CPRE Climate Emergency – Cover note

What is included in this pack?

As well as the policy position that was approved by the Board and individual policy papers that went out for the One CPRE consultation, we have written a Q&A of potential media questions, and key messages from the policy paper. Please access them using the links below:

- CPRE Climate Emergency Policy Position;
- Key messages;
- Q&A of potential media questions;
- The four sub-group papers that fed into the final policy paper:
    - Land use, farming and forestry
    - Transport
    - Energy
    - Building and Planning

Our response to the climate emergency

As you will read, a key theme that runs through our new policy is the need to ensure an equitable transition for rural areas as we move towards net-zero – one that empowers rural communities, creates thriving rural economies, and is done in harmony with nature, our cultural heritage and our precious landscapes.

The countryside will play a key role in tackling the climate emergency, through things like increased tree and hedgerow planting, more sustainable agricultural practices and the restoration of nature. Not only will these solutions help to mitigate against, and adapt to, the worst impacts of the crisis, but they also provide a huge opportunity to enhance the countryside, and promote its health and wellbeing benefits to a new and diverse set of people.

We have a vision of a low-carbon countryside, one in which wildlife is abundant, that provides good jobs and services, is affordable and accessible to all, full of tranquility and beautiful landscapes for us to enjoy. We believe this policy and the campaigning that we can and will do off the back of it, will help us achieve this vision.

Next steps

Tackling the climate emergency will be one of our public-facing campaigns this year, which we will be launching at the end of April. We are still developing exactly what this will look like, and look forward to working in partnership with you in the coming months to maximise our impact at the local, regional and national level. The documents we have provided today are to help give you the tools you need to respond to reactive enquires or consultations in the meantime, before our public launch in April.

Over the coming months, we will produce supporting campaign material and other documents for each of the four issue areas (Land use, farming and forestry; Energy; Transport; Building and

planning) that will help you to interpret how to use this policy in practice when, for example, responding to planning applications. These guidance documents will take us a little while to put together, but we aim to get them over to you before the end of March.

Making the policy a reality – a request for case studies

As we develop our more public-facing content on this issue, we will be on the lookout for case studies that bring it to life. We want to show all the good work that people are already doing to address the crisis in their area – however big or small it might be. It could be anything that demonstrates or inspires action on tackling the climate emergency, such as:

- A farmer experimenting with new sustainable methods of agriculture.
- A local community getting together to scout out the best place for new renewable energy infrastructure.
- A free bus scheme run by a community to improve public transport options in their area.
- A new low-carbon housing scheme in a town or village.

If you have any good examples, or have any questions about any of the material outlined above, please do get in touch by emailing campaigns@cpre.org.uk.

CPRE's Policy Position on the Climate Emergency

1. The Climate Emergency

According to the IPCC, we have until just 2030 to implement the action needed to limit global warming to 1.5 degrees.[1] According to the UN Environmental Programme, this will require global emissions to fall by 7.6% every year from now until 2030.[2] A rise in temperature of even half a degree more than this would significantly increase the chances of droughts, floods and other extreme weather events.

At the same time, the UK's wildlife continues to decline according to the State of Nature 2019 report.[3] The latest findings show that since the 1970s there has been a 13% decline in average abundance across wildlife studied and that the declines continue unabated. Whilst the biodiversity crisis also has other causes, climate change is a significant contributor, so the two crises are two sides of the same coin, and we must address them together.

2. The threat to the countryside

Sea levels around the UK have risen by 10cm since 1990, making vulnerable coastal areas less resilient in the face of wave energy, sea surges and storm. Saltwater inundation from tidal surges may also damage fragile tidal habitats, kill fish and affect the birds that eat them.

Total UK rainfall has increased by 17% since the 1960s, with flooding now commonplace in Cumbria, Lancashire and Yorkshire. Yet climate change combined with population growth will put greater pressure on water availability, particularly in the South East of England, which is likely to affect how and which crops are grown.

There is already evidence of a northwards shift in species distributions and changes in the timing of seasonal events. Headwaters of rivers are becoming warmer in winter and spring; lower reaches are warmer in summer. Life cycles of some species are no longer synchronised with those of species on which they depend. Flowers are blooming earlier and oaks are leafing earlier.

The threats posed by the climate emergency to our countryside and rural communities are profound. It is compounding ongoing biodiversity loss through loss of habitat and landscape scale changes such as the salination of the Broads.

The UK's Committee on Climate Change (CCC) has identified a number of risks, including: loss of quality of cropland; sea level rise affecting land and communities in coastal areas; new pests, disease and species migration posing risks to crops, livestock and trees; greater water stress affecting ecological health of lakes and rivers; degradation of peatland; increased extreme weather events that will pose increasing threats to communities, businesses, infrastructure and the natural environment.[4]

The landscapes we know, the biodiversity and forms of economically feasible production they support, as well as the nature and availability of fundamental resources such as fertile soil and

[1] https://www.ipcc.ch/sr15/
[2] https://www.unenvironment.org/resources/emissions-gap-report-2019
[3] https://www.rspb.org.uk/about-the-rspb/about-us/media-centre/press-releases/state-of-nature-2019/#6XIDIASBL2wbHUBc.99
[4] Committee on Climate Change. July 2016. p38, pp55-58, pp63-65

usable water, will change. Our approaches to production, land management, nature, water and soil will need to evolve rapidly.

3. Our response

As the countryside charity, CPRE wants to see a thriving, beautiful countryside rich in nature playing a crucial role in our nation's response to this emergency. Both mitigating the worst impacts of climate change and adapting to the changes already being felt and yet to come are essential. Integrated approaches are required to ensure these dual priorities are approached concurrently, and to increase the resilience and diversity of rural communities, landscapes and ecosystems.

Future projections suggest that these impacts will increase exponentially unless we radically cut greenhouse gas emissions and champion natural climate solutions. We must seek 'win-win' scenarios.

We know that through planting trees, restoring peatlands and more sustainable land management, we can use the tools nature has given us to capture carbon emissions and restore our natural environments. We know that making the most of renewable energy sources such as wind, solar and hydro will help move towards a low-carbon energy mix and that energy efficiency can deliver big savings of both carbon and money for rural homes and businesses. We know that promoting sustainable public transport, and active travel can lower emissions while also improving our wellbeing and reconnecting our market towns with increasingly isolated rural communities. It is therefore necessary that the landscapes we know, the biodiversity around us, the ways in which we travel and the type of places that we live, will change.

In order to make these changes, **CPRE believes it is essential to develop an integrated, low carbon land use strategy for England** and associated action plans as a matter of urgency to inform the changes in land use and management required. This should identify spatially where delivery of multiple public goods, including ecosystem services, can be optimised or will be constrained. The strategy would provide a framework for cross-government approaches and empower multi-agency partnerships for delivery. It should inform targeting and use of policy levers including any Environmental Land Management Scheme incentives, reforms to the Planning System, and significant infrastructure investment decisions.

Transformational change is required across the country, touching every sector and community, and we will embrace this change positively and holistically, so that future generations will enjoy the biologically rich, fertile countryside that we celebrate for its intrinsic value as much as we do for providing us with key ecosystem services such as food, fresh water and health & well-being benefits.

4. Political context

- **Global leadership – a moral and practical imperative**

The UK government has signed up to international agreements on climate change such as the UN's 2016 Paris Agreement[5] and aspires to be a world leader. However the ONS warned recently that Britain had increased its net imports of CO2 emissions per capita from 1.7 tonnes in 1992 to 5.1 tonnes in 2007, offsetting domestic progress on shifting the UK economy away from fossil fuels.[6] The UK government has acknowledged it must 'get its own house in order' and adaptation measures will be required on a massive scale regardless of responsibility for emissions.

[5] www.treaties.un.org
[6] www.theguardian.com/uk-news/2019/oct/21/britain-is-g7s-biggest-net-importer-of-co2-emissions-per-capita-says-ons

- **National – the need for unprecedented ambition**

Our current efforts to curb the greenhouse gas emissions driving climate change are lacking in scale and speed, and we also need to inject urgency into adaptation measures. The CCC has underlined that action within the UK to achieve the statutory target of net-zero emissions (removing as many greenhouse gas emissions as we produce) by 2050 is falling far behind what is required.[7]

There is no longer scope for business as usual. A mixture of short and long-term, cross-party and cross-departmental approaches are required immediately. CPRE calls for the UK government to work towards net-zero emissions as quickly as possible, with a target of 2045 at the latest. Individual policy interventions regarding mitigation must be assessed primarily on how quickly they can reduce carbon emissions over the next decade (for example nuclear energy is low carbon but takes many years to bring online). The imperative to act now is unprecedented and delivering against concrete policies and plans immediately to achieve this target as quickly as possible is more important than the actual target date.

- **Local – respecting and encouraging devolved decision-making**

Challenging decisions and trade-offs will emerge in delivering the required responses to climate change. These trade-offs will occur across spatial scales, among segments of society and through conflicting objectives. Poorly informed responses can potentially result in unintended consequences or adverse outcomes for human vulnerability to climate change.

There is a cross party consensus supporting devolution. Many decisions will need to be taken at a devolved level, and it is important to ensure that power should be exercised as much as possible at the lowest practical level – close to the people affected by the decisions. Local authorities must have the ability to respond to what local people need and want, not just what they are told to do by central government.

To effectively manage any potential conflicts CPRE will advocate for the full consideration of all environmentally sustainable options and the use of democratic decision-making processes, particularly deliberative approaches such as citizens assemblies to ensure equity and that the voices of local communities, and particularly those least heard, are considered.

5. Our approach

At the heart of our approach will be the need for an equitable transition for rural areas. We must move towards a net-zero future that is equitable and democratic, that empowers and benefits rural communities, supports a thriving rural economy and the ecosystems it relies on, is sensitive to our cultural heritage and wildlife and works in harmony with our valued landscapes. The countryside's role in delivering net-zero emissions provides an unrivalled opportunity to ensure the necessary changes help create a more resilient and diverse countryside.

As a campaigning organisation, we will mainly focus our resources on the role of central and local government policy and practice in securing a zero-carbon future for us all. However it is clear that individuals will also need to change behaviors and we will encourage people to take an active role reducing their own carbon footprint and adopting more sustainable lifestyles both within and beyond the wider structural parameters of government policy.

- **Cross cutting principles**

[7] www.theccc.org.uk/2019/07/10/uk-credibility-on-climate-change-rests-on-government-action-over-next-18-months/

The following principles will guide all our work on the climate emergency:

Resource efficiency. We will support steps that lessen the burden placed on our natural environment through a linear resource consumption model which wastes water, minerals, plastics, energy and food. This can be achieved through championing effective circular economic approaches and ending the era of unnecessary single use products, as well as focusing on reducing demand and improving energy efficiency;

Linking climate change and natural capital. The changes in land use and land management required to address climate change should be done in a way that reflects natural capital principles (valuing land for its utility as natural capital rather than for its development value), considers landscape character, benefits wider environmental priorities and delivers ecosystem services;

Multifunctional land use. Our approach to land management will need to rapidly reduce greenhouse gas emissions as well as increasingly focus on ensuring multiple benefits from land in both resource production as well as capturing greenhouse gas emissions through natural processes, for example hedgerows and wetlands;

Incentivising sustainable practice. We support the need for significant financial investment from both government and the private sector to ensure meaningful progress towards net zero. It is imperative that carbon-intensive activities to which alternatives exist such as new fossil fuel development, poor practice in land management and travel choices with high emissions are immediately dis-incentivised. Conversely, the development of renewable energy, reduction of demand for energy, best practice in land use management and active travel must be incentivised. However, this should be done in a way that does not advantage the better off, or disadvantage those least able to make the transition to less damaging alternatives;

Supporting 'smart growth'. We support the principle of 'smart growth'[8], including the prioritisation of suitable urban brownfield sites, increased density, co-location of homes, workplaces and services and the best use of existing infrastructure, at the same time as protecting and enhancing open spaces for all benefits they provide. This requires a strategic approach to development that integrates housing with energy and infrastructure planning across different spatial scales.

- **Evidence base**

The science and evidence base on climate change is constantly evolving and for the purposes of this policy position we have decided to rely on credible, authoritative and independent bodies such as the IPCC and CCC to guide the parameters of our analysis. This does not mean we agree with all their recommendations, and we will continue to undertake our own analysis on the impacts of the climate emergency on the countryside. This will include commissioning our own research and analysis of complex issues in more depth as appropriate.

There are also some areas regarding detailed emissions, such as those throughout the international food supply chain, and relative producer versus consumer responsibilities, that have been deemed out of scope given the need to prioritise areas most closely related to our vision and mission and the fact that other organisations already have substantial expertise in these areas.

- **Cross cutting issues**

[8] www.smartgrowthuk.org

During the development of this policy position, a small number of cross cutting issues such as water management emerged. The more detailed Working Group Paper on Land Use, Farming & Forestry addresses issues such as slowing the flow, managed realignment and the role of natural processes as well as afforestation, effective management of runoff from land and rainwater harvesting. We will look at options for developing more detailed individual policy positions on a range of issues in the future, including water, and/or work on them through alliances or partnerships, such as the Blueprint for Water coalition,[9] as required.

6. Our focus

There are many aspects of the climate emergency that require urgent action, but after extensive consultation with stakeholders we have chosen to focus on the following four areas.

- **Land Use, Farming and Forestry**

Action to reduce emissions and adapt to climate change in the land use sectors has not been a major priority in England to date. The scale of the land use changes that have been identified as necessary to reach net zero emissions by 2045 means that strategic decisions will be required about the extent, type and location of the changes, such as woodland creation, rewetting of peatlands as well as which areas of coastal land to protect, manage differently or allow to erode. These decisions will also need to factor in the implications of the significant reduction in livestock numbers proposed by the CCC, and CPRE accepts that livestock numbers may need to decline nationally.

We will call for:

- ✓ significant changes in land use and land management in the agriculture, horticulture, forestry and game management sectors. This will require a fundamental shift in public policy that discourages greenhouse gas emissions and rewards carbon storage and sequestration, accompanied by robust advice and training;

- ✓ changes in land use and land management to be carried out in a way that enhances landscape character and nature and supports thriving and sustainable rural economies and communities. In some areas the landscape will change as greater diversity is reintroduced to maximise opportunities for climate mitigation and adaptation, harnessing natural processes. This should be in keeping with the underlying landscape character, enhancing biodiversity and conserving water resources and soils;

- ✓ changes in citizen and consumer behaviour and will encourage the involvement of local communities' individuals and rural businesses in demonstrating good practice and raising awareness of the issues. This will be by reducing food waste, changes in diet, through involvement in community activities such as woodland management or tree planting, and promoting a greater understanding of the climate impacts of the way the landscape is managed.

- **Building and Planning**

The planning system has a fundamental role to play in helping to mitigate and adapt to climate change. In most cases, current development is not creating the liveable communities that are sustainable and allow residents to live low carbon lives, and we need to improve both development

[9] www.wcl.org.uk

and building design. Built development produce emissions that contribute to climate change because of a change in land use and throughout the lifecycle of the development. For example, residential buildings accounted for 18% of carbon dioxide emissions in 2018. 80% of buildings that will be in existence in 2050 are already constructed, and many more will be constructed under policies and consents that are already in place. Many plans guiding development for the next 10-15 years - halfway to that target date – are in force now, without the radical policies embedded in them that are required to meet the government's 2050 net zero target, let alone 2045.

We will call for:

- ✓ all development, new and existing buildings, to contribute to efforts to mitigate and adapt to the climate emergency. Sustainable development needs to be redefined to focus on living within environmental limits and the importance of addressing the climate emergency;

- ✓ a radical overhaul of the planning system to deliver zero carbon development alongside social, economic and other environmental benefits and not as a trade-off with them. This includes ensuring the climate change duty in the Planning and Compulsory Purchase Act is monitored and enforced, with penalties for failing to comply and meet binding carbon targets. This should ensure that carbon, and other emissions and environmental impacts are properly and openly considered in decision-making processes;

- ✓ building regulations to be radically tightened up to ensure that new and existing buildings meet zero carbon standards. New buildings should be designed to a high quality and built to last, not just in terms of the materials used in their construction, but enabling them to be repurposed without significant alteration for different uses and hence extend their lifetime.

- **Energy**

The generation and supply of low carbon energy will be core to achieving our goal of net zero carbon emissions by 2045 or earlier. The transition is already well underway, particularly in the supply of electricity where renewables accounted for 33% of electricity production in 2018. However, it is clear that our energy system must be transformed over the next 20–30 years if we are to achieve net zero. Likewise, huge changes will be needed in the generation of low carbon heat and the reduction of energy use through energy efficiency.

An economy based on renewable energy will bring major benefits but will also bring challenges for the countryside; for example, in the increased amount of land required to provide for our energy needs. Over the centuries, the countryside has changed and adapted to new technologies and circumstances, for example harnessing wind energy through windmills and biofuels through managed woodland. We need to ensure future changes are sensitive to our cultural heritage and wildlife and work in harmony with the landscape. Hard choices and a pro-active search for solutions that meet multiple objectives will be needed.

We will call for:

- ✓ a transition to a decentralised, zero carbon energy system that empowers and benefits local communities, and is delivered in harmony with our natural environment and landscapes. Creating social and environmental resilience is key to this energy transition;

- ✓ renewable energy to be done the right way. This means the strategic planning of renewable energy assets at national, sub-regional and local levels, and local communities empowered to help shape their local energy response. It also requires: minimising impacts on landscape, tranquillity and heritage; bringing net benefits to wildlife; benefitting the rural economy and forming a cornerstone of local enterprise and jobs; and supported by or owned by local communities. It will also mean maximising renewable energy generation and climate change mitigation within urban areas and previously developed land;

- ✓ affordable low carbon heating. The way we heat buildings will need to change radically in order to deliver net zero carbon. Rural areas face unique challenges in terms of expensive high carbon heating and cooking systems. We will support rural communities to make the transition to low carbon heating solutions, such as heat pumps, in a way that addresses fuel poverty and delivers better comfort and health outcomes for residents.

- **Transport**

The transport sector makes up at least 27% of total greenhouse gas emissions, and this increases to 33% if international aviation and shipping are included. Despite progress being made in reducing overall UK emissions, emissions from transport have continued to rise along with congestion.

Successive governments have largely avoided factoring in the impact of transport on both the built and natural environments and on rural communities and individuals, and concerns about climate change impacts are rarely mentioned. Rural areas are now largely car dependent and continue to face a toxic mix of declining services and further cuts in public transport. We also need to find creative ways to support community led initiatives, and reduce the need to travel in the first place, for example through more homeworking. There is an acute need to raise awareness of the contribution of transport emissions to climate change and poor air quality.

We will call for:

- ✓ a binding national single carbon budget and reduction pathway for the transport sector as a whole to be developed by the Department for Transport, back cast from 2045 with all transport programmes planned and funded to fit the carbon pathway. The budget and pathway would provide a framework for sub regional and local authorities to develop their own budgets for achieving net zero transport carbon emissions by 2045. This approach should be facilitated and ensured by applying the polluter pays principle across all transport;

- ✓ the implementation of a functional transport hierarchy approach to travel choices which prioritises active travel – walking and cycling, then provision of public transport, and lastly car travel, mirroring the carbon footprint of the different modes of travel. This should be used by all government departments, local planning authorities and businesses when making decisions on their transport investment choices in terms of both use and forward planning. When it is not possible to remove the need to travel, more and higher quality public transport options need to be provided to encourage a modal shift away from private car travel;
- ✓ the inclusion of aviation in the UK carbon budget with targets for progressive reduction. Internal flights should be phased out and replaced by improved electric rail services. There should be no further airport expansion, and higher rates of taxation and other disincentives for frequent fliers should be developed.

7. How we are going to work

- **Reducing our own carbon footprint**

CPRE has an Environmental Policy and is currently working to reduce carbon emissions in all aspects of its operations and will report annually on progress towards its own net-zero emissions goal.

- **Mainstreaming our response**

The climate emergency will inform every aspect of our work as underlined in Our Strategic Plan 2020-26. It will be a cross-cutting theme and will inform all our work going forward. It will be reflected in all our policy positions, the priorities we set, projects we undertake and decisions we make.

- **Working in partnership**

Fulfilling the vision of a thriving, beautiful countryside rich in nature playing a crucial role in our nation's response to the climate emergency is a much bigger job that we can hope to achieve alone. We will work in alliances, with partners, and collaborate with others who share our aims and objectives. We will continue to play an active role with partners in the Green Alliance, The Climate Coalition and Wildlife and Countryside Link, whilst exploring new alliances to further our specific goals on a case by case basis.

8. What we are going to do

We will respond to the climate emergency positively in order to win public support and acceptance for the radical policies that we will be calling for. We will seek to both raise awareness of the impact of the climate emergency on the countryside, and mobilise the public to influence key decision makers.

We will prioritise ensuring that the gravity of the crisis is reflected in decisions made by those in power through our campaigning and advocacy to work toward achieving net zero emissions by 2045 at the latest.

The CPRE network will work together on the most pressing priority issues at both national and local level, with National CPRE providing support including guidance, campaigning and policy outputs for local CPREs to utilise and drive local action.

9. Measuring our progress

Our response to the climate emergency, as a cross-cutting theme in our new strategy, will be monitored by the Board of Trustees on a regular basis. All of our strategic objectives will help contribute in some way to meeting net zero emissions, but in particular, strategic objective *2.4 'A low carbon countryside that mitigates and adapts to the impacts of the climate emergency'* will be used to assess detailed progress. We will publish the outcomes and impact of our work annually, including through the Trustees Report and Annual Review.

This policy position will also be reviewed periodically as required by an appropriate body appointed by the Board of Trustees, which is currently CPRE's Policy Committee. The fast evolving nature of the current political and policy context for the climate emergency will require a flexible and dynamic approach.

December 2019

Land Use, Farming & Forestry

Land Use, Farming and Forestry – Top Lines

1. To achieve net zero carbon emissions by 2045, CPRE will argue for significant changes in land use and land management in the agriculture, horticulture, forestry and game management sectors. We will argue for a fundamental shift in public policy that discourages greenhouse gas emissions and rewards carbon storage and sequestration, accompanied by robust advice and training.

2. CPRE will campaign for the development of an integrated land use strategy for England to inform the changes in land use and management required to:
    a. create a more diverse countryside and landscape to support climate adaptation and mitigation alongside significantly enhanced delivery of a range of public benefits (including ecosystem services); and
    b. ensure that all land performs multiple functions, tailored to the attributes of that land and landscape and the needs identified (e.g. flood management, greater access for recreation).

3. CPRE will argue for the changes in land use and land management required to be carried out in a way that enhances landscape character and nature and supports thriving and sustainable rural economies and communities. In some areas the landscape will change as greater diversity is reintroduced to maximise opportunities for climate mitigation and adaptation, harnessing natural processes. This should be in keeping with the underlying landscape character, enhancing biodiversity and conserving water resources and soils.

4. CPRE calls for changes in citizen and consumer behaviour and will encourage the involvement of local communities, individuals and rural businesses in demonstrating good practice and raising awareness of the issues. This will be by reducing food waste, through involvement in community activities such as woodland management or tree planting and promoting a greater understanding of the climate impacts of the way the landscape is managed.

This policy paper outlines how CPRE considers the countryside should evolve to play a vital role in achieving a transition towards net zero emissions, focussing both on climate change mitigation and adaptation. It covers 'undeveloped' land use in primarily rural areas (as distinct from 'developed' in the development planning sense), this includes all land used for agriculture and horticulture, woodland, wild or semi-wild land including wetlands. This paper focuses on *land use* rather than the climate change impact of supply chains for farming, forestry and other products derived from the countryside.

Land Use, Farming and Forestry - The Challenge

Climate change poses a range of profound risks and threats to the countryside – its wildlife, landscapes and communities – and society as a whole, but if managed well, the countryside can and will be an important part of the solution.

With climate change, a minimum 2.7°C rise in temperature is expected and without further efforts to cut greenhouse gas (GHG) emissions, there is a risk of warming up to 4ºC by the end of the century[1]. The Committee on Climate Change (CCC) has identified a number of risks, which include:

- Loss of quality of some of the best cropland (grades 1,2 and 3a) in the east and south-east with most of the east becoming unviable for arable production by the 2050s

- Sea level rise affecting land and communities in coastal areas, eroding coastal habitats and increasing the risk of saline intrusion into groundwater, with knock-on impacts on supplies of water for drinking and for irrigation

- New pests and diseases and species migration will pose risks to crops, livestock and trees as well as adding to pressures on native flora and fauna already constrained by habitat loss and fragmentation, pollution and over-exploitation.-; Some species and habitats will reduce in range or be lost from particular areas with potential for others to disappear from the UK. Reduction in range, loss or timing of availability of food sources will have a knock-on impact on dependent species

- Greater water stress will adversely affect the character and ecological health of lakes and rivers as their flows reduce and put pressure on all uses of water, including public water supplies and irrigation. Availability of water will become a limiting factor for agricultural production and quality, especially in the south and east

- Degradation of upland peatlands, lowland peats and peaty soils will increase and their ability to store carbon and support biodiversity will decline due to temperature rises and rainfall changes

- Increase in extreme weather events (floods, droughts, heatwaves, high winds) will pose increasing threats to communities, businesses, infrastructure and the natural environment

- Disruption to domestic and international food production and supply chains causing food price rises in the UK

With temperature rise inevitable, it is clear that the landscapes we know, the biodiversity and forms of economically feasible production they support, as well as the nature and availability of fundamental resources such as soil and water, will change. Our approaches to production, land management, nature, water and soil will need to evolve rapidly to keep pace with the rate of change.

If we do nothing, the impacts of these changes will be much worse. We could reduce many of these risks and the attendant costs if we make the right choices now about how land is used and managed in the future.

[1] *UK Climate Change Risk Assessment 2017 Synthesis report: priorities for the next five years*

Key Issues

The extreme weather and exotic pests and diseases that climate change will bring will significantly alter the countryside but so too will land managers as they respond to the new policies that will emerge and wider economic signals which reflect the impacts of climate change. The CCC has made it clear that changes in land use and management will be essential to deliver deep cuts in GHG emissions and increase our resilience to climate change impacts[2].

Action to reduce emissions and adapt to climate change in the land use sectors has not been a major priority in England to date. Although GHG emissions from agriculture have fallen over time[3], their share of total UK GHG emissions has risen (from 6.8% in 1990 to 9.9% in 2017[4]) as greater reductions have been made in other sectors. This figure is reduced to 7.8% when the net sink effect of emissions from the land use, land use change and forestry (LULUCF) sectors are taken into account[5,6]. However, these figures fail to fully account for GHG emissions from degraded peatland (as yet not fully reported in national accounts) equivalent to an additional 4% of total UK GHG emissions[7]. Without deliberate action to increase and enhance carbon sinks, their potential to sequester carbon is expected to fall over time as they reach saturation point.

The scale of the land use changes that have been identified as necessary to reach net zero emissions by 2045 means that strategic decisions will be required about the extent, type and location of the changes, such as woodland creation, rewetting of peatlands as well as which areas of coastal land to protect, manage differently or allow to erode. These decisions will also need to factor in the implications of the significant reduction in livestock numbers proposed by the CCC. However, the evidence base is currently fragmented, which makes it challenging to determine which changes should take place where.

In addition, although the emissions from land use change from undeveloped to developed use are accounted for[8], where land is proposed for built development, the full climate change impact of the loss of land to built development is not assessed. Increasing land-take by development results in reduced land available to provide public benefits (including ecosystem services) such as carbon storage, as well as GHG emissions from construction as well as other emissions from the future developed land use.

Since land is finite and the area of undeveloped land continues to shrink it will be important to recognise the multiple functions that land performs in delivering public benefits for society. This is yet to be fully recognised in current decision-making processes. There is a risk that focussing only on changes that are required to achieve net zero emissions, could lead to the development, industrialisation and simplification of the character of the countryside. This could also have detrimental impacts on other important environmental, social and economic benefits that the countryside provides. This may include significant land-take of built infrastructure such as glasshouses in inappropriate places or large areas of monoculture woodland and biomass crops.

[2] *Net Zero The UK's contribution to stopping global warming*
[3] *2017 UK GREENHOUSE GAS EMISSIONS, FINAL FIGURES Statistical Release*
[4] *2017 UK GREENHOUSE GAS EMISSIONS, FINAL FIGURES Statistical Release*
[5] *2017 UK GREENHOUSE GAS EMISSIONS, FINAL FIGURES Statistical Release*
[6] Since 1990 LULUCF has become a net sink sequestrating 9.9 MtoCO2e pa by 2017
[7] *Land Use: Reducing emissions and preparing for climate change*
[8] *Greenhouse gases, Between 1990 - 2016, Total GHGs in CO2 Eq., Land Use Land Use Change and Forestry, All sectors, All sources*

Amongst the reasons that the agricultural sector has been slow to adopt practices that reduce GHG emissions is the cost of putting the actions in place (either in terms of the machinery or technology required or in terms of the production effects). Also, land managers lack advice and guidance on what the most cost-efficient measures are to achieve the greatest emissions reductions, as well as those that bring co-benefits such as adaptation and greater resilience to climate change and the provision of a range of other ecosystem services[9].

Consumer action will have an important role to play in a range of areas from reducing domestic food waste to changing diets as a result of growing awareness of the carbon footprint of food as well as animal welfare issues, but these are politically sensitive areas in which Government is often reluctant to intervene.

GHG emissions are transboundary in nature. In taking action domestically, a key issue is how to ensure that the changes made in the UK do not lead to the displacement of emissions elsewhere. The current international carbon or GHG accounting systems do not yet enable these impacts to be identified in a transparent way. This also has implications for future trade agreements due to the need to ensure that low carbon UK production cannot be undercut by higher carbon production elsewhere.

There is a mix of policy levers available to bring about the changes required (e.g. regulation, incentive payments, taxation). However, the Government is often not keen on introducing new regulation or taxes despite the fact that public finances are limited and could continue to be constrained in future. To date insufficient attention has been paid to the role of the markets and opportunities for a mixture of public and private (blended) finance in this sphere as well as the role public land should play in demonstrating the feasibility of the changes required.

[9] The recent IPCC report on land use begins to make available some of the necessary information, advice and guidance that land managers will need as do the relevant reports from the CCC.

Our Solutions

CPRE advocates the following solutions to address the key issues above. We have also identified three principles that should guide any change to undeveloped land in the countryside in response to the climate challenge. These are set out below.

General Principles:

1. The specific mix of mitigation and adaptation measures required should vary depending on location. Our countryside has changed and evolved over millennia. Looking forward, the countryside's role in delivering net zero emissions provides an unrivalled opportunity to address necessary change positively to create a more diverse countryside, more able to adapt to a changing climate and the associated weather extremes that are forecast, absorb and store carbon, at the same time as being ecologically resilient, and provide the range of benefits (including ecosystem services) we as a society will require into the future.

2. This diversity should be driven by an approach that genuinely values and rewards multi-functional uses of land rather than a focus on single outcomes. Otherwise, the land area of England will be simply too small to accommodate all the needs placed upon it, especially in the context of rising demands for development and loss of land to sea level rise and other flooding. Thus, all open land needs to perform multiple functions, which will vary regionally and locally depending on the attributes of that land.

3. The changes in land use and land management required should be carried out in a way that enhances landscape character and nature and supports thriving and sustainable rural economies and communities. In some areas the landscape will change as greater diversity is reintroduced to maximise opportunities for climate mitigation and adaptation, harnessing natural processes. This should be in keeping with the underlying landscape character enhancing biodiversity and conserving water resources and soils, recreation, and health and wellbeing.

CPRE will campaign to promote the positive role the countryside can play to reduce GHG emissions, increase the removals of GHG emissions in natural carbon sinks and increase the resilience of the countryside to the risk and impacts of climate change. To achieve this, CPRE will argue for significant changes in land use and land management in the agriculture, horticulture, forestry and game management sectors.

The following climate change mitigation efforts should be prioritised:

- Maintain existing carbon stores through:
    - Effective management of existing permanent grassland, woodlands and forests, hedgerows and individual trees, wetlands and soils
    - Rewetting of peatland and the phased reduction of peat use in horticulture with no peat extraction or burning beyond 2030 at the latest
    - Significant restoration of upland and lowland peatland
- Increase carbon sequestration through:

- Planting of new hedgerows and hedgerow trees and expansion of hedgerows in suitable areas
- Allowing natural regeneration
- Afforestation and tree planting with appropriate and diverse species to ensure greater resilience to pests and disease and support adaptation to climatic changes over time
- Incorporating trees and woods extensively into farming systems and integrate planting sensitive to the landscape and semi-natural habitats, recognising that in some areas landscapes may need to change significantly
- Forest and woodland management that favours continuous cover forestry and coppicing over clear felling and replanting, especially on steeper slopes, to protect carbon-rich woodland soils from erosion and carbon loss
- Better soil management to rebuild soil fertility, increase soil organic matter and prevent soil erosion

- CPRE accepts that livestock numbers may need to decline nationally to significantly reduce GHG emissions from agriculture, but this must be done carefully to:
  - Not replace domestic production of meat or dairy for UK consumption with imports from systems with higher life cycle emissions
  - Take into account the importance of pasture-fed livestock to high quality nutrition, to our landscapes, rural culture and to biodiversity as well as the importance of well-managed use of animal manures to maintaining and improving soil fertility and health

- Deliver further reductions in fossil-fuel intensive fertiliser use and increase nutrient use efficiency to reduce emissions and the loss of nutrients to the environment. The health and fertility of soils should be improved through practices such as use of legumes, cover crops, herbal leys, better manure management and precision farming.

- Producing renewable energy:
  - The countryside can provide space for renewable energy (e.g. wind, solar, hydro, anaerobic digestion, battery storage etc.) if undertaken sensitively, especially by increasing the utility of existing rural buildings
  - Providing feedstocks for bioenergy – wood waste from the effective management of woodlands and hedgerows for carbon and wildlife benefit should be used as feedstocks for bioenergy first before expansion of bioenergy crop production[10].

[10] *Bioenergy in the UK – Turning Green Promises Into Environmental Reality*

However, there should not be removal of crop residues or organic waste where these are necessary to contribute to soil structure and health.

- CPRE believes that to increase the resilience of the countryside to the risk and impacts of climate change:

  - Land must be managed in a way that enables the ecosystem services it provides to be resilient to changing temperatures and weather patterns. This includes the protection and enhancement of soil quality to provide effective soil function and support effective water management. Green infrastructure also plays an important role, not just in the countryside but in the urban and suburban environments

  - Water resources in the countryside must be stewarded more effectively to ensure their resilience in a changing climate and to protect the benefits of our lakes, rivers and wetlands

  - Built development on farms or to support forest management must be not only climate resilient but should support the wider enterprise to mitigate and adapt (e.g. generate solar heat and electricity (PV), improve energy efficiency, incorporate green roofs, use rainwater harvesting from buildings, protect animals from extremes of temperature, use sustainable drainage schemes)

  - Greater emphasis should be placed on the effective use of natural processes to enable climate change adaptation such as via coastal realignment, naturalisation of water courses, creation and restoration of saltmarsh and natural regeneration of scrub and woodland on slopes to reduce flood risk as well as support nature recovery. Many of these actions will also help reduce GHG emissions

  - Increase planning and resources for community resilience and self-sufficiency particularly to maintain access to services in times of natural disaster

CPRE will campaign to make sure the right governance and policy levers are in place to bring about the transformational changes required. In particular, we will advocate for:

- The development of an integrated land use strategy for England and associated action plans as a matter of urgency to inform the changes in land use and management required and to ensure that these reflect the 'Guiding Principles' set out above. This should identify spatially where delivery of multiple public goods (including ecosystem services) can be optimised or will be constrained. The strategy would provide a framework for cross-government approaches and empower multi-agency partnerships for delivery. It should inform targeting and use of policy levers including any Environmental Land Management Scheme incentives, carbon credits etc

- A fundamental shift in public policy through a post-CAP framework that incentivises low carbon activities and rewards carbon storage and sequestration (e.g. woodland planting), using a mix of policy levers (fiscal, regulations, financial support) and market mechanisms, e.g. the right market for the use of carbon zero timber products.

- Opportunities for using blended finance should be sought. Policies must ensure a level playing field and not undermine domestic policy so that emissions are not simply imported from elsewhere or exported

- Cross-government approaches, with organisations sufficiently funded and empowered to play their role. Government agencies (e.g. Natural England and Environment Agency), local authorities and partnerships (e.g. Local Enterprise Partnerships and Local Nature Partnerships) must be given the policy framework, powers and resources to secure and enable appropriate multi-functional uses of land within regional areas

- Prioritise advice, guidance and training for those who manage land, focusing on the optimal mix of measures (regionally/locally specified), including information on new approaches and where practices provide co-benefits for ecosystem services

- Public land to be at the forefront of the transformation to set an example and demonstrate what is possible – this includes county farms, MOD, Crown Estate etc

CPRE will call for changes in consumer behaviour and will encourage the active involvement of local communities, individuals and rural businesses in demonstrating good practice and raising awareness of the issues. For example, we will call for:

- An increased focus on reducing food waste, not only throughout the supply chain but also by end consumers. All wasted food is also wasted inputs, wasted capacity of the land and produces unnecessary emissions

- Government to show leadership on educating and encouraging consumer dietary shifts not only to reduce the carbon and overall environmental footprint of consumption but to address health and wellbeing concerns. To avoid displacing emissions any livestock reductions should keep pace with changes in consumption patterns

- The involvement of local communities in promoting a greater understanding of the climate impacts of the way the landscape is managed, for example in tree planting and management of woodland as well as community supported agriculture, to raise awareness of the issues and especially where it brings wider health, social, recreational as well as potential economic benefits to that community

CPRE will argue for improvements to be made to the evidence base, including:

- A clear assessment of the regional and local impacts of climate risks in different types of landscape (e.g. based on agricultural landscape types) with recommendations for landscape-sensitive mitigation and adaptation measures that reflect the 'general principles' identified above, including in nationally designated landscapes.

- A national representative soil survey to assess and report on the state of the country's soils and their properties. This is required to underpin adaptation and mitigation policies, building a wider evidence base to reveal potential opportunities and constraints on future land use including soil carbon sequestration

- International and national accounting systems to measure the true magnitude of emissions from the land-using sectors; These should be presented in a transparent way to ensure that all emissions are accounted for and that national decisions do not lead to perverse effects, driving emissions in other parts of the world

- Carbon accounts for land that include, wherever possible, data on sequestration as well as emissions.

Transport

Transport - Top Lines

1. Transport is the largest source of Greenhouse Gas (GhG) emissions in the UK, at 126 MtCO2e, accounting for 28% of UK greenhouse gas emissions in 2017, and the only sector in which emissions have increased since 1990. Nitrogen Oxides (NOx) produced in the combustion process are also greenhouse gases and NOx and particulate matter – PM10s and PM 2.5s - are major contributors to respiratory disorders and cardiovascular diseases.

2. The Committee on Climate Change has stated "This sector is now significantly off-track from the cost-effective path of the committee's fifth carbon budget assessment". Accordingly, climate change and air quality must be brought into all aspects of transport planning, investment and management.

3. Meeting the target by 2045 of net zero emissions by the transport sector will be particularly challenging. It will require a radical plan. We are of the view (alongside the Committee on Climate Change) that progress will be best achieved if there are a series of intermediate target dates for reductions supported by binding carbon targets and budgets.

4. The health of England's rural areas – environment, economy, transport, land use, workforce – is intricately bound up with that of the urban areas. However, rural areas struggle to gain profile under our present systems, where value is often equated with headline economic output. CPRE supports the call for recognition and strong advocacy of the importance of rural areas at national and local levels of government. They have a crucial role to play in mitigating and adapting to climate change.

5. Rural areas are largely car dependent and continue to face a toxic mix of declining services and public transport cuts. A positive plan for rural communities is needed, acknowledging their special needs and pressures on them, and facilitating sustainable development. Combined with a national programme of provision of high quality, interconnected public transport and the roll out of universal wifi, step by step this should help remove carbon from transport by reducing the need to travel.

6. To guide investment, CPRE endorses the transport hierarchy approach to travel choices which prioritises active travel – walking and cycling, then provision of public transport and lastly car journeys, mirroring the carbon footprint of the different modes of travel.

7. It is clear that the reduction in emissions from road transport that will be needed to meet net zero emissions by 2045 will not be achieved by a switch to electric vehicles alone - a significant reduction in vehicle miles driven will be needed too. Road user charging should be developed to replace the revenue from vehicle licences and fuel duty, and designed to reflect the true cost and impact of individual journeys. Drivers would be charged on a per mile basis with the rate varying depending on the distance travelled, the vehicle's emissions, local levels of congestion and the ready availability of local transport alternatives.

Transport - The Challenge

The overarching challenge is to reverse the growth in overall emissions and secure a rapid, phased reduction in greenhouse gases. Despite progress being made in reducing overall UK emissions, with 2018 marking the sixth consecutive year that they fell overall, emissions from transport have continued to rise along with congestion.

The transport sector makes up at least 27% of total greenhouse gas emissions: this increases to 33% if international aviation and shipping are included.[1] There is an acute need to raise awareness of the contribution of transport emissions to climate change and poor air quality. Growth in air travel is a particular issue and there are also concerns about shipping, emissions from which can impact on coastal communities.[2]

Total emissions from transport have increased 6% since 2013 and are now 4% higher than in 1990.[3]

The BEIS UK (the Department for Business, Energy and Industrial Strategy) emissions projection paper April 2019 shows for all emissions that *"For the fourth carbon budget (2023 to 2027), the UK's emissions are currently projected to be greater than the cap set by the budget"*. The paper goes on to point out that *"Many policies which will affect the 2020s and beyond have not yet been developed to the point at which they can be included in these projections."*

A strategic approach is required to rejuvenate rural communities and economies appropriately for the challenges of the 21st century and enhance their resilience to climate change, reversing the trend for many rural communities of being little more than dormitories causing increasing levels of pollution and urban congestion.

National legislation followed by piecemeal devolution and public funding constraints have resulted in a complex patchwork of competing and often restrictive approaches to rural transport provision. A wholesale culture change is required amongst decision makers at all levels to ensure social and environmental imperatives are prioritised, and that includes addressing climate change.

[1] "UK greenhouse gas emissions dip, but transport remains biggest emitter"
[2] https://www.gov.uk/government/news/clean-maritime-revolution-starts-voyage
[3] https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/

Key Issues

Rural areas are now largely car dependent and continue to face a toxic mix of declining services and further cuts in public transport

When combined with the decline in banks, high street shops, post offices and pubs, rural communities have found themselves either cut off from key services or highly car dependent. This in itself can significantly affect quality of life, resulting in poor mental and physical health and a lack of community cohesion.[4] Noise and air pollution from traffic is not limited to urban environments, but also affects rural areas along trunk roads that dissect the countryside and cause severance within communities.

We also must take into account the impact on urban areas of this growth in road transport: traffic congestion both pollutes the air and renders walking and cycling difficult and unpleasant.

As members of the Rural Coalition, CPRE has supported the House of Lords Select Committee, the Independent Food, Farming & Countryside Commission, the Rural Services Network, the National Association of Local Councils, and others[5] in calling on the government to produce a Rural Strategy. Such a strategy would need to have climate change mitigation and adaptation as its heart, including addressing concerns about rural transport and reducing the need to travel.

The true costs of private travel are hidden, making influencing transport change very complex

For personal travel, successive governments have emphasised choice, and the freedom of individuals to pay for the most convenient mode for themselves as individuals, leaving the provision of essential public transport to a range of contracted and private competitive services. The attraction of car use (for those who can) is that drivers can plan their door-to-door journey as a whole; a public transport journey that involves a change of mode is rarely seamless in price, timetabling and ticketing.

The current system completely ignores the uncosted environmental and health implications of such a policy. It has resulted in increasingly disproportionate costs for public transport journeys in rural areas and progressive loss of provision for rural buses. We know that in reality individual personal car travel is significantly more damaging in terms of carbon emissions, air quality and congestion per person travelling, uses more capital and revenue resources, and has a major effect on road wear and tear and thus the costs to the local public purse[6].

The congestion and delay common on rural-to-urban commuter routes could efficiently be reduced by the adoption of attractive, modern and efficient, mass transport. One tram carriage or bus can carry 50 people or more using less road space and less fuel overall. Traffic-free town centres with regular public transport access with provision of alternative facilities for the disabled will transform the public realm.

[4] https://www.rsnonline.org.uk/breaking-the-silence-on-rural-mental-health
[5] The future of rural bus services in the UK
[6] Figures compiled for one congested UK city calculate that private car drivers cost the Council c£2,500 in wear and tear and other subsidy.

However funding for subsidised bus services has fallen by over £170 million a year since 2010. In that same time, more than 3,000 bus routes have been cut back or withdrawn completely [7] with rural bus services closing at an increasing rate, resulting in transport deserts in many areas, and not all of them rural. Rural lanes are no longer the preserve of the walker and rider with just an occasional vehicle, but are regularly blighted by rat running with frequently speeding vehicles.

The power of the motorist has become a major one in planning decisions.

Urban councils are often faced with opposition when they try to restrict car access and switch to pedestrianised town centres. Without public support expressed in a local vote many attempts to improve air quality and safety, and reduce carbon emissions have failed to get off the ground. At the very least there should be input to such referenda by all residents (walkers, cyclists and drivers) alike.

National legislation has progressively separated different transport modes and providers in the interests of cutting revenue support, streamlining management and promoting efficiency

Separating out the individual modes, but allowing competition in some areas while enforcing franchise in others, and leaving the private individual to choose their own private mode of travel whenever possible has resulted in a disjointed public transport system.

Cross subsidy between modes and providers is restricted under national legislation; door-to-door travel planning using a range of modes (e.g. bus to train) is generally treated as a string of separate journeys financially, logistically and in timetabling.

Government has largely avoided factoring in the impact of transport on both the built and natural environments and on rural communities and individuals, and concerns about climate change impacts are rarely mentioned. Sparsely populated rural areas have suffered in particular because they have not ranked high enough in the numbers game that has brought investment in public transport elsewhere. Neglect of the needs of rural residents and rural visitors has meant that the assumption that you cannot live in, work in, or visit rural areas without access to a car has largely become a reality.

According to DfT statistics[8] from 2005 bus fares in England outside London rose from a baseline of 100 to 178.5, i.e. at twice the rate of the Consumer Price Index, which rose to 138 over the same period. The RAC Foundation has analysed change in the cost of travel in the last ten years and shows that while bus and coach fares have risen by 60%, the cost of motoring has only risen by 30%, in line with the cost of living index[9]. The same is true for rail fares. Relative to public transport, the cost of motoring is continuing to fall, reducing any incentive to switch to public transport where there is a choice.

[7] Buses in 'crisis' as 3,000 routes reduced or scrappedThe Future of Rural Bus Services
[8] https://www.gov.uk/government/collections/bus-statistics
[9] info@racfoundation.org

Great emphasis has been placed nationally on switching to electric or hybrid private vehicles, buses and taxis. However, this approach to reducing emissions is grossly inadequate, as shown by provisional work carried out by the Tyndall Centre for Climate Change Research. Even if all new cars/buses/taxis were *ULEVs by 2035 (80% battery electric, 20% plug-in hybrids), a 58% reduction in car mileage between 2016 and 2035 would be needed for car CO2 emissions to be in line with a 'well below 2°C' pathway (i.e. in line with the Paris agreement). There are two reasons for this conclusion: emissions from the drive system and tyre wear continue even with electrically powered vehicles, and the switch to electric vehicles is very slow, requiring major public and private investment in power supplies and connections.

The House of Commons select committee report published on 22nd August 2019 [10] states "In the long-term, widespread personal vehicle ownership ….does not appear to be compatible with significant decarbonisation. The Government should not aim to achieve emissions reductions simply by replacing existing vehicles with lower-emissions versions." The Ten Key Areas of Shortfall outlined in the report summarise how Government has failed to accelerate carbon reductions, and has encouraged private mileage growth by its policies on fuel duty.

[10] https://www.parliament.uk/business/committees/committees-a-z/commons-select/science-and-technology-committee/news-parliament-2017/clean-growth-report-published-17-19/

Our Solutions

The solutions proposed, in combination, would provide quality travel options for all, making our urban and rural areas better places to live while complying with the legal commitment on greenhouse gas emissions. Rural areas would be brought back into the public transport network, while the overall need to travel would be reduced by strengthening rural communities and their facilities. However reducing travel miles requires the planning system to reduce the need to travel, through mixed use development and location of development close to sustainable travel options.

1. Binding carbon targets and budgets.

In May 2019, the Committee on Climate Change (CCC) recommended that the UK adopts a new target of net zero greenhouse gas emissions by 2050.[11] The subsequent translation of that commitment into UK law in June 2019 makes reducing emissions from transport the foundation stone of all transport policy.[12] CPRE has signed up to demands to achieve this target by 2045. Nothing will change until there is a carbon reduction pathway with binding targets and clear budgets for the whole transport sector in a phased manner.

A binding national single carbon budget and reduction pathway for the transport sector as a whole should be developed by the Department for Transport, back cast from 2045 with all transport programmes planned and funded to fit the carbon pathway. The budget and pathway would provide a framework for sub regional and local authorities to develop their own budgets for achieving net zero transport carbon emissions by 2045. This approach will be facilitated and ensured by applying the polluter pays principle across all transport.

2. Implementation of a functional transport hierarchy.

The Transport Hierarchy recommendation of the Institution of Mechanical Engineers, 2013 states:

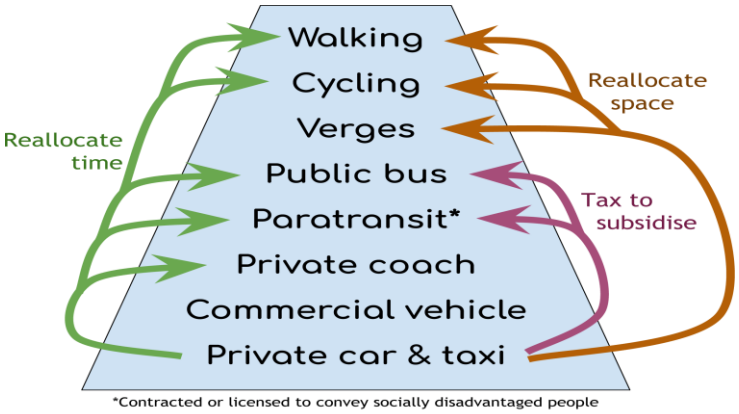
We believe that this Hierarchy should be used by all governmental departments, local planning authorities and businesses when making decisions on their transport choices in terms of both use and forward planning.

Simply put, the hierarchy broadly mirrors the carbon footprints of different modes of travel, and the inclusiveness of each mode for all in society. It has been accepted by most local planning authorities as good practice. However, despite this the reality is that most new housing is built with priority for cars first with parking required through the planning permission. Public transport is only very rarely required as integral to the development; and pavements and cycle-ways are frequently too narrow, not well segregated from traffic, and often discontinuous.

CPRE warmly endorses the hierarchy. It should be applied in all urban and rural communities.

[11] The UK's contribution to stopping global warming
[12] UK becomes first major economy to pass net zero emissions law

Cambridgeshire local transport Plan 2011-2026



Putting the transport hierarchy into place involves reallocating existing road space. The Cambridgeshire plan (above) for reallocation of road space is a first step towards making the hierarchy applicable and workable, with spending targets for measures to develop active travel. This follows best practice and the example of many continental cities and towns[13].

For rural areas this means that safe cycle and walking access to bus services, to local facilities and along rural links must come first. We know that river basins conform to the most physically efficient system of moving increasing flows of water from a widely distributed and sparse set of streams progressively into the final flow of a major river. A similar model should be adopted for transport. The result would be an efficient network joining rural to urban seamlessly with benefit to both. The removal of cross subsidy for rural bus routes should also be reversed.

3. Reducing the need to travel

Reducing the need to travel should continue to be an overall policy objective. It should be pursued energetically and in a coordinated manner across the country. This is not just an action for DfT but a cross-government issue. Rural transport cannot be treated in isolation, and nor can it be left to local authorities where frequently the authority border marks a different level of public transport provision. Wherever possible it should be made easy for people to access education, social care and medical facilities, as well as commercial facilities, banks and other services by walking or cycling.

4. Modal shift through the provision of quality and sustainable public transport

Where it is not possible to remove the need to travel, more and higher quality public transport options need to be provided to encourage a modal shift away from private car travel. At present, at the national level different modes of transport are generally planned and funded in uncoordinated silos: to be efficient they should be effectively integrated to deliver journeys that easily cross from one mode to another. This has been widely achieved in other countries.

[13] http://www.transportfornewhomes.org.uk/wp-content/uploads/2019/07/checklist.pdf

Future investment needs to prioritise ensuring that as many car journeys as possible can be replaced by public transport. This means substantially increasing the availability, reliability and affordability of bus and rail services across rural areas.

While it can be possible to look up connections on the internet, internet service in rural areas remains poor and unreliable leaving people in need of information with no options. Better information availability is essential to allow people to plan journeys across rural areas by public transport.

5. Aviation

CPRE will campaign with other bodies to include aviation in the UK carbon budget with targets for progressive reduction. Internal flights should be phased out and replaced by improved electric rail services, or by electrically powered short haul aircraft[14].

There should be no further airport expansion: the price to the climate is too high with present technologies: "offsetting" is not an adequate alternative as the full environmental, social and economic costs are not taken into account. We suggest that higher rates of taxation for frequent fliers be investigated.

6. Freight and local deliveries

Electrification of heavy goods road vehicles has enormous limitations: at present the most carbon-efficient means of moving goods is on an electrified rail network, where gradients are rarely greater than 1 in 100. Electrically powered HGVs on roads would at present be heavily restricted in their range by the limitations on battery weight/power. Urgent and focussed work using alternative fuels, notably hydrogen, is required if we are to meet even the national legal target of net zero emissions by 2050.

Coastal shipping and use of rivers and canals for non-perishable goods could play a greater role in the movement of freight. Transport for the North (TfN) (the subnational transport body for the Northern Powerhouse) has shown that increasing coastal shipping as an alternative to HGVs on the road network would achieve significant reductions in emissions.[15] This view is based on average emissions for road freight of 62gCO2/tonne-km and for short sea shipping of 16gCO2/tonne-km.

A genuine "logistics-based" approach to distribution is required to integrate the delivery of goods to their final destinations: e.g. long distance/bulk movement by electrically powered rail or short sea shipping as appropriate, and local bulk delivery using hydrogen powered (when available) and smaller electric vehicles to local collection points. This approach is already giving results for Tesco which has changed their distribution system out of their Daventry depot. Switching to an intermodal delivery solution is set to save an estimated 26,000,000 lorry miles every year. [16]

Rolling out such a system nationwide will require local and national government planning, involvement, and investment within the carbon budget limitations.

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14 Norwegian research and Orkney proposals
15 https://transportforthenorth.com/wp-content/uploads/Freight-and-Logistics-Enhanced-Analysis-Report.pdf
16 https://www.directrailservices.com/intermodal---tesco.html

7. National and local government transport planning

A national strategic network approach that integrates all travel modes should provide a framework through which local authorities and combined authorities can also plan infrastructure investment and well-connected services[17].

The current system of funding investment in the road network through the revenue generated from vehicle licences and the "duty" on fuel at the pump should be replaced in whole or in part by road user charging. Under such a system, drivers would be charged on a per mile basis with the rate varying depending on distance travelled, the vehicle's emissions, local levels of congestion and the availability of local transport alternatives. Such a system should be designed to reflect the true cost and environmental impact of individual journeys. The technology now exists to deliver such a system and the report cited[19] advocates that a first pilot should be delivered through Transport for London by the end of 2020.

If transport emissions are to start falling nationwide, in line with the legal position on Climate Change and the urgency for action, we suggest that road pricing should rapidly be rolled out nationally and extended to rural hinterlands. The revenue generated should be allocated to improve and decarbonise the public transport system.

The transport hierarchy should be applied across the planning process to all new developments, so that all necessary journeys are catered for through sustainable modes:

- safe walking and cycling routes provided automatically
- a bus stop within half a km of all new housing, and a service from day 1 of the development being occupied
- good IT connections to enable people to adopt "smart working", thus avoiding the need to travel at all

All authorities involved in transport planning and delivery must be given the powers to coordinate and manage public transport as a part of providing whole journey connectivity to improve the attractiveness of public transport as a viable alternative to the private car. The "polluter pays" principle would be applied to provide the funding for the most climate-efficient systems, for example through road user charging.

Essential elements in transport planning to address climate change should include:

- An understanding by central and local government of the needs of rural communities and for a different approach to housing and transport planning, in order to reduce the need to travel[18]
- Securing a public transport network which is attractive to use, affordable and low or zero carbon. Public transport should be required to be more user friendly – e.g. better cycle carrying across all modes with designated wheelchair spaces. The feeble attention to DDA that has been shown by Network Rail has to end: few stations on the mainlines have level access to trains.

[17] https://www.centreforlondon.org/publication/road-user-charging/
[18] See Building and Planning paper

- Permitting cross-subsidy of bus/tram routes within a network to enable the integration of loss-making services and provide access to rural areas

There should be a "string of pearls" approach for bus (or tram) routes connecting rural and urban areas via a series of smaller cycle lock ups/parking spots, enabling users to join services at their nearest point. Planned with care these bus stop/pick up points would also reinforce rural services, such as pubs, shops, cycle facilities, garages. Equally they could allow urban dwellers to access the countryside more easily by public transport given improved cycle carrying facilities onboard. The approach would have three advantages:

1. It would reduce road traffic volumes, freeing up road space and making bus services more reliable and cost effective with better two-way patronage

2. It would remove the need for large edge of town park and ride sites

3. It would enable urban non car-drivers to access the countryside more easily

LEPs should work jointly with local authorities on public transport planning including meeting the needs of rural hinterlands within their social and environmental budgets for carbon reduction.

Traffic free urban centres must become the norm rather than the exception, with provision of wider, safer, segregated pedestrian and cycling routes, good public transport alternatives, and mobility opportunities for the disabled.

Rural lanes should be subject to enforced 40mph speed limits; 20 mph through all villages and town centres. (Such speed limit areas are no longer so difficult to monitor with networked cameras).

A culture of planning journeys by network rather than by mode should be adopted, supported by a high quality digital infrastructure and up to date information about total journeys.

More home working should be facilitated by universal, quality internet connections, enabling more employment to be based at home in rural areas. This would reduce the need to travel while in turn supporting local community services and facilities.

To address the increasing dependency on internet sales delivery, from food to goods, a designated "bundling" delivery system into collection points for rural communities should be introduced.

There should be a single data series for all transport emissions, which would include international aviation and shipping, and a carbon audit of all transport strategies, programmes and plans.

Energy

Energy - Top Lines

1. CPRE will work for a transition to a decentralised, zero carbon energy system that benefits and empowers local communities, and is delivered in harmony with our natural environment and landscapes. Creating social and environmental resilience is key to this energy transition.

2. We want renewable energy done the right way:
    - minimising impacts on landscapes, tranquillity and heritage;
    - bringing net benefits to wildlife;
    - benefitting the rural economy - forming a cornerstone of local enterprise and jobs;
    - supported by or owned by local communities.

    CPRE will also campaign to maximise renewable energy generation and climate change mitigation within urban areas and previously developed land.

3. The planning system must be fit to deliver the green energy transition equitably and effectively. The mass deployment of a wide range of low carbon solutions will require the engaged consent of communities, enabled by participative decision-making and the effective strategic planning of renewable energy assets at national, sub-regional and local levels. CPRE will work for a planning system that is re-purposed to deliver net zero carbon as a priority, with local communities empowered to help shape their local energy response.

4. Demand reduction and energy efficiency are the cheapest and most effective ways to reduce CO_2 emissions – reducing the need for energy in the first place. CPRE will campaign for:
    - policies and programmes that help rural and urban communities deliver new affordable green homes;
    - the deep retrofit of existing buildings to net zero carbon standards;
    - rural communities to be enabled to implement smart, flexible energy systems;
    - a circular economy which reduces overall demand for energy and addresses levels of individual consumption.

5. Affordable low carbon heating: the way we heat buildings will need to change radically in order to deliver net zero carbon. Rural areas face unique challenges in terms of expensive high carbon heating and cooking systems. CPRE will campaign for support for rural communities to transition to low carbon heating solutions, such as heat pumps, in a way that addresses fuel poverty and delivers better comfort and health outcomes for residents.

Energy - The Challenge

The generation and supply of low carbon energy will be core to achieving our goal of net zero carbon emissions by 2045 or earlier. The transition is already well underway, particularly in the supply of electricity where renewables accounted for 33 per cent (%) of electricity production in 2018.[1] However, it is clear that our energy system must be transformed over the next 20–30 years if we are to achieve net zero. Likewise, huge changes will be needed in the generation of low carbon heat and the reduction of energy use through energy efficiency.

Over the centuries, the countryside has changed and adapted to new technologies and circumstances. Change is necessary now and the countryside will have its part to play, including much more land being used for renewable energy technologies and rural communities reducing energy use and adapting to new, flexible energy systems. With this change comes opportunity. CPRE will be part of the solution, not part of the problem. We will work for positive solutions that deliver genuine progress for the countryside and rural communities.

Key to CPRE is how to achieve the net zero transition in harmony with our wider environmental and social objectives, notably enhancing the countryside and landscapes that we love and cherish, promoting rural life and empowering local communities. It is our conviction that these objectives are not incompatible and in many cases they are complementary. But to achieve our goals, the model of development and planning must be radically different.

CPRE will campaign for an energy transformation that benefits local communities, supports a thriving rural economy, is sensitive to our cultural heritage and wildlife and works in harmony with the landscape. Rural communities must benefit from and be empowered by the transition to net zero carbon.

The countryside's role in delivering net zero carbon emissions creates a unique opportunity to create a more resilient and sustainable countryside that is more able to adapt to a changing climate and to provide many of the services society needs.

[1] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/840014/Chapter_6.pdf

Key Issues

An economy based on renewable energy will bring major benefits but will also bring challenges for the countryside; for example, in the increased amount of land required to provide for our energy needs. Hard choices and a pro-active search for solutions that meet multiple objectives will be needed to achieve the UK's carbon reduction goals.

Renewable energy done the wrong way

The current model of renewable energy development has resulted in some poor outcomes for the landscapes, the environment and rural communities. This has led, in part, to the current *de facto* ban on onshore wind. Ultimately, this has led to a slower transition than could be achieved under a fairer model with better practice.

- **Impacts on landscape and character:** large onshore wind and solar installations are often poorly integrated with existing landscape form. Better understanding of landscape character and the universal delivery of good practice is required to mitigate these impacts, especially in relation to cumulative impacts.

- **Inequitable distribution of benefits and impacts**: to date, landscape impact has not been equitable. Wilder and more remote areas and communities, who have fewer resources to participate effectively in planning processes, have taken an uneven share of development. Effective strategic planning is required to achieve a more optimal allocation of renewable energy resources across the country and its landscapes.

- **Impacts on wildlife:** when implemented poorly, renewable energy developments have the potential to impact negatively on nature. However, this need not be the case and emerging evidence has shown how renewable energy developments can be good for wildlife, both onshore[2] and offshore.[3]

- **Lack of community buy-in and benefit:** community-planned or community-owned renewables are a rarity, meaning local communities seldom have a stake in the benefits. This has led to poor outcomes for rural economies and left rural communities disempowered and lacking control over their energy future.

A planning system that is not fit for purpose

The planning system for new energy supply is cumbersome, both locally and nationally, and does not promote effective public engagement or participation. Previous sub-national approaches, based on landscape capacity, set nuanced targets for different renewable energy technologies.[4] This approach has failed to migrate to either local or city-regional planning. More worryingly, energy development planning is largely divorced from low carbon policy aspirations. Thus far, most local planning authorities have not set policies and strategies consistent with meeting their statutory duty to help address climate change.[5] Lack of resources is a key issue as well as a lack of joined-up thinking.

[2] See for example https://www.bre.co.uk/filelibrary/pdf/Brochures/NSC-Biodiversity-Guidance.pdf and http://publications.naturalengland.org.uk/publication/6384664523046912?category=34022 and https://webarchive.nationalarchives.gov.uk/20150902172007/http://publications.naturalengland.org.uk/publication/32027
[3] https://friendsoftheearth.uk/sites/default/files/downloads/marine_renewables_biodiver.pdf
[4] See for example https://www.kirklees.gov.uk/beta/planning-policy/pdf/supportingDocuments/climateChange/Low-Carbon-Renewable-Energy-Capacity-Yorkshire-Humber.pdf
[5] https://www.tcpa.org.uk/planning-for-the-climate-challenge

The scale of local challenge, highlighted by recent Tyndall Centre[6] studies, necessitates a radical re-purposing of planning for climate change, with concomitant resourcing. Further devolved powers, strategies and plans at both city region (and equivalent) and neighbourhood tiers will be needed in addition to radically revised Local Plan policies. Plans and place-making, utilising a wide range of low carbon supply and storage solutions, must ensure that all new developments - from housing to major infrastructure projects - are zero carbon. Currently 25% of all carbon emissions are from existing building stock.

Lack of sufficient action on demand reduction and energy efficiency

To date, good progress has been made by the UK in increasing the supply of low carbon electricity. However, much less progress has been made in the long term reduction of demand through effective energy management, including improving the energy efficiency of homes and buildings. Even with new buildings, current building regulations fall a long way short of net zero carbon requirements. Rural areas face particular challenges in improving a typically older and less energy efficient housing stock with incomes that are, on average, lower than those in the city. Lifestyle changes and energy efficient behaviours are also key to reducing demand.

Carbon intensive heating and rural fuel poverty

Energy supply in the countryside is also problematic; often off the gas grid, rural communities are much more dependent on more carbon intensive forms of heating such as light fuel oil (kerosene). Combined with often hard-to-treat housing stock, providing affordable warmth is problematic[7] and accentuates fuel poverty and poor health outcomes.[8]

[6] See for example https://www.sheffield.gov.uk/content/dam/sheffield/docs/your-city-council/climate-change/Sheffield_Report_V1.3.1.pdf
[7] http://acre.org.uk/cms/resources/new-acre-cg-affordable-warmth.pdf
[8] https://www.cse.org.uk/downloads/file/fuel_poverty_in_rural_england.pdf

Our Solutions

General principles

1. Minimise landscape impact through decentralisation and appropriately scaled development: energy decisions that impact on land use, landscapes and rural communities must be informed by sustainability principles and landscape character considerations, flowing from the UK's commitments within the European Landscape Convention.

2. Rural proof all zero carbon strategies, plans and policies to ensure social and ecological climate change resilience whilst delivering an equitable share of benefits and impacts for all communities across England. Delivery by government departments will need to break out of current 'silo' thinking.

3. Devolve decision-making and funding for the energy transition, recognising the value of delivery by more democratically engaged bodies, particularly local authorities, city regions and other new devolved bodies.

4. Government must take a key role in investing in low carbon innovation and promoting radical behavioural change; market forces alone cannot deliver a rapid switch to low carbon systems.

5. Apply a strict energy hierarchy to future supply, prioritising demand reduction and energy efficiency and then renewables. Exploration and development for coal, oil and gas should be immediately disincentivised. The current moratorium on shale gas should be maintained as it is incompatible with current decarbonisation targets. 'Conventional' gas will be required as a 'bridging' fuel but must be phased out quickly. Investment must be focused on low carbon solutions, including CCS, rather than developing new indigenous fossil fuels.

6. Existing nuclear supply will have a limited, bridging role but build time for new plants means nuclear cannot contribute to the rapid decarbonisation that the climate emergency demands. High costs are also an issue.

Minimising detriment, maximising benefits

1. There needs to be a strong focus on 'brownfield energy first': the use of urban areas and previously developed sites must be maximised, providing low carbon energy services closer to the main centres of population (where energy useage is usually highest).

2. Rural renewable energy sites have the potential to provide multiple benefits and can potentially improve their local environment.[9] Further onshore wind and solar farms must be accommodated sensitively but much more support is required for other locally appropriate solutions, such as roof-mounted solar, hydro, bioenergy and anaerobic digestion, wave and tidal, plus geothermal and energy storage.

3. De-centralised and locally owned energy can provide much of the low carbon generation required nationally but these new 'energy landscapes' must be

[9] https://www.solar-trade.org.uk/about/the-natural-capital-value-of-solar/

integrated with the key benefits we seek from the countryside: beauty, biodiversity, accessibility, recreation and health, and a thriving economy.

4. The landscape's sensitivity and capacity for change must be a more central determinant in locating future renewable energy projects, especially in areas designated for their national importance such as National Parks and AONBs.

5. New national renewable energy guidance for landscapes is required to underpin the roll-out of a new phase of more countryside-friendly energy sites and infrastructure, notably for wind and solar; CPRE will contribute to this with an imaginative and 'can-do' approach; no options will be off the table, including the sensitive use of the green belt. However planning conditions must ensure land can be returned to its original use, when required.

Empowering local communities to shape their local energy response

1. Rural areas are pivotal in the delivery of net zero emissions; local communities must be empowered to help shape their energy future as part of a more inclusive and re-purposed planning process with climate change resilience at its core. Awareness of the carbon impacts of goods and services will be crucial to taking effective action: a simple, single, government backed carbon calculator is required.

2. To reduce friction in the planning and development of new energy sites, and help accelerate delivery, communities must be meaningfully engaged and see tangible local benefits. Weight should be given to schemes that have popular support and *vice-versa*.

3. We want to see new participative approaches to planning for rural energy schemes. This will range from developer-led models where commercial proposals should be shaped at an early stage by local input, to full-blown community schemes.

4. We also propose 'neighbourhood energy plans', underpinned by an effective funding regime for capital projects - to cover upfront costs, with pay back (if loans rather than grants) covered by receipts from energy generated or saved. Provision of community energy support and advice will also be crucial.

Effective and equitable strategic planning and participative engagement

1. To ensure development is directed to the most suitable landscapes, a more strategic approach to planning for renewables is required. This will also give affected communities (of place and interest) reassurance that impacts, as well as benefits, are shared equitably.

2. Roll-out should follow a hierarchy of landscape capacity, following landscape character assessment, and carried out at an appropriate sub-national scale where Natural Character Areas can be agglomerated to allow allocations (targets) rooted in sensitivity to change; sensitivities in relation to biodiversity, cultural heritage and amenity must also be respected, along with nationally designated landscapes.

3. This strategic approach to planning renewables will be best led by emerging city regions and county authorities or, as an interim mechanism, through the existing duty to co-operate between local authorities.

4. Forward planning of capacity and potential, in a manner analogous to housing provision, will assist in resolving difficult decisions earlier in the development process, as long as there is early and meaningful public engagement.

5. This should be complemented by a 'bottom-up' approach where communities are incentivised to come forward with local energy schemes, including additional resources for 'neighbourhood energy plans' to front load engagement.

6. The transition to zero carbon can be best enabled and delivered through a re-purposed land use planning system. However, this cannot happen without giving local authorities proper resourcing to plan for climate change.

Demand reduction and energy efficiency

1. Reducing energy demand by efficiency, conservation, energy management and enhancing resource productivity is key; the path to carbon zero can and must be accelerated by restraining and reducing consumption.

2. We will campaign for changes to the building regulations to ensure that all new homes and commercial buildings are built to zero carbon standards (both embedded and operational) and support for the industry to ensure they are capable of delivering this to a high standard.

3. We will campaign for policies and programmes that facilitate the deep retrofit of the existing buildings to very low or net zero carbon standards with a particular focus on rural housing that is typically older and less energy efficient.

4. We must go beyond current narratives of clean or green growth and aim for a circular economy; we need new models of investment have will ensure that future growth patterns are more equitable: socially, environmentally and spatially.

5. Product substitution (especially in the construction sector) away from carbon-intensive materials such as steel, aggregates and cement, whilst increasing the use of new materials and methods, will bring multiple benefits.

6. Making resource use more sustainable has benefits beyond carbon reduction, especially for natural resources such as minerals, which can have serious detrimental impacts on the countryside, both at the point of extraction and onward transport to end users.

7. Changes in individual consumer demand (resource consumption) are also needed and will have an important role in decreasing our carbon footprint.

Low carbon place making

1. The planning system has a crucial role in reaching net zero by delivering low carbon communities, taking into account the opportunities and constraints of both rural and urban areas.

2. New development in rural locations must be sustainable (i.e. fit for the climate emergency) or be made so by minimising the need to travel (particularly by car) and maximising low carbon mobility; this test must be met and delivered via planning

conditions or other form of enforceable agreement or arrangement (e.g. a reformed CIL).

A smarter decentralised energy system

1. We want to see a smarter decentralised energy system as a way to reduce the impact of large-scale energy generation on the countryside. Future energy sites (including battery storage) and associated transmission and distribution infrastructure must be at an appropriate scale and better integrated within the landscape. To minimise landscape impact, a new coastal ring main (offshore grid) will be essential in distributing energy from offshore wind farms.

2. Within a decentralised approach, the capacity of urban areas to contribute a fair share of low carbon supply and energy saving will be crucial and will also assist in reducing transmission distances and losses. This will be enabled taking a whole system view as the ability of different forms of energy (electricity, gas, and heat) to undergo a sustainable transformation to reach net zero. Making the best use of urban and commercial roof spaces for solar PV will be essential.

3. Smart management of energy demand relies on simple digital solutions; enhanced rural connectivity (using superfast fibre broadband) must be accelerated to enable this. This will have many concomitant benefits for rural economies and communities.

Affordable low carbon heating

1. Affordable warmth must underpin delivery of rural affordable homes with a focus on heat pumps, heat recovery and solar solutions for areas that district heating or gas (or hydrogen) grids will not reach. We will campaign to outlaw new gas boiler installations from 2025 and ensure resources are made available to support the transition to alternative modes of heating.

2. Support and resources are required to enable the delivery of local energy schemes, which engage with communities and meet local needs, including affordable warmth. We will campaign for a clear, rural-proofed heat strategy to be drawn up as a matter of urgency and implemented by no later than 2025.

Building & Planning

Building & Planning- Top Lines

1. We need development to meet local needs, but all development, new and existing buildings, must contribute to efforts to mitigate and adapt to the climate emergency. Sustainable development needs to be redefined to focus on living within environmental limits and the importance of addressing the climate emergency.

2. To do this the planning system needs a radical overhaul to deliver zero carbon development alongside social, economic and other environmental benefits and not as a trade-off with them. This includes, ensuring the climate change duty in the Planning and Compulsory Purchase Act is monitored and enforced, with penalties for failing to comply and meet binding carbon targets. This should ensure that carbon, and other, emissions and other environmental impacts are properly and openly considered in decision-making processes.

3. Policy making and decision taking should be guided by a national strategy and make the best appropriate use of land, reflecting 'smart growth' principles. This includes prioritisation of suitable urban brownfield sites, increased density, co-location of homes, workplaces and services and the best use of existing infrastructure, at the same time as protecting and enhancing the open spaces for all of the benefits they provide. This requires a strategic approach to development to integrate housing with energy and infrastructure planning across different spatial scales.

4. Building regulations need to be radically tightened up to ensure that new and existing buildings meet zero carbon standards. New buildings should be designed to a high quality and built to last, not just in terms of the materials used in their construction, but enabling them to be repurposed without significant alteration for different uses and hence extend their lifetime.

5. More must be done to retrofit not just existing buildings, but entire built-up areas, to be more energy efficient, less carbon intensive and incorporate more green and blue infrastructure.

6. Communities should be empowered to plan to take action on transitioning to zero carbon more quickly than national policy requires.

The purpose of this paper is to set out CPRE's position on how decisions relating to built development of all kinds can best be made to reduce the emissions that contribute to climate change and adapt living environments to cope with its impacts.

CPRE already maintains a suite of policies that promote types of development that would contribute to the mitigation of and adaptation to climate change. These policies, which will be revisited over the coming months to ensure they fully reflect the climate emergency, are listed and briefly summarised in Appendix 1.

This paper avoids replicating those existing policies, and should be read alongside CPRE's overarching policy statement on the climate emergency, and detailed policies relating to interactions with:

- Land use, farming and forestry
- Transport
- Energy

Building and Planning – The Challenge

Built development has an impact on climate, with emissions that contribute to climate change produced because of a change in land use and throughout the lifecycle of the development. For example, residential buildings accounted for 18% of carbon dioxide emissions in 2018,[1] and direct building emissions accounted for 37% of all greenhouse gas emissions in 2012.[2] Furthermore, the changing of land use to developed uses results in a loss or reduction of the carbon sink capacity of soils, as well as the reduction of other ecosystem services that may be essential for the mitigation of and adaptation to climate change.

For almost three decades, we have known that sustainable development with better social, economic and environmental outcomes depends upon co-locating new homes and jobs and making more efficient use of land for development, through building at higher density and recycling previously developed land in urban areas. However, the planning system and guidance is not fit for this purpose, let alone a zero net carbon outcome, despite a duty under Section 19 of the Planning and Compulsory Purchase Act 2004 (as amended) to ensure that plans "contribute to the mitigation of, and adaptation to, climate change".

Some 80% of buildings that will be in existence in 2050 are already constructed, and many more will be constructed under policies and consents that are already in place. Many plans guiding development for the next 10-15 years - halfway to that target date – are in force now, without the radical policies embedded in them that are required to meet the government's 2050 net zero target, let alone 2045. Decision making is also lagging behind, with climate and carbon not being given necessary priority over other considerations.

How has this come about?

Policies and regulations governing development and construction have been influenced by a short-sighted dogma of economic growth at all costs. Most people and organisations involved in the development industry make vast sums of money from the enterprise while causing untold damage to the environment, the costs of which are mostly passed on to the consumer, or, more commonly, to society at large. This focus on need for economic growth means that environmental concerns are overridden in decision-making processes.

What does it mean to people and the countryside?

Current development is not creating the liveable communities that are sustainable and allow residents to live low carbon lives. Action to ensure that the built environment meets the challenge of net zero by 2045 also has many other benefits, including creating healthier, thriving communities.[3]

[1] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/790626/2018-provisional-emissions-statistics-report.pdf
[2] https://www.theccc.org.uk/wp-content/uploads/2013/12/1785b-CCC_TechRep_Singles_Chap3_1.pdf
[3] https://www.england.nhs.uk/ourwork/innovation/healthy-new-towns/

Key Issues

The UK government, many local authorities and many parish councils, have – rightly – declared a national or local climate change emergency. CPRE will expect government and local authorities to act on their commitments, and will publicly hold them to account to ensure that their commitments are not simply greenwash.

The planning system must deliver zero carbon development by 2045. The key issues preventing this are:

- Lack of effective planning at national, strategic, and local levels to deliver net zero carbon. This is a result of a lack of a clear national strategy for how we use land well that filters down into local action, a lack of integration across strategic planning matters to integrate planning for different assets such as housing and infrastructure and low levels of resourcing

- Lack of implementation and enforcement of the climate change duty in the Planning and Compulsory Purchase Act, 2004, without a clear national reduction framework and guidance on how to implement this locally

- Need to retrofit existing buildings and entire built up areas for net zero carbon. England's regulations lag behind other nations

- Democratic deficit for communities in both local planning and national infrastructure planning and decision-making

- Land speculation and fiscal incentives that undermine strategic planning and development that represents the best appropriate use of land, or do not consider the natural capital value of land for mitigating climate change

Our Solutions

Decision-making processes regarding building and development must be radically repurposed to decarbonise both construction and the subsequent use of buildings, places and infrastructure.

There are a number of fundamental changes needed to deliver this:

1. Carbon emissions and other environmental impacts should be properly and openly considered in decision-making processes. This includes strengthened environmental assessment procedures, to ensure new development meets the standards required to deliver net zero by 2045.

2. Strategic and regulatory regimes must be integrated far more effectively, including coordination: across different spatial scales of policy making and decision taking guided by a national strategy to ensure the best appropriate use of land and including the devolution of decision making processes to the most appropriate level for the matter at hand; between different types of development to support mixed use and colocation of development; different stakeholders to ensure an equitable approach; and subsequent monitoring and enforcement.

3. Decision-making processes that lead to infrastructure construction as well as control over and management of infrastructure itself must be devolved to the most appropriate level, for example catchment area for water resources or neighbourhood level for designing a high street, to ensure accountability and understanding of relevant issues. This will/should occur in the context of a nationwide coordinating framework.

4. This climate change duty in the Planning and Compulsory Purchase Act should outweigh national policy requirements, such as the NPPF, so that requirements for development to address the climate emergency cannot be set aside in favour of other outcomes desired by national policy. The duty also means that strategic and local plans should be based on evidence relating to the Climate Change Act targets (including identifying baseline carbon emissions data), and monitoring of plans in annual monitoring reports should demonstrate how development is contributing to meeting those targets.

5. Stronger building standards, which have been applied in many other countries for decades, are needed to ensure a basic minimum standard to meet net zero targets.

6. More power must be given to communities, at the very least through effective public engagement or participation, and preferably through local governance and direct commissioning/management of development projects by communities. This would ensure the type, scale and nature of development is determined by identified needs.

7. The temptation to speculate in land value uplift should be ended through strong but equitable land value capture. The additional funds should be recycled into the community, infrastructure and environmental gains.

There are also a range of specific approaches that can deliver mitigation and adaptation to the climate emergency.

Strategic planning

Development should make the best appropriate use of land, and reflect 'smart growth' principles (CPRE publishes separate policies and guidance on these principles, and these are listed in Appendix 2).

This includes the prioritisation of suitable brownfield sites, co-location of homes, workplaces and services and the best use of existing infrastructure. At the same time, policies should protect the open spaces that are essential to address the climate emergency, assist with a sustainable water cycle, and provide habitats for wildlife and environments that contribute to our physical and mental well-being.

At a national scale, policies should work to regenerate economies suffering from social and economic deprivation, and more equitably address regional disparities in pressures for growth. Unfettered growth in economically buoyant areas is putting severe pressures on the environment in these locations, while needs of other communities go unmet. Strategic development that focuses on social and economic benefits can help to create thriving communities that live within environmental limits.

Policies should also protect and enhance the countryside next door to our towns and cities, including Green Belts, for the role they play in reducing the urban heat island effect, acting as a carbon sink, supporting biodiversity, and providing water resources and sustainable food production close to where people live. Investment in these areas can provide a whole host of benefits, including helping urban communities mitigate and adapt to climate change.

Development design

New development should be designed in a way that mitigates and adapts to the climate emergency. This is becoming a focus of industry, not just a CPRE pipe-dream. For example, the UK Green Building Council has an ambition that, by 2030, 'all buildings and infrastructure will, throughout their lifetime, be climate resilient and maximise environmental net gains.' This can be done through high-density developments that co-locate homes with services and facilities. This in turn encourages the use of sustainable modes of transport, such as walking, cycling and public transport, and can help to combat wider issues such as loneliness and health and well-being.

The layout of streets and buildings can also be planned to help mitigate and adapt to climate change, for example reducing wind chill and enabling the use of passive solar heating to reduce demand on carbon intense heating and cooling systems. This also ensures carbon and climate are considered over the lifetime of the development, and could help achieve zero carbon standards for individual buildings.

Integration of 'green and blue infrastructure', such as trees, sustainable drainage systems and allotments, can also future-proof development by reducing temperatures, cleaning the air and reducing flood risk, while at the same time designing a much nicer place to live.

Building design

Building regulations for both new and existing buildings need to be improved. This should include standards to achieve zero carbon. The standards must incorporate life cycle emissions and the different pathways these are produced, including in construction, transport, and resource consumption throughout a building's lifetime. CPRE supports the introduction of standards along the lines of an enhanced 'Code for Sustainable Homes'.

New technologies should be explored, such as those used in the construction of modular homes, where these will result in the reduction of carbon footprint of the materials.

New standards should also address longevity. Buildings should be designed and built to last, not just in terms of the materials used in their construction, but enabling them to be repurposed without significant alteration for different uses and hence extend their lifetime.

Buildings should be designed and constructed so that they, and the land around them, serve multiple purposes, not just enabling a mixture of uses in the traditional sense (e.g. retail, office, residential) but uses such as energy generation, rainwater collection and providing habitats for local wildlife.

More must be done to retrofit existing buildings and places where suitable (excluding historic places when the character would be irreversibly lost by such changes) to be more energy efficient and encourage multiple functions. This can be through traditional energy conservation measures such as insulation and double-glazing, or by broad-scale new infrastructure like district combined heat and power systems. Incentives to do this are needed to address the expense of doing so, particularly in rural areas. For example, equalising the levels of VAT payable on repairs and alterations (20%) with that on redevelopment (0-5%) would help to promote improvements and preserve the carbon embodied in existing buildings.

Appendix 1: Existing Climate-Friendly CPRE Policies

Brownfield (2008)

Our policy on brownfield land says: "Land is a precious resource, and must be used wisely. CPRE supports a 'brownfield first, greenfield last' strategy as a general principle. However, just because a site is brownfield does not mean it should necessarily be developed."

Making the best use of suitable brownfield sites enables the reuse of existing buildings and infrastructure (preserving embodied carbon and reducing the need for new infrastructure) and co-locates new development with existing services (reducing the need to travel). When we say "suitable" brownfield sites, we mean those that are well located, and not those that have environmental (including natural capital), cultural or recreational value that should be conserved.

Planning for housing (2013)

Our policy on planning for housing covers a wide range of issues emphasising the need for planning processes to be democratic and transparent, evidence based and environmentally responsible. This includes policies seeking compact walkable communities, responsible densities of development, the principle of developing suitable brownfield sites first, a sequential approach to identifying suitable sites for housing, co-locating homes with jobs and services, and high performance standards for energy efficiency of homes.

The policy also refers to CPRE's support for 'smart growth' principles (outlined for ease in Appendix 2).

Minerals and quarrying (2006)

Our policy on minerals and quarrying seeks a number of interventions to reduce the environmental impact of extraction activities. These are mainly framed in terms of the direct impact of quarries and mines on the character and tranquillity of the countryside. However, aims such as "achieve the more prudent use of natural resources through reuse, recovery and recycling, use of alternative (including non-aggregate) materials and techniques" would also benefit climate action.

The rural economy (2014)

Our policy on the rural economy also covers a wide range of issues. It states that "economic growth, social needs and environmental limits must be reconciled not traded off against each other" because a "high quality rural environment is vital for public well-being and is an integral part of a strong and resilient rural economy". The policy recognises the potential for "more extreme weather events [to] threaten key rural infrastructure and the viability of farming and horticulture" and champions the "capacity of the countryside to deliver multiple natural goods ('ecosystem services')". Other parts of the policy replicate the desire to co-locate homes, jobs and services.

Appendix 2: ‘Smart Growth’ Principles

Principles of Smart Growth Urban areas work best when they are compact, with densities appropriate to local circumstances but generally significantly higher than low-density suburbia and avoiding high-rise. In addition to higher density, layouts are needed that prioritise walking, cycling and public transport so that they become the norm.

We need to reduce our dependence on private motor vehicles by improving public transport, rail-based where possible, and concentrating development in urban areas.

We should protect the countryside, farmland, natural beauty, open space, soil and biodiversity, avoiding urban sprawl and out-of-town development.

We should protect and promote local distinctiveness and character and our heritage, respecting and making best use of historic buildings, street forms and settlement patterns.

We should prioritize regeneration in urban areas and regions where it is needed, emphasising brownfield-first and promoting town centres with a healthy mix of facilities.

Civic involvement and local economic activity improve the health of communities.