaken a review of potential deliberative process to support the Council’s goal of achieving Net Zero by 2030. The processes investigated included climate assemblies, citizens’ juries, focus groups, online citizens’ panels, etc. The processes were assessed in relation to cost, timeframe, number of participants, participant variation, discussion potential and communication of results. Due to time constraints, the Task and Finish Group were not able to scrutinise the review of deliberative processes in detail.

7.3 Evidence and Analysis

The Group recognised the crucial importance of behaviour change in delivering the CEAP. We also considered progress in identifying and setting up a suitable deliberative process in order to raise the profile of the CEAP and to better understand the views of residents and community groups.

The Group’s 2020 report highlighted the types of behaviour change needed to achieve Net Zero, including:

- Drive less – reducing car ownership and use through modal shift to public transport, walking and cycling which provides co-benefits for air quality, congestion, more active and healthy lifestyles and fewer road traffic accidents.
- Eat less meat and dairy products – the impact of UK food consumption extends beyond emissions currently produced by UK agriculture – both through

imported foods and the potential to free-up land use for carbon sequestration. Healthier diets will help to address the obesity crisis.

- Make homes energy efficient. Pre-heat ahead of peak times. Install LED lights. Reduce water consumption. Plant a tree and/or create a garden. Shop local. Use less plastic, or no plastic. Avoid “fast fashion”.
- Reduce flying – 70% of UK flights are taken by 15% of the population. A single return flight from London to New York (including the effects on the high atmosphere) contribute a quarter of the average person’s annual emissions.

We felt that behaviour change was a “golden thread” running through every aspect of the CEAP. It was crucial in areas such as the move from gas heating to electric, delivering a comprehensive EV charging infrastructure and modal shift from the private car to active and public transport. The Council could help to change behaviour by moving its procurement towards low carbon suppliers, setting an example by making Council buildings net zero and using public spaces to showcase new technologies such as heat pumps and retrofits. Witnesses stressed the importance of people coming face to face with new technologies. This helped to remove the easy excuse of committing to change but delaying action.

Members were reminded of historic facilities such as British Gas showrooms, found in every High Street. Could the Council create something similar by, for example, using an empty shop or a pop-up facility for a period, thereby allowing residents to see new technologies in action and allowing them to ask questions about cost, installation, performance and customer support?

The Group also considered issues relating to changing diet and food choices and the potential role of the Council. Could the Council engage with schools to ensure that more vegetarian options were on the lunch menu? If this happened it was likely that more pupils would change to vegetarian options and would then influence their families at home. Were there any discussions with local farmers who may be interested, for example, in moving from livestock to horticulture?

The Group discussed the importance of highlighting potential co-benefits such as reduced carbon from traffic alongside health and economic benefits through improved air quality. It was important to quantify the level of co-benefits.

In relation to domestic heating, witnesses highlighted the importance of measuring the benefits of initiatives such as heat pumps and improved insulation. For example, finding out how happy residents were with the cost and performance of these measures and sharing that information with residents who were considering change. Real world evidence was important in behaviour change. We noted that the impact of the recent Fire Safety Bill on thousands of blameless leaseholders may make residents more cautious in considering making changes to their properties.

We were informed about the Ashden Climate Action Co-benefits Toolkit: ‘31 climate actions for councils’ which presented 31 actions every council declaring a climate emergency should consider implementing, quantified by cost and carbon saved. We felt that this may be a useful comparator for the Council’s Action Plan.

The Group discussed the Council's work with schools in monitoring air quality outside school sites. This was a potential "nudge" through sharing the air quality data with parents, thereby encouraging them to cut idling engines and improve the air breathed by their children. This could be considered as part of the Council's anti-idling strategy.

The Group received a presentation on the work of Giki, a social enterprise which helped residents to identify ways to adapt their lifestyles and diet in order to reduce carbon emissions. The presentation showed that UK residents generated around 9 tonnes of CO₂e per annum compared to the global average of 5 tonnes per person and the US average of 16 tonnes. Giki worked with partner organisations such as schools, universities and councils and sought positive media coverage. It ran a programme for community groups which shared ideas and suggestions relating to carbon reduction issues.

Dr Richard Carmichael had worked with James Hand from Giki on the report "Reduce, Replace, Repair – A practical pathway for individuals to reach Net Zero". The report set out a representative pathway for individuals which showed tangible steps to reduce their carbon footprint.

The Group noted the constant challenge relating to information and people's attention spans. Engagement was most effective if delivered by trusted sources such as councils. It was suggested that the Council could include information about Giki (or other carbon calculators) in its newsletters and other public communications. Giki also ran an Eco Champions programme for Councillors and other community leaders. This involved free access to Giki Zero, a monthly virtual webinar and meeting and access to information and resources to support community engagement work. The Group noted the benefits of the carbon counting app approach. It was more about enabling than encouraging, providing individuals with the tools to assess their carbon footprint and take the necessary steps to change their lifestyles and consumption.

In relation to deliberative processes, the Group revisited discussions in 2020 on the role of citizens' assemblies and other deliberative processes. We heard about the work of the Leeds Climate Change Citizens' Jury which involved 25 residents meeting for 30 hours over a two month period. In our 2020 report, we stated:

"The Group believes that it is important to understand the impact of the Borough's demography and to engage with residents at an early stage, before strategic and policy decisions are taken. There is a risk that a perception may build that development and implementation of the CEAP is being carried out by a relatively small number of Members and officers."

The Group felt that it was important to make a decision on the most appropriate deliberative process and implement it as quickly as possible. The value of public engagement was to inform decision making at the start of the process. The longer the delay the greater the risk that the outcomes would not be incorporated into the key priorities in the Action Plan.

Due to the timescales involved, the Group suggested that the evaluation of potential deliberative processes be submitted to the Overview and Scrutiny Management Committee for evaluation and scrutiny prior to implementation.

7.4 Recommendations

- i) Adopt behaviour change science as a golden thread throughout the whole CEAP, rather than a stand-alone action, to ensure that for every action, consideration is given as to how we will help enable people to adapt.
- ii) Recognise that lack of familiarity with new technology is a significant barrier to take-up and tackle this through short-term displays in empty shops (or pop-up facilities) in town centres and community locations. The displays to include workshops and demonstrations. Recruit, develop and support community champions to engage with local communities.
- iii) Submit the findings of the evaluation of potential deliberative processes to the Overview and Scrutiny Management Committee for evaluation and scrutiny prior to implementation. Publish updates and incorporate findings from the chosen deliberative process into the annual CEAP update.

Section 8 – Progress against Other Priorities

8.1 Update

As set out above, the Group's 2021 report focuses on four key priority areas: transport, homes, renewable energy and behaviour change. During the Group's discussions additional evidence was provide on other priority areas. This information is summarised below along with some additional recommendations.

- WBC properties - 116 WBC properties had been identified with an annual energy spend of £2.3m. Energy efficiency schemes were being implemented including low energy lighting, loft insulation, double glazing, boiler upgrades, solar panels and improved building controls.
- Greening the Environment – grant of £300k from the Woodland Trust to support the tree planting programme. Project officer appointed to support the programme and liaise with Town and Parish Councils.
- Schools - £900k of Salix funding had been confirmed, delivering improvements such as LED lighting, insulation, control upgrades, heating upgrades and renewable energy generation technologies.
- Support for Climate Committees in 10 schools, a second Youth Climate Conference and a decarbonisation toolkit for schools.
- Carbon Positive – the Dinton Activity Centre will be the first carbon positive building in the Borough. The centre featured as a case study in an online conference hosted by the Built Environment Network in November 2020.
- Funding – development of a Green Bond to fund Climate Emergency actions – increase funding for CEAP priorities and enable residents contribute to the delivery of the CEAP.
- Covid-19 Recovery Plan – includes Climate Emergency as one of the eight pillars in the plan.
- LEP commissioned review of the Climate Emergency Action Plans of the six Berkshire unitary authorities.

8.2 Evidence and Analysis

The Group welcomed the progress in improving energy efficiency for WBC properties across the Borough. It was important that the Council led from the front on this issue, even though its carbon footprint amounted to less than 2% of the Borough's footprint.

The Group welcomed the proposal establish a Green Bond with the aim of funding Climate Emergency actions. We noted that West Berkshire Council had launched the first local government Green Bond in 2020 with the aim of raising £1m from residents to fund solar panels, sustainable transport and invest in projects to protect and enhance the natural environment. The West Berkshire Bond had attracted 640 investors who each invested an average of £1,500. 20% of the investors were West Berkshire residents.

We noted the importance of ensuring that key policies and plans (e.g. Local Plan and LTP4) were aligned with the CEAP. It was also crucial that services were working together with a clear understanding of the CEAP. Consequently, we concluded that Climate Emergency training should be provided for Members, officers and contractors. We were not aware of any current plans for Member training on Climate Emergency.

We recognised the importance of maximising funding opportunities to support the CEAP. Funding programmes accessed to date are set out at Annex D. Improved Green finance know-how would be useful in maximising future funding opportunities.

8.3 Recommendations

- i) Provide regular training for Members, staff and partners to enable them to support the targets in the CEAP. Ensure integration between departments and that Climate Emergency awareness is embedded into every service and key decision.
- ii) As part of the annual service/budget planning process, carry out reviews to ensure that policy, spending and functions align with the CEAP, identify any contradictions, then implement mitigation plans.
- iii) Develop project and financial appraisal systems that include CO₂ emissions and climate impacts.
- iv) Review the following CEAP projections and targets:
 - the projected future reduction in CO₂ from national initiatives (currently based on carrying forward historic rates of CO₂ reduction) to reflect projections from the Department for Business, Energy and Industrial Strategy (BEIS);
 - the CO₂ savings associated with CEAP target 17 (20% of all homes to be retrofitted by 2030) as the funding for this work is uncertain;
 - the relationship between CEAP targets 2, 3 and 4 – reduction in private car and van use (targets 3 and 4) will require far more than the proposed doubling of public transport use (target 2).

Section 9 - Conclusions and Next Steps

- 9.1 In our 2020 report, the Group concluded that the CEAP was an ambitious document which was in line with best practice across the sector. We also recommended a number of changes which, we believed, would make the Action Plan more robust and credible. Since then, the Council has committed significant resources to successfully tackling the Covid-19 pandemic. The pandemic has had a number of impacts on the priorities in the CEAP, from greater levels of home working, to more active travel and a significant reduction in public transport usage. As communities begin to reopen it will be interesting to see how these impacts unwind and how they impact on the CEAP.
- 9.2 In spite of the huge focus on tackling the pandemic, we noted that the Council had continued to make progress on the CEAP. We congratulate officers and Members for the progress made. In our 2020 report we noted the carbon gap in the CEAP of 72 ktCO₂e. Our discussions indicate that this gap may have increased in 2021. We await the CEAP update in July 2021 to assess the current size of the gap. For the reasons set out in the report, we believe that the 2022 CEAP update will be able to provide a clearer picture of the national strategy to achieve Net Zero and the support and funding available to local authorities. Progress on key Council plans, such as the Local Plan and LTP4) will also provide more clarity on the deliverability of the CEAP.
- 9.3 In light of the Government's target of achieving Net Zero by 2050, we sought views on the feasibility of the Council's 2030 target. It was suggested that achieving net zero by 2030 was the safest way to restrict global warming to the Paris target of 1.5%. However, 2030 was only eight years away and the task facing us was enormous. Net zero by 2030 was technically feasible but was unlikely to be politically or financially feasible. Instead, we should focus on making significant progress by the mid-2030s. By then we would be riding the innovation curve which would enable new technologies to drive progress towards the achievement of Net Zero.
- 9.4 The Task and Finish Group report will be submitted to the Overview and Scrutiny Management Committee on 16 June 2021, for discussion and approval. Subject to any amendments it will then be submitted to the Council's Executive for consideration of the Group's recommendations.
- 9.5 We hope that the report helps to demonstrate the value of the Scrutiny process in providing constructive challenge and support in developing the Council's Climate Emergency Action Plan. The Council's Constitution requires the Executive to agree which recommendations (if any) are acceptable (with a timeframe for implementation) and which recommendations are not (with reasons).
- 9.6 The Overview and Scrutiny Management Committee will monitor the implementation of the Group's recommendations. The Committee may decide to scrutinise further specific aspects of the CEAP in 2022.

Climate Emergency Task and Finish Group Recommendations – 2020

1. That the Council work with schools, businesses and community stakeholders to develop a Vision for a Net Zero Borough, with indicators and milestones to demonstrate progress.

Progress – ongoing. Aim to complete in 2021/22.

2. That the annual progress report on the Climate Emergency Action Plan include recognition of the levels of non-CO2 greenhouse gas emissions in the Borough and progress achieved in delivering reductions through the sequestration measures in place.

Progress – completed. To be included in the 2021 CEAP update.

3. That implementation of the Climate Emergency Action Plan be monitored to ensure that actions are not detrimental to other environmental priorities such as improved air quality.

Progress – completed. To be included in the 2021 CEAP update,

4. That the Council consider the impact of climate change on all its actions with key decision reports to include a section on Climate Emergency to ensure that the issue is mainstreamed into the decision making process. This must include a transparent, calculated carbon impact assessment of the proposal rather than a generic comment such as “in line with the Climate Emergency Action Plan”.

Progress – partially completed. Executive reports contain a section on Climate Emergency impacts but do not include carbon impact assessment assessments.

5. That, as part of the 2021 progress report on the Action Plan, the Council commission an independent carbon accounting audit of the Action Plan’s targets, methodology and underlying assumptions.

Progress – ongoing. Specialist in carbon and climate change to support the process. Independent audit of CEAP to be commissioned by the Council’s Audit Team. LEP commissioned review of each of the Berkshire Unitary action plans.

6. That the six monthly update of the Action Plan, in January 2021, address the gaps and errors in the current version.

Progress – six-monthly report submitted to the Task and Finish Group.

7. That the annual update report on the Action Plan include estimates of consumption emissions, progress of measures aimed at increasing awareness

of these emissions and individual responsibilities such as the promotion of local sustainable sourcing options for food, goods and services.

Progress – ongoing. Officers are developing an engagement strategy to consider the immediate and long-term actions required. Communications plan will highlight the importance of addressing consumption emissions.

8. That future iterations of the Action Plan set out SMART targets to reduce car usage, thereby tackling traffic congestion, and demonstrate how the Council is working with neighbouring authorities, the Local Enterprise Partnership, bus and rail operators and other community stakeholders to deliver transport solutions and a transport network and infrastructure which focuses on active travel and public transport.

Progress – ongoing. LTP4 in development. Low Carbon Transport Strategy produced. Government published Bus Back Better in 2020 and will publish the Decarbonising Transport Plan shortly.

9. That a further report be submitted to the Overview and Scrutiny Management Committee, setting out the business case for the Green Bank Project, including an assessment of the impact of the Covid-19 pandemic on the viability of the project.

Progress – not completed. Green Bank Project not proceeding at this stage.

10. That the Overview and Scrutiny Management Committee scrutinise the impact of the Local Plan Update on the Climate Emergency as part of its review of the new Local Plan later in 2020/21.

Progress – ongoing. Local Plan Update to be considered by the Overview and Scrutiny Management Committee in 2021/22. Specialist consultancy advice on climate change to inform the new Local Plan.

11. That the Council establish and publish details of the amount of land available for sequestration and renewable energy projects by surveying the Borough, in conjunction with Town and Parish Councils, to identify opportunities for tree planting, solar farms and other green projects.

Progress – ongoing. No work carried out yet on land availability. Discussions with Town and Parish Councils on range of Climate Emergency issues continuing.

12. That the annual update report on the Action Plan:

- Emphasise the relative significance of WBC's organisational footprint in any discussion of WBC's estate and facilities;
- Provide details of progress on the Council's journey to becoming a Net Zero organisation, including timelines for key activities and progress on investment, procurement and supply chains;

- Outline the measures taken to protect individuals, families and groups most at risk from the impact of climate change and provide details of the outcomes;
- Include a risk register, setting out the major risks (including the impact of third party action and non-action);
- Include an assessment methodology which measures the likelihood (as a %) of success or failure for each item.

Progress – ongoing. Data collected will inform the 2021 CEAP update.

- 13 That, in light of the increasing number and complexity of initiatives aimed at tackling the Climate Emergency, consideration be given to strengthening the in-house team, especially in relation to “number crunching” of carbon reductions and project costs.

Progress – completed. Two additional staff recruited in 2021.

- 14 That the Action Plan recognises the important role played by Towns and Parishes across the Borough in moving to Net Zero and commits to working in meaningful partnership to develop and support local initiatives which turn new ideas into positive action on the ground.

Progress – completed. Meetings held with Town and Parish Council Members and Clerks. WBC hosting drop-in sessions for Clerks.

Sixth Carbon Budget – CCC Recommendations to the UK Government

Policy

- 1 Develop a Net Zero Delivery Framework which aligns and clarifies national, sub-national, regional and local delivery roles and areas for collaboration as part of the Government's Net Zero Strategy.
- 2 Consider introducing a Duty on local authorities to act in accordance with a Net Zero by delivering climate action plans within a common reporting system – any new duty should be fully funded.
- 3 Make policies consistent with delivering Net Zero by reviewing evidence provided in this and other reports, and in requests from local authorities – e.g. planning policies, financial appraisal and managing public transport as a whole system.
- 4 Support area wide planning for regional delivery of energy, transport systems and building retrofit – this should support governance and delivery stakeholders and a strong process for public engagement.

Funding and Support

- 5 Increase funding and support for local authorities to develop skills and capacity to plan and implement climate action across both emissions reduction and climate adaptation – embedding climate skills in all roles.
- 6 Provide coherent cross-departmental support on climate action, building on positive models of support to local authorities – support local authority staff to deliver on buildings and transport decarbonisation in particular.
- 7 Introduce significant, non-competitive long term investment in retrofit, heat decarbonisation infrastructure and public transport. Ensure that the National Infrastructure Bank finances Net Zero schemes and the UK Shared Prosperity Fund provides long-term funding through development funds to kick start infrastructure investments at scale which can be refinanced at a later date.
- 8 Align public spending with Net Zero – review the Government's Green Book Policy and business case tools to incorporate a stronger focus on carbon reduction. Funding for LEPs should strongly align with the Net Zero agenda.
- 9 Ensure that funds for pilot and innovation projects include budget for evaluation and the longer-term consideration of replication and scaling up viable models – the CCC's scenarios identify large gaps in national policy for buildings and transport decarbonisation.

Communication and Engagement

- 10 Deliver a national climate communications and public engagement programme that can be tailored at a local level – funding to local authorities and their partners to deliver such a programme will enable public engagement and support local delivery of national objectives.

Sixth Carbon Budget – CCC Recommendations to Local Authorities

- 1** Develop Net Zero or Climate Action Plans with delivery projects that prepare the area to make the transition to net zero choices from 2030 and align with climate adaptation, biodiversity net gain and other key local strategies.
- 2** Monitor and report on progress in reducing emissions to local communities and government – where possible, share standardised data, benchmark and provide clear evidence to inform policy.
- 3** Conduct Policy and Service reviews to align policy, spending and functions with Net Zero – identify contradictions, then put in place mitigation plans to align them. Develop project and financial appraisal systems that include emissions and climate impacts.
- 4** Implement training and capacity building to deliver Net Zero within the local authority and with key suppliers and contractors – climate change should be central to Elected Member and Director training.
- 5** Develop capacity to innovate and scale up – Action Plans help to identify future delivery projects for future funding availability – see recommendation to Government on longer term funding windows and flexibility to blend funding streams and recommendation for increased funding for local authorities to act on climate change.
- 6** Collaborate with neighbouring authorities and other key delivery bodies on strategies and plans which ensure systems-wide transformation is coherent and supportive of Net Zero – this should include energy, transport, housing, infrastructure and skills.
- 7** Develop Green Finance know-how – private sector investment and Green Finance will be required to deliver the scale of change needed. Local authority legal and finance teams and project delivery teams will need to develop their knowledge of the finance industry.
- 8** Communicate and engage with local communities, businesses and partners on Net Zero so that a mandate for action is maintained – assess the skills needed locally to deliver the transition, developing green and low-carbon jobs and supporting a resilient recovery.
- 9** Local Authority Pension Funds should disclose their approach to assessing and managing climate risks and should consider investing in Net Zero aligned schemes within their legal duties.

WBC Capital Programme 2021/22 to 2023/24 - Climate Emergency

Project Name	Project Description from the Medium Term Financial Plan	2021/22 £'000	2022/23 £'000	2023/24 £'000
Clean Energy Generation				
Solar Farms (additional projects)	Renewable energy infrastructure feeding into a battery or grid arrangement – either selling the energy or using against our own consumption	6,000	6,000	6,000
Renewable Energy Infrastructure Projects	Ditto	6,500	8,000	0
CO2 Reduction				
Managing Congestion	Improvement to traffic flow and reducing incidents on the network	5,000	5,000	7,000
Energy Reduction Projects	Energy efficiency projects including LED lighting, cavity wall and loft insulation, boiler controls, etc.	1,500	1,500	1,500
Electric Vehicle Chare Points	Installation of electric vehicle (EV) charge points	300	600	1,200
Support Services Energy Reduction Schemes	Energy reduction schemes e.g. lighting, insulation, etc.	0	500	250
Waste and Recycling Schemes	Purchase of waste receptacles to enable the Borough to enhance waste and recycling	89	89	89
Food Waste Collection	To provide food waste containers	20	20	20
Biodiversity Capital Projects	Rolling programme aimed at enhancing the biodiversity value of various sites and assets	25	0	0
Air Quality Monitoring PM2.5	Air quality monitoring	20	0	0
Alternative Transport				
Feasibility and first stage of new non-highway crossing	New foot and cycle structures in the Borough	0	1,500	1,500
Local Cycling and Walking Infrastructure Plans	Improvements to walking and cycling in the Borough	300	1,200	1,200
Greenways	Network of commuting and leisure routes for pedestrians and cyclists	874	742	1,000
Wokingham Borough Cycle Network	Investment in cycle networks in the Borough	500	1,000	1,000
Public Rights of Way Network	Investment in public rights of way and other non-motorised routes	737	737	737
A327 Cycleway	Investment in cycle networks in the Borough	250	350	0
Byways	Foot/bridal/cycleways enhancement in the Borough	100	0	0
Bus Stop Infrastructure– North Arborfield SDL	Transport infrastructure enhancement – SDL Bus Strategy	0	0	30
Climate Emergency Total		22,215	27,238	21,526

WBC Capital Programme 2021/22 to 2023/24 – New Roads

Project Name	Project Description from the Medium Term Financial Plan	2021/22 £'000	2022/23 £'000	2023/24 £'000
Scape – Road Infrastructure (distribution roads, etc.) initial costs	Investment in future road building/enhancement across WBC road network (including new relief roads)	71,287	35,000	2,200
Nine Mile Ride Extension	Ditto	6,419	3,310	0
Shinfield Eastern Relief Road	Residual payments to Reading University for the completed scheme	3,491	2,751	1,308
California Crossroads	Investment in future road building/enhancement across the WBC road network (including new relief roads)	4,447	0	350
Completed Road Schemes Retention	Completed road scheme retention	0	62	64
	New Roads Total	85,644	41,123	3,922

Climate Emergency Action Plan - Funding Sources

Scheme	Purpose	Eligible	Outcome
Green Homes Grant Local Authority Delivery (LAD) scheme 1a, direct application - August 2020	Household energy efficiency retrofit	Low income households, social housing, private rented and owner occupier. Average spend £10k per property. Combined maximum household income of £30k	Joined bid for £900k with Bracknell Forest. Successful
LAD 1b – December 2020	Household energy efficiency retrofit	Ditto	Joined bid for £1.2m with Bracknell Forest Unsuccessful
Green Homes Grant LAD2 – South East Energy Hub March 2021	Household energy efficiency retrofit	Ditto	33 properties. External wall insulation – aim to assist 5 properties with underfloor heating £80k secured
Green Homes Grant Voucher Scheme - Sept2020 - March 2021	Household energy efficiency retrofit works – must be completed by March 2021	Open for direct application by householders and landlords	Comms campaign to inform residents September 2020 - March 2021
Woodland Trust Funding	To help deliver the goals of Woodland Trust's Emergency Tree Plan	This is a grant and agreement for reimbursement for the purchase and installation of trees to support the delivery of the 250K Trees project	£300k secured
Public Sector Decarbonisation Fund – Salix Dec 2020	Focus on the decarbonisation of heat, insulation, solar PV & supporting economic recovery	Available for capital energy efficiency and heat decarbonisation projects within public sector non-domestic buildings. All public sector orgs including universities, academies Expect shovel ready projects	£390,396 awarded for energy efficiency improvement works across a number of Council assets
DEFRA Air quality grant 2020 to 2021 – March 2021	Develop solutions over the longer term by increasing awareness and encouraging behaviour change	The council will work in partnership with the PPP on anti-idling projects, alongside a focus on the impacts of pollution around schools, encouraging a behavioural change	£259k secured
DEFRA Air quality grant – March 2021	Grant extended – eco-travel officer	The purpose of the grant is to provide support to LAs to develop or implement measures that deliver air quality benefits, developing solutions to increase awareness and encourage positive behavioural changes	£125k secured

Active Travel Fund - Department for Transport	Improvements to cycling and walking facilities	https://wokinghamactivetravelschemes	£577k secured
Office for Zero Emission Vehicles (OZEV) - April 2021 Funding TBC	Electric vehicle homecharge, workplace charging and on-street residential chargepoint scheme	The On-street Residential Chargepoint Scheme (ORCS) provides grant funding for local authorities towards the cost of installing on-street residential chargepoints for plug-in electric vehicles	Released May 2021
Zero Emission Bus Regional Areas (ZEBRA) Fund - March 2021 Funding TBC	Zero Emission Bus Regional Areas (ZEBRA) 2021-2022 scheme - place based scheme that will allow areas, led by local transport authorities, working in partnership with bus operators or as consortia with more stakeholders, to bid for funding to purchase ZEBs and the infrastructure needed to support them	Funding available to local transport authorities in England, outside London, to purchase Zero Emission Buses (ZEBs) and the infrastructure needed to support them	Released May 2021
Bus Strategy £100K - March 2021	By October 2021 all bus operators need to publish a Bus Services Improvement Plan and deliver this through the Bus Services Act 2017's Enhanced Partnership model	Bus operators partnership to produce bus service improvement plan by October 2021. This needs to be developed by LTAs in collaboration with local bus operators, community transport bodies and local businesses, services and people	Released May 2021
Capability Fund £94K revenue May 2021	The Government will fund and work with local authorities across the country to help make it easier for people to use bikes to get around	LFT revenue funding to promote cycling & walking - This fund will support an infrastructure officer to deliver the LCWIP plan for October 2021	Released May 2021

References:

- Sixth Carbon Budget – Climate Change Committee (CCC), 2020.
- Local Authorities and the Sixth Carbon Budget – CCC, 2020.
- Sixth Carbon Budget – Surface Transport - CCC, 2020.
- Sixth Carbon Budget – Buildings – CCC, 2020.
- Achieving Net Zero – National Audit Office, 2021.
- Ten Point Plan for a Green Industrial Revolution – HM Government, 2020.
- Reducing Carbon Emissions from Cars – National Audit Office, 2021.
- Decarbonising Transport Plan – Setting the Challenge – Dept. for Transport, 2020.
- Bus Back Better – Department for Transport, 2020.
- Improving Local Bus Services in England – National Audit Office, 2020.
- Gear Change: A Bold Vision for Cycling and Walking – Dept. for Transport, 2020.
- LTN1/20 Cycle Infrastructure Design – Dept. for Transport, 2020.
- The Carbon Impact of the National Roads Programme – Lynn Sloman and Lisa Hopkinson, 2020.
- Great British Railways: The Williams-Shapps Plan for Rail – Department for Transport, 2021.
- UK Housing: Fit for the Future – Climate Change Committee, 2019.
- Reduce, Replace, Repair – James Hand and Richard Carmichael, 2021.
- Behaviour Change, Public Engagement and Net Zero – Richard Carmichael, 2019.
- Changing Our Ways? Behaviour Change and the Climate Crisis – Cambridge Sustainability Commission, 2021.
- Individuals and Climate Change: Facilitating Behaviour Change for Societal Transformation – Climate Institute, 2020.
- How to Run a Citizens' Assembly – Dept. for Digital, Culture and Sport, 2020.
- UK Citizens' Assembly – Report and Recommendations, 2020.