Wiltshire Council

Overview and Scrutiny Management Committee

29 September 2020

Report of the Global Warming & Climate Emergency Task Group (Part One)

Purpose of the report

1. To present the initial findings and recommendations of the task group, relating to its Energy and Transport & Air quality workstreams, for endorsement by the committee and referral to the relevant Cabinet Members for response.

2. NB. This report is presented for endorsement by OS Management Committee because, following the Covid-19 pandemic, Environment Select Committee is not currently holding formal meetings.

Background

3. The Earth's average surface air temperature has increased by approximately 1°C (1.8°F) since 1900. Over half of that increase has occurred since the mid-1970s[i]. There is now a clear, international scientific consensus that humans are changing the Earth's climate.

4. The International Panel on Climate Change's (IPCC) *Special Report on Global Warming of 1.5°C* (October 2018) concludes that we have until 2030 to act to avoid the worst impacts of climate change. The report concludes that to reduce global warming and limit its effects, CO^2 emissions must be reduced from the current 6.5 tonnes per person per year, to less than 2.0 tonnes by 2030[ii].

5. Local authorities around the world have declared a climate emergency and committed to reducing carbon emissions in their local areas. In February 2019, Wiltshire Council acknowledged the climate emergency and pledged to reduce carbon emissions in Wiltshire to net zero[iii] by 2030. The Council also invited the Environment Select Committee to establish a task group to develop recommendations and a plan for making Wiltshire carbon neutral by 2030. The Environment Select Committee established the task group in April 2019 and the Global Warning & Climate Emergency Task Group began work in June 2019.

6. The task group's terms of reference align with the Wiltshire Council Business Plan 2017-27 priorities of 'growing the economy', 'strong communities' and 'protecting the most vulnerable'.

7. The broad remit of the task group has required investigating a technically complex and inter-related set of themes. It has taken time to undertake a detailed investigation and analysis of the evidence, deliberate and form

recommendations. The task group recognises the need to act quickly and has therefore brought forward those recommendations completed, mindful of the areas that remain to be addressed.

8. This report covers the task group's workstreams of Energy and Transport & Air quality. Its other workstreams, set out in the terms of reference below, will be addressed in future reports.

Terms of reference

9. The task group's terms of reference were endorsed by the Environment Select Committee on 3 September 2019:

    1. Develop recommendations and a plan seek to achieve the target of making the county of Wiltshire, excluding the area administered by Swindon Borough Council, net carbon neutral by 2030;

    2. The task group's work will include, but not be limited to, performing investigations into the following areas:
        a) Renewable Energy generation, energy use and efficiency
        b) Planning
        c) Transport & Air Quality
        d) Waste
        e) Land Use
        f) Business & Industry

    3. Undertake a carbon/renewables audit;

    4. Agree parameters with the relevant Cabinet Member and Portfolio Holder that represent the council impact on the climate that can be accurately reported to council on a regular basis.

Membership

10. The task group comprised the following membership:

    Cllr Allison Bucknell (until October 2019)
    Cllr Clare Cape
    Cllr Tony Deane
    Cllr Sarah Gibson
    Cllr Tony Jackson (from October 2019)
    Cllr Jacqui Lay
    Cllr Brian Mathew
    Cllr Nick Murry
    Cllr Fred Westmoreland
    Cllr Graham Wright (Chairman)

Methodology

11. The review was undertaken primarily though desktop research and discussions with witnesses, including local authority officers, Executive members, professionals in relevant industries, interest/campaign groups, national bodies and other stakeholders.

12. Approximately half of the task group's evidence has been collected from interviews with organisations developing or delivering solutions 'on the ground'. The task group has sought to gather an appropriate range of viewpoints.

13. Alongside receiving verbal evidence, the task group considered baseline evidence, best practice and policy from other UK local authorities, trade bodies, thinktanks, commercial and not-for-profit organisations.

14. The task group met on 34 occasions between June 2019 and September 2020.

15. The task group is grateful to the following witnesses for contributing to the task group's review thus far:

Individual	**Job title / organisation**
Cllr Richard Clewer	Cabinet Member for Corporate Services, Heritage, Arts & Tourism, Housing and Communities
Cllr Ashley O'Neill	Portfolio Holder for Climate Change
Cllr Bridget Wayman	Cabinet Member for Highways, Transport and Waste
Alistair Cunningham OBE	(former) Executive Director, Wiltshire Council
Ian Gillard	Programme Lead – Energy & Climate Change, Wiltshire Council
Nick Darbyshire	Head of Strategic Asset & Facilities Management, Wiltshire Council
Allan Creedy	Head of Sustainable Transport, Wiltshire Council
Martin Aldam	Senior Transport Planner, Wiltshire Council
John Carter	Head of Public Protections, Wiltshire Council
Gary Tomsett	Public Protection Team Leader, Wiltshire Council
Robert Murphy	Principal Transport and Development Manager, Wiltshire Council
Laura Young	Residential Development Manager, Wiltshire Council
Simon Hendey	Director for Housing and Commercial Development, Wiltshire Council
Mike Dawson	Head of Estate and Development, Wiltshire Council
Rachel Kent	Public Health Consultant, Wiltshire Council
Nicole Smith	Head of Housing Operations, Wiltshire Council

Sam Fox	Director of Economic Development & Planning, Wiltshire Council
Jason Salter	Head of Passenger Transport, Wiltshire Council
Ariane Crampton	Head of Carbon Reduction, Wiltshire Council
Rachel Coxcoon	Programme Director, Climate Emergency Strategic Support, Centre for Sustainable Energy (CSE)
Ian Preston	Head of Household Energy Services, Centre for Sustainable Energy (CSE)
Dan Stone	Project Manager, Centre for Sustainable Energy (CSE)
Peter Capener	CEO, Bath & West Community Energy
Lesley Bennett	Chair, Wiltshire Wildlife Community Energy
Alison Craig	Founder member and Development Manager, Salisbury Community Energy
Steve Forster	Senior Consultant, Engenie Ltd
Chas Warlow	EV Charging Account Manager, JoJu Solar
Hugo House	Development Director, Spring Energy
Harry Lopes	CEO Eden Renewables
Sophy Fearnley-Whittingstall	SFW Communications
Bill Jarvis	Wiltshire Climate Alliance / Extinction Rebellion (XR)
Christian Lange	Wiltshire Climate Alliance
Eva McHugh	Wiltshire Climate Alliance
Andrew Nicholson	Wiltshire Climate Alliance
Jessica Thimbleby	Wiltshire Climate Alliance
Adrian Temple Brown	Extinction Rebellion
Jane Laurie	Extinction Rebellion
Shirley McCarthy	Wiltshire Climate Alliance
Brig Oubridge	Wiltshire Climate Alliance / Extinction Rebellion
Jeremy While	Extinction Rebellion
Maddy Thacker	Sustrans
Andy Cook	Chippenham Wheelers
Dave Knight	Royal Wootton Bassett environment group
Rachel Chambers	Royal Wootton Bassett environment group
Cllr Neville Farmer	Corsham Town Council
Cllr Gillian Sanders	Corsham Town Council
Adrian Hampton	Head of Highway Operations, Wiltshire Council

Evidence

16. Further evidence is listed in Appendices 1-2; references to specific sources are included in the endnotes.

Energy

Net zero carbon buildings: Existing Council housing

17. There are several examples of emerging good practice in building net zero carbon homes. For example, Exeter City Council is piloting how to turn existing council homes into net-zero energy properties by upgrading six properties with energy measures including a ground source heat pump system, insulated roof and wall panels, and photovoltaic roof panels with battery storage facility.

18. BREEAM (Building Research Establishment's Environmental Assessment Method) is the world's leading and most widely used environmental assessment method for buildings. The aim of the technical standard is to ensure best environmental practice is incorporated into building planning, design, construction and operation.

19. According to the Green Alliance, the UK has the least energy efficient housing stock in Europe. This exacerbates fuel poverty and means that heating our homes is also a major source of carbon emissions. A 'whole house' model of retrofit can create a net zero energy home in one step using new technology. It has the potential to almost eliminate the carbon emissions of 41% of UK housing stock, while providing warm, comfortable homes for many more people. The report *Reinventing Retrofit: How to scale up home energy efficiency in the UK* (Green Alliance 2019) suggests a 'whole house' retrofit[iv] programme in the UK.

20. The Government has funded a number of innovative pilot projects such as three 'whole house' retrofit pilots (June 2020) with the London Borough of Sutton, Nottingham City Council and Cornwall

21. Nottingham City Homes, which manages and maintains council housing stock, has upgraded 10 homes using Energiesprong; an approach to improving buildings' energy efficiency pioneered in the Netherlands. Funding from the Government will allow a further rollout to 172 'hard to heat' homes across two sites.

Net zero carbon buildings: Council-built housing (incl. Stone Circle and Stone Circle Development Company)

22. Applying standards and quality marks can improve conservation of fuel and power, protect and enhance the environment and promote sustainable development.

23. The UK Green Building Council (UKGBC) *Net Zero Carbon: A Framework Definition* is a framework for net zero carbon buildings. It provides the building industry with clarity on how to achieve net zero carbon in construction and importantly also in operation.

24. The BRE Home Quality Mark helps house builders to demonstrate the high quality of their homes and to differentiate them in the marketplace. At the same time, it gives householders the confidence that their new homes to buy or rent, are well-designed and built, and cost-effective to run.

Net zero carbon buildings: Private sector

25. Under the Energy Company Obligation (ECO) Help to Heat, energy suppliers are able to install energy saving measures in premises that have been declared eligible by local authorities. Local authorities participating in the ECO scheme have to ensure these are households in private tenure living either in fuel poverty or on a low income and who are particularly vulnerable to the effects of living in the cold. In addition, some households not considered fuel-poor can access solid wall insulation projects, as long as a proportion of the households in the project are in fuel poverty or living in cold properties.

26. The Government has awarded £4.7m to six energy efficiency improvements demonstration projects. This aims to mirror approaches taken in other countries to stimulate the 'able-to-pay' market by focusing on addressing non-financial barriers, building skills in the supply chain sector, and providing a joined up/ one-stop shop service for consumers.

27. A limiting factor in improving the energy efficiency of existing private housing stock is training or sourcing enough tradespeople with the appropriate expertise to meet demand[v]. A number of local authorities directly run trusted trader schemes (for example, Derbyshire County Council) or approved lists of contractors (for example, Ealing Council). These can reassure consumers that they will receive a good service at a fair price.

28. Community buying schemes can help make adaptions more affordable and take some of the aggravation out of purchasing products. Zero Chippenham has a scheme for fitting solar PV panels to domestic properties.

29. 'Revolving loans' – allowing a borrower to draw down, repay and re-draw loans on the available funds during the term of the loan - have become popular for financing energy efficiency projects whose returns often span several years. In addition, they benefit programmes that require significant planning and implementation before returns are realised, which is the case with many energy efficiency projects. The report, *Delivering and Funding House Retrofit: A Review of Community Models* (Arup), sets out a number of case studies of such schemes in Europe and north America.

Renewable energy generation

30. Renewable energy organisations[vi] have considerable potential to increase large-scale (ground mounted) solar energy generation in Wiltshire. This could be 70MW+ of new, renewable energy with an annual carbon saving of 16,000+ tonnes CO2e. The council owns (at least) five sites where significant solar generation is practically and commercially viable.[vii]

31. Local authorities are investing in renewable energy generation schemes. Richard Sansom, Head of Business Development at Swindon Borough Council-owned Public Power Solutions, has said: *"A relatively small but growing number of local authorities are looking beyond commercial property to invest in renewable energy. Investment of this type is becoming increasingly popular as a means to optimise existing assets, generate new income streams, meet climate targets with clean energy, and support a low carbon economy."*

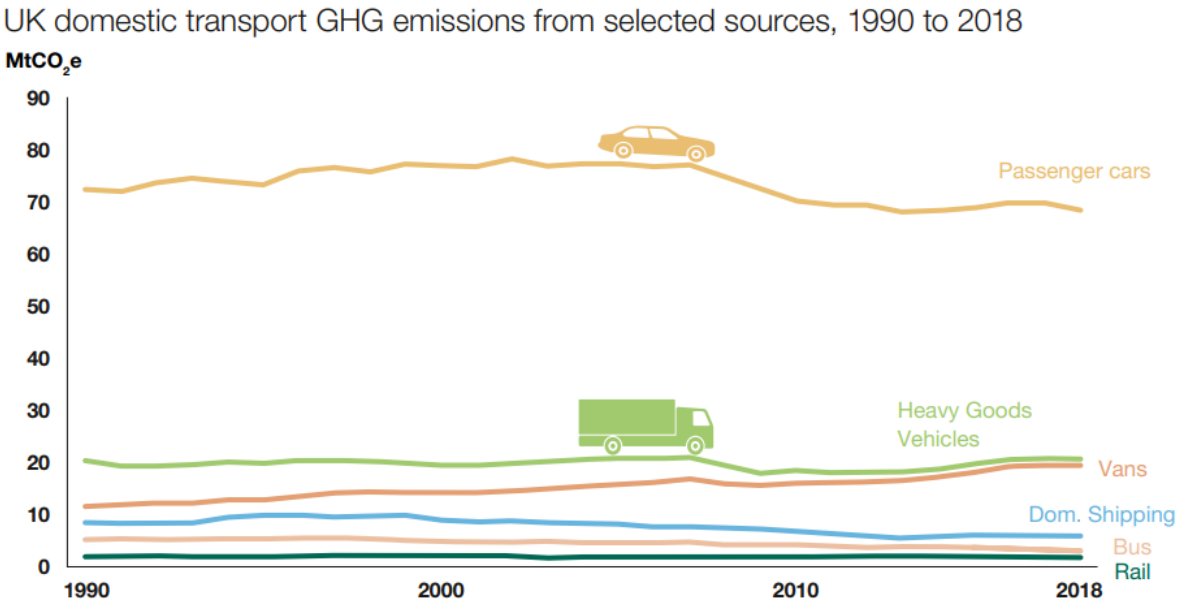
Community-led renewable energy generation

32. Community renewable energy groups are willing to work positively with the council particularly supporting solar PV panels in schools and integrating with EV charging infrastructure. However, further benefit could be delivered if the council developed a strategy and looked to actively support community energy and de-risk some community projects through investment or partnership[viii].

Transport & air quality

33. Transport is currently the largest source of UK greenhouse gas emissions (23% of the total) (see figure 1 below). Emissions from transport overall have increased by 6% since 2013 and are now 4% higher than in 1990[ix]. Transport is the largest source of total emissions in 49% of local authority areas[x]. Wiltshire's highest emissions sources have been reported as road transport and buildings.

Figure 1: UK domestic transport greenhouse gas (GHG) emissions from select sources 1990-2018



34. The Department for Transport has laid out the following key objectives for its forthcoming Decarbonisation Plan[xi]:

- Accelerating modal shift to public and active transport;
- Decarbonisation of road vehicles;
- Decarbonising how we get our goods;
- Place-based solutions;
- UK as a hub for green transport technology and innovation;
- Reducing carbon in a global economy.

Electric vehicles (EVs) and hydrogen fuel cell electric vehicles (FCEVs)

35. Improved fuel efficiency of road vehicles has been more than offset by growth in traffic and road building schemes which perpetuate the situation, as evidenced by reports[xii] [xiii] showing how traffic increases in the vicinity of new road schemes. The volume of vehicles on the road has adverse economic impacts as a result of congestion and premature deaths due to air pollution[xiv].

36. Less than 0.5% of the miles travelled in Britain are currently driven in low-carbon vehicles (e.g. electric or plug-in hybrid cars). The Government is requiring all new car and vans sales to be battery electric by 2035 and the Committee on Climate Change has recommended this be changed to 2032, ideally 2030 (most European countries are aiming for 2030, with countries such as Norway aiming for 2021).

37. According to the Committee on Climate Change, this will require 3,500 rapid and ultra-rapid chargers near motorways and 210,000 public chargers in towns and cities on top of the 21,000 public chargers of all speeds as at the end of 2018. More than 40% of UK residents do not have access to off-street parking or the ability to install a home charger (set to increase over the coming decade) and 80% of charging takes place at home.

38. Cardiff City Council is an example of a local authority that plans to significantly increase the number of publicly available EV charging points by 2025 in order to incentivise drivers to stop using petrol or diesel.

39. Heavy-good vehicles (HGV) transport will be more difficult to de-carbonise. It may mainly be achieved by switching HGV vehicles to hydrogen fuel cell powered electric, although electric buses, refuse vehicles and shorter distance delivery vehicles are already appearing around the UK (for example, Aberdeen City Council has introduced hydrogen powered refuse collection vehicles). The lack of a network of hydrogen filling stations across the UK is the biggest obstacle to mass adoption of hydrogen (less so for buses and regular route vehicles that have access to depots). It is estimated that a hydrogen-based switchover could require 800 refuelling stations to be built by 2050 and electrification would need 90,000 depot-based chargers for overnight charging[xv]. Hydrogen also becomes more feasible with larger fleets that allow for investment in fuelling infrastructure.

40. Switching the UK's diesel-powered refuse collection vehicles (RCVs) to electric trucks could reduce CO^2 emissions by 290,000 tonnes each year and local authorities are already switching. Fife Council has awarded a £1.5m contract to Dunfermline-based Heil Farid European Company to supply nine RCVs, two of

which will be converted to run on hydrogen and diesel. This dual-fuel technology means hydrogen power can be introduced into the vehicles without incurring the high costs of a fuel cell that runs purely on hydrogen.

41. Other local authorities are replacing their fleet cars. Cardiff City Council is switching all council fleet cars and light goods vehicles (LGVs) to zero-emission capable vehicles by 2025 and aiming to deploy zero-emission capable heavy goods vehicles (HGVs) as soon as possible.

42. There are some examples of local authorities targeting specific sectors to encourage the transition to lower emissions vehicles. A number of local authorities are supporting taxi companies to switch to electric or ultra-low emission vehicles. Reading Borough Council has approved plans for all licensed black cabs to switch by 2028 in a move backed by the Reading Taxi Association. Edinburgh City Council is encouraging its taxi firms to switch to electric vehicles with incentives such as reduced licensing fees.

43. Over 300 charging points are to be installed for ultra-low emissions taxis across the country following a Government funding announcement allocating more than £6 million to 17 local authorities. Bath & North East Somerset was awarded half of the funding earmarked for local authorities in the South West.

44. Leeds City Council proposed launching an EV trial scheme in the 2020, offering free trials of electric vans and e-bikes to organisations and free trials of electric cars to private hire drivers in West Yorkshire.

45. Other local authorities are using parking charges to support the wider transition to EV. Hounslow Council has introduced emissions-based parking charges for Pay and Display parking and business permits. The charging schedule has lower charges for electric vehicles and higher charges for more polluting, higher emission petrol and diesel vehicles. Bristol City Council has introduced a similar scheme for residential parking permits.

46. A Workplace Parking Levy (WPL) was introduced in Nottingham in 2012. It is a charge payable by employers whose work premises have more than 10 employee parking spaces. The revenue generated is ring-fenced for local transport improvements. Leeds is considering a similar scheme.

47. Other modes of transport can support partial transition. On 30 June 2020, the Department for Transport approved trials of battery-powered scooters that had previously been banned on public roads and footpaths.

48. Car clubs are well-established as a cheaper and more environment friendly alternative to owning a car. There are now examples of some local authorities introducing EV car clubs

Public transport

49. Major bus service providers are already investing in using lower emissions, lower pollution engines. Electric buses now operate the Salisbury Park-and-Ride service.

50. The switch to carbon neutral transport will require significant funding, but there has been short term funding available, for example, £25m of clean bus funding for local authorities as part of Clean Bus Technology Fund. Zenobe Energy launched a £120m fund for local authorities and bus companies to buy electric buses with the aim of reducing the upfront cost of investment in electric fleets and overcoming challenges related to grid constraints, charging infrastructure and the batteries themselves, which are often the most expensive component.

51. There are many examples of moves to zero emission bus fleets. York City Council has applied to the Department of Transport for funding to deliver Britain's first fully electric bus town and Cornwall has committed to have a zero-emissions bus fleet by 2030. Key industry and public sector players have joined forces to fund and deliver the world's largest demonstration of hydrogen fuel cell buses in Aberdeen

52. Bus travel will remain the key mode of public transport in Wiltshire, but perceptions of public transport need to be improved to increase passenger numbers. Investment in new vehicles, nicer stops, public realm improvements, and better accessibility, can help. Improving real time passenger Information, such as live bus times at the stop, is important for managing people's expectations of the service and improving perceptions of punctuality and reliability.[xvi]

Active travel[xvii]

53. The Covid-19 lockdown has seen increased rates of walking and cycling and in May 2020 the Government announced a £250 million emergency active travel fund. This was the first stage of a £2 billion programme, and part of the £5 billion in new funding for cycling and buses announced in February[xviii]. Government also published statutory guidance for local authorities to follow when making significant changes to road layouts giving more space to cyclists and pedestrians.

54. The Sustrans report *Common misconceptions about active travel investment* (2019) noted that, even before Covid-19, there was widespread public support for greater investment in cycling infrastructure

55. Along with pedestrians and motorcyclists, pedal cyclists fall into the 'vulnerable road users' category showing much higher casualty rates per mile travelled than other road users (RoSPA). A key barrier to public take-up of cycling, across all age groups and capabilities, is concern about safety (traffic, road conditions, lack of safe cycle lanes). Better cycle lane design preferably away from vehicles, but where that is not possible, lower speed limits and traffic calming, create a safer environment for cycling. More joined up cycle routes (in town and

between settlements) and clear signage and information can also ease safety anxieties[xix].

56. The London Mini-Hollands scheme aimed to make cycling more pleasant, safer and more convenient creating Dutch style cycle-friendly improvements The infrastructure changes delivered segregated cycle lanes; measures to calm motor traffic; redesigned town centres; cycle hubs and a range of behaviour change measures including community bike rides. The schemes also delivered measures to improve the walking environment such as new pedestrian crossings at key locations, and the creation of new public spaces with seating, trees and flowerbeds.

57. Waltham Forest is a London suburb that pioneered the '20-minute neighbourhood' which gives people the ability to meet most of their daily needs within a 20-minute walk from home using safe cycling and local transport options. Motorists were concerned when the borough prioritised pedestrians and cyclists, but residents now say the experiment is a success

58. People in Wiltshire may not currently be cycling even short distances. A recent survey of rail users in Chippenham found only 2% of commuters arrived at the station by bike, despite many of these users living within cycling distance of the station (reported in the Chippenham Neighbourhood Plan Pre-Vision Survey). Safe routes into the station and secure parking would improve this.

59. There are some good examples of projects aimed at encouraging active travel as part of a commute. These include Park and Cycle schemes in London, Devon and Oxford.

60. Connecting Wiltshire is a useful information resource, but anecdotal evidence suggests awareness of it is quite low[xx].

61. Better public information and awareness for all road users about cycling was a concern when speaking to local cycling groups[xxi].

Conclusions

62. In Wiltshire, as elsewhere, the investment decisions made over the coming months will be a major determinant of whether the county reaches net zero emissions by 2030, either locking in further emissions or establishing the basis for emissions reduction. The CCC's 2020 Progress Report states that, "*by 2025, a full net-zero policy package must be in place and working effectively," and "most areas will have scaled up delivery and the transition must be well underway"*[xxii].

63. There is also an opportunity in the Covid-19 recovery phase to decouple economic activity from carbon emissions and environmental degradation by *"building back better and building back greener"* globally, nationally and within our own county[xxiii].

64. The task group is aware that the recommendations set out here present difficult choices around priorities and implementation. This is not a role that can be performed by the task group. It has simply set out what it considers to be a range of feasible options to support delivery of the council's 2030 net-zero carbon objective.

Energy

Net zero carbon buildings: Council-built housing (incl. Stone Circle and Stone Circle Development Company)

65. Reducing emissions from buildings is a key priority and one that needs to be achieved through local action in which Wiltshire Council can play an increasingly important role. According to the Committee on Climate Change *"local authorities and network operators should be given key roles in driving early progress and planning, backed up by the necessary resources."*[xxiv]

66. For buildings, reducing energy demand, using energy more efficiently and being powered by energy from renewable sources are the principal means of reducing emissions and Wiltshire Council can play a significant role in making this happen. The Council has made considerable investment in improving the energy efficiency of its own estate, but there remain significant opportunities for greater demand-side energy conservation and efficiency measures across the county. This includes supporting the retrofitting of existing buildings as well as net zero carbon planning policies (which will be addressed in a future report of this task group).

67. The task group concluded that, given the current scale of emissions from residential housing, all new-build houses should be net carbon-neutral by 2030.

68. The Council is already considering what steps it should take through retrofitting current properties and new-builds, but it should invest further in order to reach its 2030 target. It can demonstrate leadership in this area through its own practices.

69. The Council should adopt existing best practice in 'whole-house' retrofitting from housing associations and local authorities to increase the volume of houses being adapted. A 'whole house' retrofit is when all improvements are made together, which can drive down costs for both the developer and the tenant / owner.

70. Recognised building standards and quality marks should be applied consistently to ensure good practice.

Net zero carbon buildings: Private sector

71. Home-owners require support to make their homes net carbon-zero. Many have acted already, however, concerns about further cost, inconvenience and the effectiveness of energy improvements must be addressed.

72. The council can provide signposting, advice and guidance; in particular on the funding available for improvements and on local qualified tradespeople. The council should explore providing loans or other types of funding to support take-up.

73. The council can target resources effectively by working with partners to identify households or areas that would benefit most from energy efficiency improvements. At a local level, to overcome barriers to adoption, the council can help support local community coordination.

Renewable energy generation

74. Local action is key to further decarbonising power through renewable energy generation for an increasingly distributed grid, which will need to provide significantly more electricity as we transition to electric vehicles. Falling costs and the recent announcements on bringing large-scale solar and onshore wind energy back into the system of power auctions may be significant in this respect.

75. Wiltshire has significant ground-mounted solar, but there is more the council can do to promote the further investment in renewables needed to meet Wiltshire's and the UK's net-zero carbon targets. In addition to changes in the energy supply market, new technology and mass production have driven down the cost of generation, and developments in renewable heat, energy storage and electrification of transport are bringing new opportunities (and challenges), which the Council will need to understand and respond to.

76. Renewable energy generation capacity should be increased in Wiltshire i.e. solar, wind, hydro. This will improve supply, generate local energy and lower carbon emissions. The council should explore the potential investment opportunity of renewable energy.

Community led renewable energy generation

77. Local community energy[xxv] projects enable proactive citizens to make the biggest difference to climate change. They are a way to both speed up and scale up the rollout of small and medium size renewable technologies. Community projects can be very cost efficient.

78. The task group acknowledges the value that community energy can provide in terms of reducing carbon emissions and providing social value, innovation and alleviating fuel poverty. The Council should engage with Wiltshire's community energy groups to support the sector and explore mutually beneficial projects such as supplying the developing electric vehicle (EV) charging infrastructure.

79. Placing democratic control, shared benefits and active participation at its heart, community energy can create a foundation for the significant infrastructural and cultural change needed to reduce the impact of climate change and increase energy security.

Transport & air quality

Electric vehicles (EVs) and hydrogen fuel cell electric vehicles (FCEVs)

80. It will no longer be possible to purchase new diesel and petrol vehicles from 2035 – this is likely to be brought forward to 2030 following the recommendation of the Committee on Climate Change to Government[xxvi] (in line with other European countries). The council has a key role to play in ensuring the infrastructure that supports the EV transition is in place.

81. The key challenge in achieving the transition is electric vehicle charging infrastructure. The council needs to invest in developing this infrastructure. Around 45% of EV drivers are worried about a lack of charge points for their vehicles[xxvii] while 40% or more of households do not have off-street parking so cannot charge at home.

82. As the electric vehicle (EV) charging infrastructure market matures, the variety of procurement models and funding options available to local authorities has increased. Private sector partnerships and revenue share arrangements are becoming increasingly common and something that the Council should consider as a means of getting the necessary infrastructure in place.

83. Investing in charging infrastructure could provide an income stream, as well as ensuring a consistent, affordable and high-quality service to residents and at the same time meeting carbon reduction targets.

84. The transition to EVs will also help ensure the UK (and Wiltshire) has an electricity system fit for the future, with EVs adding flexibility and resilience to the grid, smoothing out demand and utilising excess renewable generation. It will be important that the Council works in partnership with Distribution Network Operators (or Distribution System Operators, as they will become), to ensure investment in the network is developed and remains sufficiently flexible.

85. Given that the transition to electric vehicles is inevitable and the operation and maintenance of electric vehicles substantially lower, it makes sense for the council to replace its fleet as soon as possible to make long term savings, in addition to leading by example.

86. The transition to EVs can also support economic recovery by stimulating demand for EV fleet procurement and investment in EV infrastructure roll-out. In the short term, EV chargers can be prioritised in locations that will encourage people to spend time (and money) in the local economy, helping support local businesses or visitor attractions (so-called destination chargers) and delivering broader economic benefits.

Public transport

87. The task group recognises that central Government, particularly in supporting bus and coach operators to switch to low emission vehicles, will be key to reducing emissions from this sector. The council does however have a role in

working closely with service providers to plan for that change and pro-actively pursuing funding opportunities when they arise.

88. Public transport must also become an attractive and convenient option for more people. Improvements to infrastructure, better real-time information and greater integration of services would help encourage use.

Active travel

89. The Covid-19 pandemic showed how quickly a shift to lower carbon modes of travel, such as cycling and walking, can happen; it also illustrated that just as quickly it can then reverse.

90. Finding ways to encourage more use of public transport, cycling and walking needs to be a key part of a sustainable transport strategy[xxviii]. This includes a switch from investing in traditional road schemes to active travel infrastructure.

91. As well as reducing emissions, reducing car domination means reclaimed spaces become pleasanter, healthier, more accessible and vibrant 'living' places[xxix]. Investment in walking and cycling infrastructure, public transport and other measures to reduce car travel demand, as well as improving infrastructure connectivity, can lock-in positive behaviours that reduce travel demand (for example, home-working)[xxx].

Proposal

92. To endorse this first report of the task group and refer it to the Cabinet Members for Housing, Corporate Services, Arts, Heritage and Tourism, and Highways, Transport and Waste, for response at the next meeting of Environment Select Committee or OS Management Committee, as appropriate.

Recommendations

ENERGY

That the Cabinet Member for Housing, Corporate Services, Arts, Heritage and Tourism considers implementing the following recommendations;

Existing council housing

To ensure that existing council housing is net zero carbon[xxxi] by 2030, the Council:

1. **Establishes a funded programme of energy efficiency and renewable energy generation investments for its existing council house stock, with the aim of completion by 2030.**

2. **Builds on best practice and the experience of other local authorities such as Cornwall Council and Exeter City Council.**

3. **Take the Building Research Establishment (BREEAM) Refurbishment and Fit-out Technical standard as a benchmark for refurbishment, concentrating on a 'fabric first' approach.**

4. **Investigates potential to apply for Government funding of innovation in energy efficiency and low carbon heating technologies.**

5. **Undertakes a 'whole house' retro-fitting pilot programme to establish a process for creating at scale net-zero carbon homes in a single step.**

New council housing

To ensure that new council housing is net-zero carbon by 2030, that the Council:

1. **Builds to achieve a net-zero carbon standard, in accordance with the UK Green Building Council's Net Zero Carbon Buildings Framework definition.[xxxii]**

2. **Undertakes sustainable construction and endeavours to minimise emissions through embodied carbon as far as possible, and in accordance with the UK Green Building Council's Net Zero Carbon Buildings Framework definition.**

3. **Builds to the BRE Home Quality Mark[xxxiii].**

Development by the council's wholly-owned companies

To ensure that the council's wholly-owned Stone Circle Development Company contributes to achieving the net-zero carbon target by 2030, that the Council:

1. **Ensures that the council's Stone Circle Development Company builds to achieve,**

    a) **a net zero carbon standard, in accordance with the UK Green Building Council's Net Zero Carbon Buildings Framework definition;**
    b) **sustainable construction and endeavours to minimise emissions through embodied carbon as far as possible, and in accordance with the UK Green Building Council's Net Zero Carbon Buildings Framework definition;**
    c) **the BRE Home Quality Mark standard.**

Private housing

To support private housing in Wiltshire to become net-zero carbon by 2030, that the Council:

1. **Proactively works with energy suppliers to identify households that would benefit from energy efficiency improvements as part of the on-going Energy Company Obligation[xxxiv] aimed at energy efficiency and carbon reduction.**

2. **Develops a programme of support for local suppliers and installers to overcome barriers to delivering energy efficiency measures to the private sector, including training for community group coordinators leading initiatives in their areas.**

3. **Commissions or supports a register of approved builders and tradespeople involved in the delivery of retrofit services in Wiltshire[xxxv].**

4. **Supports, signposts to and/or 'quality approves' housing energy efficiency support schemes.**

5. **Uses Remoting Sensing data and GIS mapping to identify areas with the highest potential or need for retrofit to use resources efficiently.**

6. **Supports the establishment and deployment of a Community Buying Scheme[xxxvi] offering discounts to private households for installing approved energy efficiency and renewable energy generation materials/ devices, working with partner organisations such as the Energy Saving Trust, Centre for Sustainable Energy and Regen South West, and Community Energy groups[xxxvii].**

7. **Advises Housing Associations operating within Wiltshire on retrofitting using suitable methods and standards[xxxviii] and monitors their progress.**

8. **Investigates setting up a revolving loan fund for financing energy efficiency improvements for private homes in Wiltshire.**

9. **Reviews Government funded pilot programme outcomes to determine which building energy efficiency measures have been most successful and which are most appropriate to deploy in Wiltshire.**[xxxix]

10. **Actively participates in Government consultations on proposed changes to legislation and regulation in relation to energy efficiency and renewable energy generation in buildings, to encourage a supportive policy regime and regulatory environment for decarbonisation.**

Renewable energy generation

To encourage the development of more renewable energy generation in Wiltshire that the Council:

1. **Undertakes and publishes a revised assessment of sustainable energy options in Wiltshire (including solar, wind, mini-hydro and bio-energy).**

2. **Undertakes a comparative economic analysis to determine the return-on-investment of renewable energy generation on the council's own assets including farms, relative to existing investments (i.e. as part its investment portfolio for general reserves) and separately, as a potential future income stream to help fund other carbon reduction activities.**

3. **Investigates the potential for undertaking such investments in conjunction with Wiltshire's well-established community energy groups to maximise the associated local social and economic benefits.**

4. **Liaises with local renewable energy suppliers and community energy groups to enable a more joined-up and better-informed approach on policy and lobbying that promotes renewable energy (for example, on the Local Electricity Bill).**[xl]

Community-led energy generation

To encourage the development of more community-led[xli] **renewable energy generation in Wiltshire, that the Council:**

1. **Acknowledges the value that community energy can provide in terms of reducing carbon emissions and driving social value, community energy groups' willingness to engage with the Council and the significant role the Council can play in supporting Wiltshire-based community energy groups to achieve these shared objectives.**

2. **Pro-actively engages with Wiltshire's community energy groups to explore the following, including, but not limited to:**
   a) **Preparing a Community Energy Strategy for Wiltshire;**
   b) **Putting a Community Energy Agreement in place that outlines how Wiltshire Council will support community energy groups and provides the confidence these groups need to raise funding and develop projects;**
   c) **Supporting Community Energy projects by helping to de-risk and finance them via appropriate funding mechanisms, potentially including contingent loans;**
   d) **The delivery of Community Energy projects on non-allocated council land, including, in particular, council farms;**
   e) **Supporting Community Energy groups to install solar PV panels on Wiltshire schools;**
   f) **Supporting Community Energy groups in integrating EV charging with local renewable energy generation.**

TRANSPORT & AIR QUALITY

That the Cabinet Member for Highways, Transport and Waste considers implementing the following recommendations;

Electric and hydrogen vehicles

To support and encourage the adoption of electric vehicles (EVs) and hydrogen fuel cell electric vehicles (FCEVs), that the Council:

1. **Invests in vehicle charging infrastructure to enable the switch to EV and to demonstrate leadership in the transition to zero-carbon transport.**

2. **Undertakes a study to identify cost-effective and appropriate sites for EV charging points across the county, as a basis for investing in and facilitating the installation of EV charging infrastructure, so that that EV drivers of are always within 30 miles of re-charging their vehicles.**

3. **Works with Distribution Network Operators (DNOs), EV charging point providers, local communities and all relevant other stakeholders to install (through investment and facilitation) public EV charging points across the county, in line with Government targets and Committee on Climate Change recommendations.**

4. **Explores collaborating with EV charge point suppliers/ installers to bring in necessary expertise and reduce risk.**

5. **Prioritises phasing out diesel and petrol vehicles from its own fleet, beginning with cars and vans, and their replacement with zero emission (electric or hydrogen fuel cell electric) vehicles as soon as possible, at the latest by 2030, and immediately investigates potential for pilot projects.**

6. **Moves from purchasing or leasing any further diesel and petrol cars or vans from 2021 planning to complete the transition by 2030.**

7. **Only hires or commissions services that use zero emission (electric or hydrogen fuel cell electric) vehicles on new or renewed contracts, except as a short-term, interim measure where insufficient charging infrastructure exists to enable vital services to operate.**

8. **Lobbies Government for additional financial support in delivering a rapid and equitable transition to battery electric and hydrogen fuel cell electric vehicles.**

9. **Provides a guide/ map to existing and planned EV charge points in Wiltshire through the WC website and Visit Wiltshire.**

10. **Works with taxi firms and drivers towards a transition to electric taxis, including possible incentivisation through licencing and the installation of rapid chargers for taxi ranks.**

11. **Explores the potential for running an EV trial scheme, offering trials of electric vans and e-bikes to commercial organisations and of electric cars trials to private hire drivers.**

12. **Takes the opportunity (on offer from the Department for Transport (DfE)) to implement an electric scooter hire pilot scheme, in line with changing legislation that will allow these to operate on cycle routes and shared paths in the near future.**

13. **Introduces appropriate measures to incentive zero emission vehicles over petrol/ diesel engine vehicles.**

14. **Progressively increases parking and charging capacity for electric vehicles in its own carparks.**

15. **Implements a parking and charging regime throughout its own carparks that ensures:**
    - **an appropriate number of working chargers in all carparks;**
    - **a fair pricing structure for customers when commissioning EV infrastructure;**
    - **sufficient renewable energy is generated (e.g. through solar PV panels mounted on carpark canopies) to provide zero carbon electricity for its EV charging points.**

16. **Investigates the merits/ feasibility of introducing a workplace car parking levy (with safeguards that ensure viable alternative travel options and mitigate impact on lower paid employees).**

17. **Promotes the use of EV car-sharing and car clubs.**

Public transport

To facilitate the development of carbon neutral public transport, that the Council:

1. **Evidences how it will work with bus service providers to achieve a transition to battery electric or hydrogen fuel cell electric buses.**

2. **Evidences how it will work with bus service providers and Distribution Network Operators to enable installation of necessary charging infrastructure.**

3. **Evidences how it will work with bus operators, towns and parish local authorities and other stakeholders (e.g. GWR) to make bus use a more attractive option (e.g. web-based information, joint marketing).**

4. **Evidences how it will work with bus operators, towns and parish local authorities and other stakeholders to ensure bus shelters are clean and well maintained.**

5. **Identifies and earmarks funding to support investment in new bus shelters and real-time information displays, including Government grants, community infrastructure levy (CIL) and section 106 (S106).**

6. **Evidences how it will work with bus operators to promote 'No Idling Zones' and policies (where not in place) and enforce (where not being complied with).**

7. **Evidences how it will work with bus operators, train operators and licenced taxi companies to develop a more integrated public transport system through:**
   - **integrated rail-bus timetables that cater for peak commuting periods to encourage people to switch from their cars;**
   - **prioritising cycling through safe access, secure parking and cycle hire where appropriate;**
   - **locating taxi ranks away from train and bus station entrances and pedestrian areas (for safety and air quality).**

8. **Encourages Regional Strategic Transport Boards and other transport bodies to give greater weight to bus service provision.**

Active travel

Active travel means making journeys by physically active means, like walking or cycling. These are usually short journeys, like walking to the shops, walking to school, cycling to work, or cycling to the station to catch a train.

Note that further recommendations supporting active travel will appear in recommendations under the task group's 'planning' workstream.

To promote and support active travel, that the Council:

1. **Provides the physical infrastructure (dedicated/ segregated/ all-weather cycle paths, wayfinding signage, cycle parking) that makes cycling a safer, more convenient and (for shorter journeys) preferred way to travel.**

2. **Works with town and parish local authorities, cycling groups and other stakeholders to significantly upgrade town and village cycle networks and cycle parking, prioritising key network/ parking improvements where demand is greatest, connecting people with intended destinations (e.g. town centres, train stations, bus stations, schools, leisure centres, council buildings and centres of employment).**

3. **Works with Sustrans, town and parish local authorities, cycling groups and other stakeholders to create and develop an inter-connected, long-**

distance, segregated, safe, all-weather network of cycle routes across the county (including diverting current 'National' cycle paths and networks away from major roads).

4. **Invests a significant proportion of the Council's Transport capital budget[xlii], supplemented by CIL, S106 and available grants, to achieve the above over as short a timescale as possible.**

5. **Takes an approach to highway maintenance that maximises opportunities for safe cycling/ cycle network improvement (for example, taking a cyclist's perspective on priorities, segregation, junctions, signage, road surface, size/ carriageway location of potholes, drain covers).**

6. **Introduces other measures to promote active travel and a safer walking / cycling environment, such as car-free zones, low-traffic streets, traffic calming, removing 'rat runs' on narrow residential roads, restricting speed limits, cycle parking sections within carparks.**

7. **Prepares and implements an ambitious and comprehensive long-term cycling plan for the county.**

8. **Publishes an annual report detailing the Council's total investment in existing and new walking and cycling infrastructure (programmes, projects and network improvements) for the previous and forthcoming spending period in order to evidence and promote this council's commitment to supporting active, low-carbon travel.**

9. **Works with public transport providers, cycle groups and other stakeholders towards a more integrated transport system that helps cyclists to connect with buses and trains and makes transporting bicycles on public transport more convenient.**

10. **Investigates the potential for 'park and cycle' facilities at park & ride sites or other suitable carparks, including bike and e-bike hire.**

11. **Supports and promotes safe cycling through:**
    - **providing accessible and up-to-date information on cycle routes (e.g. direct vs quiet routes) and availability of secure cycle parking (e.g. CCTV coverage at stations and in town centres);**
    - **campaigns to raise awareness of cyclists/ cycle safety among all road users;**
    - **training services such as those offered through Bikeability[xliii] or other types of provider[xliv].**
    - **working with schools to encourage and incentivise cycling.**

12. **Lobbies Government on:**
    - **legislative changes (e.g. a presumed liability law[xlv]);**
    - **better enforcement (e.g. on parking in cycle lanes);**
    - **additional funding for infrastructure improvements.**

Air Quality

To improve air quality that the Council:

1. **Undertakes to cut air pollution and improve air quality (including cutting associated carbon emissions) resulting from transport, beyond current statutory requirements, through a series of measures including, but not limited to:**
    - **speeding the transition to electric vehicles by:**
        - **investing in EV charging infrastructure;**
        - **encouraging the take up of electric taxis;**
        - **supporting the transition to electric or hydrogen public transport;**
        - **replacing its own fleet with electric and hydrogen electric powered vehicles;**
        - **transitioning to electric/ hydrogen vehicles for contracted services.**
    - **promoting active travel through education, awareness, and the creation and improvement of cycling and pedestrian routes;**
    - **taking local preventative measures to cut harmful emissions outside schools;**
    - **collecting data on the exposure to air pollution by vulnerable groups in order to better design future policies.**

Cllr Graham Wright, Chairman of the Global Warming & Climate Emergency Task Group

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Appendices

Appendix one – further supporting evidence (energy)
Appendix two – further supporting evidence (transport & air quality)

APPENDIX ONE – FURTHER SUPPORTING EVIDENCE (ENERGY)

Net zero carbon buildings: existing Council housing

Whole house retrofit:

A report by the Institute of Engineering and Technology (IET) and Nottingham Trent University *Scaling Up Retrofit 2050* calls for government and cities to commit to pilot schemes for retrofitting whole houses. It suggests that the policy of incrementally upgrading energy efficiency in UK homes is not enough to meet the country's 2050 climate targets. Instead, virtually every UK house needs a one-off retro-fit

The National Energy Foundation has produced a publication about researching and developing technical solutions for Energiesprong retrofits in the UK. This includes an overview of mandatory, desirable and best practice criteria in a performance specification.

Net zero carbon buildings: Council-built housing (incl. Stone Circle and Stone Circle Development Company)

The number of companies, cities, states and regions committed to delivering zero-carbon buildings has more than doubled in a year (up to June 2020), according to new findings from the World Green Building Council (WorldGBC). WGBC's report confirms that 95 signatories are working towards its Net-Zero Carbon Buildings Commitment.

Several offices across Manchester and Liverpool have been verified as net-zero carbon under the UK Green Building Council's 2019 definition. The 11 office buildings, developed by Peel L&P, are believed to be the first in the UK to demonstrate net-zero carbon status based on their operational carbon emissions, action taken to reduce those emissions and their renewable energy use.

BedZED in the London Borough of Sutton, completed in 2002, is the UK's first large-scale, mixed-use sustainable community, comprising 100 homes, office space, a college and community facilities.

Net zero carbon buildings: Private sector

Since 2013, the Scottish Government has funded local authorities to develop and deliver energy efficiency programmes (mainly solid wall insulation) in areas with high levels of fuel poverty. This funding is blended with Energy Company Obligation funding, owner contributions and funding from registered social landlords who may choose to insulate their homes at the same time. This has helped to deliver energy efficiency measures to around 87,000 households in Scotland.

Industry bodies initiatives:

UK Green Building Council (UKGBC) has developed a framework definition for net zero carbon buildings to provide the industry with clarity on how to achieve net zero carbon in construction and operation.

The Net Zero Carbon Buildings Commitment challenges companies, cities, states and regions to reach Net Zero operating emissions by 2030, and to advocate for all buildings to be Net Zero in operation by 2050. By setting ambitious 'absolute' targets, the Commitment aims to maximise the chances of limiting global warming to below 2 degrees, and ideally below 1.5 degrees, by drastically reducing operating emissions from buildings.

A World Resources Institute working paper sets out how to achieve zero carbon cities by adopting energy efficiency, using renewable energy and – as a last resort – carbon offsetting.

RIBA has developed the 2030 Climate Challenge to help architects meet net zero (or better) whole life carbon for new and retrofitted buildings by 2030.

Net zero carbon no longer refers only to a building's operational use, as the construction stage can account for half or more of all carbon emissions

The London Energy Transformation Initiative (LETI) has developed a Climate Emergency Design Guide which covers 5 key areas: operational energy, embodied carbon, the future of heat, demand response and data disclosure. The methodology includes setting the requirements of four key building archetypes (small scale residential, medium/large scale residential, commercial offices, and schools).

The Embodied Carbon Primer offers supplementary guidance to the Climate Emergency Design Guide, for those interested in exploring embodied carbon in more detail.

Schemes successfully championed/implemented by other local authorities in various contexts

Peterborough City Council's 'Blue Sky Peterborough' is a ground breaking project hoping to define the blueprint for sustainable energy management in a smart city environment.

The Bristol Energy Efficiency Scheme (BEES) was a city-wide project aimed at tackling cold, damp homes by installing loft and cavity wall insulation for free. The scheme insulated over 10,000 properties between 2008 and 2010.

Barcombe Energy Group was formed by a group of local residents to explore the opportunities for making the village more sustainable and energy efficient. Barcombe is a village in Sussex with approximately 580 properties, a third of which were built before 1920. The village has four main housing types which are typical of villages in the region. None of the homes are connected to the mains gas network so there is a strong reliance on oil for heating systems.

Renewable energy generation

Examples of renewable energy investment by local authorities

GRIDSERVE in December 2019 completed and handed over the UK's most advanced solar farm to Warrington Borough Council in a project paving the way for a nationwide expansion of subsidy-free renewable power, to meet the UK's net zero power commitments.

Ashford Borough Council in Kent wants to build its own solar farm. It is estimated that the project could generate £7m over a 25-year period, which the council says would help securing future council services in a challenging economic climate.

Forest Heath District Council spent almost £14.5 million on the 12.4MW Toggam Farm solar project in 2016, which performed marginally better than expected in its first year. Once operating costs and the recouping of some of the council's original investment are taken into account, Toggam Farm has generated £372,600 to be used to fund council services – compared to an expected £330,000.

Wiltshire has a number of Community Energy groups:

Salisbury Community Energy (SCE) is a local not-for-profit community benefit society that was set-up in 2017 to help Salisbury de-carbonise and manage the threats posed by climate change

Nadder Community Energy

Wiltshire Wildlife Community Energy was created in 2013 with the goal of developing community-owned renewable projects in Wiltshire.

Zero Chippenham are partnered with Wessex Community Energy who assisting them with funding for projects in Chippenham

Bath and West Community Energy a not for profit community benefit society, owned and run by our members for the benefit of the community

APPENDIX TWO – SUPPORTING EVIDENCE (TRANSPORT & AIR QUALITY)

Electric vehicles (EVs) and hydrogen fuel cell electric vehicles (FCEVs)

School transport
Local authorities have been given a £40m funding boost to increase home-to-school transport provision from September

Community transport
Community Transport is any type of transport run on a not-for-profit basis to assist people who cannot access private or public transport.

Micro-mobility/ e-scooters
Lessons from Australia as UK consults on e-scooter legislation, Darwin's e-scooter service has been running for over 6 months, providing mobility benefits that might be useful for UK local authorities.

South West rapid charging infrastructure
Investment in rapid charger network to serve EV drivers in Bristol, Bath and North East Somerset, South Gloucestershire and North Somerset

Private hire licencing
East Devon's licensing committee grants first zero emission private hire vehicle licence (2019)

Taxi incentives to switch
Taxi drivers offered subsidies of over £3,000 if they purchase electric or ULEV vehicles to help improve air quality in Bristol (April 2018)

On-demand zero emissions taxi scheme
In Bristol an electric taxi-bus that provides journeys at an affordable price in a shared vehicle with other passengers.

Wireless charging trial for electric taxis to start in Nottingham
Govt. investing £3.4 million in wireless charging technology trials at taxi ranks in Nottingham

Clean Air Zones
More onus on tackling air pollution will be placed on local authorities, according to the government's Clean Air Strategy (January 2019).

Bath and North East Somerset is introducing a Clean Air Zone (CAZ) in Bath in 2021 to improve air quality across the city. Higher emission, non-compliant taxis or private hire vehicles will be charged every time they enter the zone.

Workplace Parking Levy

BBC: Workplace parking levy: Will you have to pay to park at work? (October 2019):
Fleet News: Cities and towns considering workplace parking levies:

Fleet News: Four things fleets should know about workplace parking levies
Transport for London: Workplace Parking Levies tools and guidance

Electric Refuse Collection Vehicles (RCVs)

Hydrogen fuel cell RCVs will take to the streets in seven European cities this year as part of the EU-funded HECTOR project to assess the potential of this technology to decarbonise waste fleets

Aberdeen City Council's fleet includes 20 Geesink GPM IV Split-lift RCVs with 8 more on order, including hybrid LI-ON Power RCVs (2019)

Switching the UK's diesel-powered refuse collection vehicles (RCVs) for electric trucks could reduce greenhouse gas emissions by 290,000 tonnes of CO2 each year (Jan 2020 report)
https://resource.co/article/local-authorities-should-switch-electric-refuse-vehicles-says-report
http://www.transportengineer.org.uk/transport-engineer-features/municipal-vehicles-juice-for-refuse/227649

Manchester City Council: Replacing almost half its refuse collection vehicles with electric alternatives, with 27 on order.

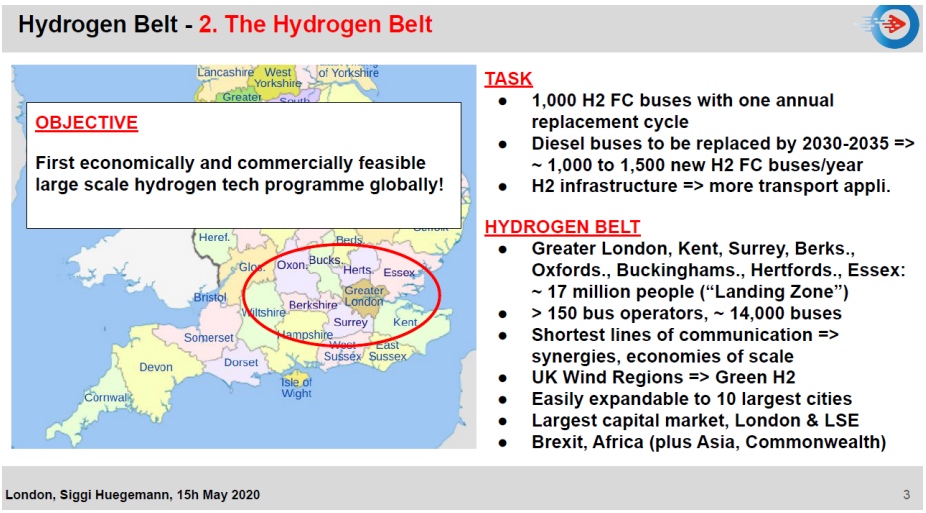
Oxford City Council is trialling its first electric refuse collection vehicles, ahead of plans to replace all 27 diesel lorries in its fleet (July 2020), Replacing all 27 diesel RCVs will save 750 tonnes CO2 per year.

Cambridge local authorities (South Cambridgeshire District and Cambridge City local authorities) has rolled out its first electric refuse collection vehicle (March 2020). The fully electric Dennis Eagle 'eCollect' costs around £400,000, c.f. the c. £185,000 cost of a diesel RCV. Both local authorities are committed to eventually replacing all 55 diesel vehicles across its fleet with electric or hydrogen alternatives.

Sheffield Electric RCV trial. Sheffield-based electric vehicle drive supplier Magtec has designed and manufactured the new system for RCV vehicles (2019)

Aberdeen hydrogen transport (fleet, buses, refuse vehicles)
Aberdeen has been a hydrogen pioneer since 2012 when the city took the decision to target hydrogen as an alternative to fossil fuels. The city started with ten hydrogen buses. It now has 15 more on order, a fleet of 40 hydrogen cars, hydrogen vans, two hydrogen-diesel dual-fuel road sweepers, and two dual-fuel RCVs.
https://www.openaccessgovernment.org/hydrogen-on-trial/80599/
https://news.aberdeencity.gov.uk/aberdeen-to-expand-hydrogen-plans/
https://committees.aberdeencity.gov.uk/documents/s95954/PLA.19.001%20-%20Aberdeen%20City%20Region%20Hydrogen%20Strategy%202015%202025%20Update.pdf
http://www.seafuel.eu/wp-content/uploads/2019/12/aberdeen.pdf

Hydrogen Belt (Home Counties)



The H2Belt initiative started in Henley-on-Thames in December 2019. It is aimed at getting 1,000 H2 FC buses on the roads in and around Greater London, which will put hydrogen on a competitive basis with diesel buses commercially. This is considered possible in a relatively short period of time if surrounding counties ("Hydrogen Belt") are included. scale. The project also focuses on other types of heavy load, long-haul, and heavy-duty vehicles such as refuse trucks.

Hydrogen Hub (Swindon)

The Hydrogen Hub project includes the use of fuel cell technology in a range of domestic, commercial and transport applications.

Hydrogen Hub (Oxford)

As Oxford looks to introduce the UK's first zero emission zone in 2020, hydrogen and fuel cell technologies will have an important role to play in enabling the city to deliver on this plan to improve air quality in the city centre and decarbonise energy across the county.

The Hydrogen Mobility Europe (H2ME) project launched in 2015 with €32m in funding from the Fuel Cells and Hydrogen Joint Undertaking (FCH JU) to support the deployment of FCEVs and hydrogen refuelling stations.
https://www.geesinknorba.com/aberdeen-city-council-wins-local-authority-fleet-operator-of-the-year/
https://www.aberdeencity.gov.uk/services/environment/h2-aberdeen
https://committees.aberdeencity.gov.uk/documents/s78068/CHI.17.303%20Aberdeen%20City%20Region%20Hydrogen%20Strategy%202015-2025%20Update.pdf

Public Transport

Electric buses

York will have 21 new double-decker electric buses from October (2019), thanks to investment by First York and funding from the Office for Low Emission Vehicles (OLEV). The zero-emission and fully electric buses each will be able to carry 99

passengers and have a range of over 150 miles from one overnight charge, which means that they don't need to be recharged during the day (March 2019)

Rolec EV has provided charging points to power First York's fleet of double deck electric buses. The 70+ charging points have 1,620KW of power, including a combination of 22KW AC Type 2 charging sockets and an 80KW dual outlet DC Ultra-Fast Rapid Charger, allowing up to 72 buses to park and charge overnight in unison before carrying out their journeys the following day.

BBC: York to get 24 new electric buses for park-and-ride fleet (Aug 2017)

Nottinghamshire is set to benefit from four new electric buses worth £900,000 - due to hit the roads in 2020 (Feb 2019)

Leeds launches its trial of a new fully electric double- decker bus (2017)

West Yorkshire Combined Authority awarded £617,000 to fund a fleet of five ultra-low emission electric buses to serve its new 1,200 space park and ride site at Stourton.

Contributing to Glasgow's target of becoming carbon neutral by 2030, First Glasgow is bringing two electric buses into service, funded as part of SP Energy Networks' £20million Green Economy Fund.

Moray in Scotland has a small rural electric bus service, hop on hop off, which was launched in June 2019.

Aberdeen to Elgin has electric buses provided by Stagecoach (2hr plus journey)

South Wales Argus Caerphilly could become the first 'fully-electric public transport hub in Britain (May 2020)

Cardiff Council has announced a £2bn transport vision to transform Cardiff and South East Wales' transport network. Its Transport White Paper lays out a 10-year plan to tackle the climate emergency, reduce congestion and improve air quality (Jan 2020)

First Glasgow has invested more than £31 million over the last two years, with the introduction of 150 new ultra-low emission vehicles for Greater Glasgow, while retrofitting an additional 49 mid-life vehicles to speed up the switch to low emission standards.

BBC: Newport's first electric bus is 3 years old and cost £250,000 compared with the £340,000 cost of buying the vehicles new. The buses' batteries need to be replaced every six years and cost £150,000 but Newport Transport has a deal with the energy company Zenobe. The company owns and maintains the batteries and charging systems, and Newport Transport buys the energy.

Cardiff is to get a new fleet of 36 electric buses in an investment by the UK Government worth around £5.7m. The 36 electric buses will cost £5.3m while £341,000 will be put towards new infrastructure to allow them to run.

All Transport for London new double-deck buses will be hybrid, electric or hydrogen. In central London, all double-deck buses will be hybrid as of 2019 and all single-deck buses will emit zero exhaust emissions by 2020. The world's first hydrogen double deck buses are to be introduced on three London bus routes. Hydrogen-powered vehicles have a range similar to conventional diesel vehicles achieving 350-400 miles on a single tank of fuel, and can be refuelled within 3-5 mins.

Hydrogen buses

Wrightbus is planning to introduce 3,000 hydrogen buses to the UK, which it says will help lead the UK's economic recovery post-Covid-19.

Funding

LGA Briefing: Westminster Hall Debate: Net zero targets and decarbonising transport House of Commons (February 2020)

Wiltshire Local Transport Plan 2011 – 2026 Public Transport Strategy (2011), Public Transport Strategy Consultation (2015,16): The worsening financial situation therefore means that going forward, there will be much less funding available to support public transport provision than there was when the LTP was published in 2011. We therefore now need to review again the priorities for spending the much-reduced level of funding that will be available, consider what level of service the Council can afford to support and what is no longer affordable, and look for alternative ways of delivering affordable transport services that may allow us to continue to meet a wider range of needs than would otherwise be the case.
http://option247.uk/wcreviewdoc.pdf
https://pages.wiltshire.gov.uk/public-transport-review-2015-oct-pre-cons-response.pdf
https://pages.wiltshire.gov.uk/ltp3-public-transport-strategy.pdf

A further £30 million of funding in 2020 to 2021 has also been confirmed for local authorities to help them improve current bus services or restore those that have been lost. Every local authority in England, outside of London, is eligible for this funding to ensure that crucial bus routes can be revived or reinvigorated.

The Government is also making it easier and more convenient to take the bus through a new £20 million fund to encourage the development and trial of on-demand ride sharing services in rural and suburban areas, helping people to plan their journeys down to the minute. The fund will boost traditional services by helping people use bus travel to get closer to where they live, at a time that is convenient for them.

Active travel

Initiatives and examples:
Better by bike – an online resource encouraging cycling in the west of England particularly aimed at those returning to or starting to cycle

Walk Ride Bath - campaign for a resilient liveable city that has tackled the social model of disability where walking, wheeling, and cycling is enabled and a real travel choice for all ages and abilities.

Greater Manchester to create UK's biggest cycling and walking network The Beelines initiative will be the largest joined-up system of walking and cycling routes in the UK and has been developed with all ten Greater Manchester local authorities. Once built, the network will better connect every community in Greater Manchester, benefitting 2.7 million people and making cycling and walking a real alternative to the car.

Waltham Forest Cycling Campaign working with Waltham Forest council on the Mini Holland plans

London Mini Holland schemes: Building Dutch-style cycle infrastructure in the outer London boroughs.(Feb. 2020)

London boroughs: The Mini-Holland schemes, much-debated changes to boost cycling and walking in outer London boroughs – have done precisely that, according to the first formal study into their impact.

London Living Streets has identified a range of key policies that local authorities can adopt right now to reduce carbon emissions. Note that these policies have either been adopted by another major global city, by local authorities in London or elsewhere in the UK. While these policies focus on reducing CO2 emissions, they also have wider relevance and can address issues around public health (physical inactivity and obesity), air pollution, road casualties and social inequality.

CPRE's guide to the benefits of Quiet Lanes

Department for Transport: Making a Cycling Town: A compilation of practitioners' experiences from the Cycling Demonstration Towns programme 2005-2009

Local Authority Cycling Support Services
Free services including: cycle skills (tailored training - basic (off-road), urban (quiet roads) or advanced (complex junctions and busy roads), group cycle training. Schools cycle training; Dr Bike sessions; safer urban driving

Government. policy/ strategy/ funding
Government. launches most ambitious plans yet to boost cycling and walking, committing to thousands of miles of new protected bike lanes, cycle training, and first ever zero-emission transport city. Doubling cycling and increasing walking would lead to savings of £567 million annually from air quality alone and prevent 8,300 premature deaths each year and provide opportunities to improve green spaces and biodiversity.

Department for Transport: Gear Change A bold vision for cycling and walking: A once in a generation chance to accelerate active travel

Department for Transport: Cycling and Walking Investment Strategy: making cycling and walking the natural choice for shorter journeys or part of longer journeys

Covid related measures

Re-allocating road space to make walking and cycling safer. Supporting local authorities during Covid-19 and beyond

References

[i] https://royalsociety.org/topics-policy/projects/climate-change-evidence-causes/question-1/
[ii] Fossil CO2 & GHG emissions of all world countries, 2017
[iii] The Institute of Government defines net zero carbon emissions as referring to achieving a balance between the amount of greenhouse gas emissions produced and the amount removed from the atmosphere. There are two different ways of achieving net zero, which work in tandem - reducing existing emissions and actively removing greenhouse gases. A *gross*-zero target would mean reducing all emissions to zero. A *net*-zero target recognises that there will be some emissions, but that these need to be fully offset.
[iv] Air source heat pumps are only efficient means of heating buildings that are well insulated with high airtightness. Putting ASHP into leaky housing will not necessarily reduce carbon footprint. Cost of installation should be looked at with expected energy gain and installed only in situations of a clear improvement in energy consumption. Flats, terraced housing to be targeted as more likely to be effective.
[v] Meeting with Centre for Sustainable Energy (29 January 2020)
[vi] Spring Energy and Eden Renewables
[vii] Meeting with Spring Energy (17 March 2020)
[viii] Meeting with community energy groups (6 February 2020)
[ix] Road transport and air emissions: Contribution of road transport to greenhouse gas and air pollutant emissions – further analysis of the UK Environmental Accounts data, Sept 2019
[x] Friends of the Earth: 33 actions local authorities can take on climate change
[xi] DfT Decarbonising Transport: Setting the Challenge (2020)
[xii] Campaign for Better Transport, 2017, Major Road Building is failing to deliver
[xiii] Sactra (1994) Standing Advisory Committee on Trunk Road Assessment. 'Trunk roads and the generation of traffic'. Available at: http://www.t-e.nu/links.htm
[xiv] Country in a jam: tackling congestion in our towns and cities (LGA 2017)
[xv] Committee on Climate Change: Net Zero The UK's contribution to stopping global warming, May 2019
[xvi] Meeting with Head of Passenger Transport (20 January 2020)
[xvii] Active travel means making journeys by physically active means, like walking or cycling. These are usually short journeys, like walking to the shops, walking to school, cycling to work, or cycling to the station to catch a train.
[xviii] House of Commons Library: Briefing Paper No. 8615 7th July 2020: Active Travel, Trends, Policy and Funding (7th July 2020)
[xix] Meeting with Sustrans and local cycling groups (16 July 2020)
[xx] Meeting with Sustrans and local cycling groups (16 July 2020)
[xxi] Meeting with Sustrans and local cycling groups (16 July 2020)
[xxii] Ibid p20
[xxiii] Building back a green and resilient recovery: Statement by Lord Goldsmith on Building a Clean and Resilient Recovery from Covid-19 in Support of Climate Action and the Sustainable Development Goals, 8th July 2020. Available at: https://www.gov.uk/government/speeches/building-back-a-green-and-resilient-recovery
[xxiv] Ibid p21
[xxv] Wiltshire Wildlife Community Energy (WWCE); Salisbury Community Energy; Bath and West Community Energy (BWCE); Zero Chippenham
[xxvi] Committee on Climate Change: Net Zero The UK's contribution to stopping global warming, May 2019
[xxvii] Are we geared up for EVs? Crispin Andrews, E&T Engineering and Technology, July 2020:
EV100 is a global initiative bringing together forward-looking companies committed to accelerating the transition to electric vehicles (EVs) and making electric transport the new normal by 2030.
Also see: UK Electric Fleets Coalition: Policy Position Statement
Local Government Association: Councils in charge Making the case for electric charging investment:
OFGEM: Future Insights Series: Implications of the Transition to Electric Vehicles:
Energy Saving Trust: Procuring electric vehicle charging infrastructure as a local authority, September 2019
Watson, Farley and Williams: The Future of E-charging infrastructure in the United Kingdom, June 2020:
House of Commons Library Briefing Paper: Number 7480, 25 March 2020 Electric vehicles and infrastructure

European Federation for Transport and Environment: Recharge EU: How many charge points with the EU and its member states need in the 2020s? January 2020
EDF: Electric car charging points:
Recharge EU: how many charge points will Europe and its member states need in the 2020s?
PWC: Charging ahead! The need to upscale UK electric vehicle charging infrastructure, Apr. 2018:
EV and EV Charging Incentives in the UK: A Complete Guide
Commitment by Bristol to incentivise use of low emission vehicles (Bristol One City Climate Strategy p.30)
Leeds City Council: Climate Emergency Report (January 2020):
p.19 By 31st March 2020 the council's fleet will be comprised of 232 electric vehicles, leaving 20 1041 vehicles to transition to ultra-low emission vehicles. The electric vehicles will primarily be charged at council sites, ensuring that they are powered by green electricity secured through the proposed power purchase agreement.
p.23 The EV trial scheme will launch in the 2020, offering free trials of electric vans and e-bikes to organisations in West Yorkshire and free trials of electric cars to private hire drivers. This project is funded by a £1.9 million clean air grant from Highways England and £900,000 from Clean Air Zone (CAZ) early measures.
Oxford City changing licencing in consultation to bringing in zero-emission vehicles by 2025 p.23
Wigan Council provides discounted fees of 50% for taxi vehicle licences.
[xxviii] Reclaiming city streets for people: Chaos or quality of life? European Commission. Available at: https://ec.europa.eu/environment/pubs/pdf/streets_people.pdf
[xxix] London Boroughs Mini Holland Schemes
https://www.gov.uk/government/case-studies/london-mini-hollands
https://www.theguardian.com/environment/bike-blog/2018/jun/26/mini-holland-schemes-have-proved-their-worth-in-outer-london-boroughs
http://www.enjoywalthamforest.co.uk/wp-content/uploads/2015/01/Waltham-Forest-Mini-Holland-Design-Guide.pdf
[xxx] Committee on Climate Change: Zero Emissions HGV Infrastructure (May 2019)
[xxxi] A net zero carbon building is a building that is highly energy efficient and powered from on-site and/or off-site renewable energy sources, with any remaining carbon balance offset.
For a building's construction, this is achieved when the amount of carbon emissions associated with a building's product and construction stages up to practical completion is zero or negative.
For a building's operational energy, this is achieved when the amount of carbon emissions associated with the building's operational energy on an annual basis is zero or negative.
[xxxii] UK Green Building Council's (UKGBC) Net Zero Carbon Buildings Framework definition: https://www.ukgbc.org/wp-content/uploads/2019/04/Net-Zero-Carbon-Buildings-A-framework-definition.pdf
[xxxiii] BRE Home Quality Mark: https://www.homequalitymark.com/
[xxxiv] Energy Company Obligation *https://www.gov.uk/government/publications/energy-company-obligation-eco-help-to-heat-scheme-flexible-eligibility*
[xxxv] Refer to Centre for Sustainable Energy Pilot work with Bristol City Council: https://www.cse.org.uk/projects/view/1203
[xxxvi] For example: Zero Chippenham Community solar Panel Discount Buying Scheme https://zerochippenham.org/chippenham-solar-pv-buying-scheme/
[xxxvii] Refer to Oxfordshire Retrofit Works' approach: https://cosyhomesoxfordshire.org/
[xxxviii] For example: BREEAM Refurbishment of Domestic Buildings https://www.breeam.com/domrefurb2014manual/
[xxxix] Energy efficiency demonstration projects - grant award recipients – project summaries:
https://www.gov.uk/government/publications/energy-efficiency-improvement-rates-local-supply-chain-demonstration-projects/local-supply-chain-demonstration-projects-summaries
[xl] A community with local renewable generation (e.g. housing estates with solar panels or a local solar or wind farm) cannot easily sell the energy they generate directly to local people. They must sell it to a utility who sells it on to customers. This creates unnecessary costs. A draft private members Local Electricity Bill proposes to encourage and enable the local supply of electricity.
https://www.current-news.co.uk/news/the-local-electricity-bill-is-passed-into-law-to-help-empower-community-energy;
https://powerforpeople.org.uk/the-local-electricity-bill/
https://services.parliament.uk/bills/2019-21/localelectricity.html
Examples of support from MPs and other local authorities:
https://powerforpeople.org.uk/the-local-electricity-bill/support/

https://www.southhams.gov.uk/article/6613/District-Council-Backs-Local-Electricity-Bill
https://www.devon.gov.uk/northdevonnews/2020/02/18/local-electricity-bill-could-bring-power-to-the-people/

[xli] Community energy refers to the delivery of community led renewable energy, energy demand reduction and energy supply projects, whether wholly owned and/or controlled by communities or through partnership with commercial or public sector partners.

[xlii] UN calls on countries to invest at least 20% of their transport budgets in walking and cycling infrastructure

[xliii] Bikeability is a cycle training programme to provide everyone with the skills and confidence for all kinds of cycling. Courses are available throughout the year in most local authority areas.

[xliv] Waltham Forest's Cycle Confident scheme

[xlvxlv] Presumed liability' (often referred to as 'strict liability') is an element of civil law that, in crashes involving vulnerable road users, finds the more powerful road user liable by default, unless it can be clearly proven that the vulnerable road user was at fault. This applies to all types of collisions.