

Climate Change Committee 2021
Progress Report to Parliament on
Reducing Emissions
Gemserv Summary Briefing

28 June 2021



Gemserv

MAKING THINGS THAT MATTER WORK BETTER FOR EVERYONE



Table of Contents

Overview.....	2
Progress and Ambition	3
Progress and Ambition in Emissions Reductions.....	3
Progress and Ambition in Climate Policy	3
Resilient Recovery from the COVID-19 Crisis.....	4
Buildings and Energy Efficiency.....	5
Low Carbon Heat.....	8
Surface Transport.....	12
Manufacturing and Construction	15
Electricity Generation and Fuels	18



Overview

The UK Government showed great leadership when it announced its target to reach net zero emissions by 2050. However, setting a target is only the first step and this ambition must be delivered upon. A pattern is emerging where Government strategies are published later than planned and, when published, fall short of the level of ambition required to meet net zero. They must act to reverse this pattern and deliver upon its targets through setting out a strong policy framework to support the route to net zero. COP26, which the UK is hosting later this year, provides a platform for change and this opportunity should not be missed.

The journey to Net Zero is far from half done and progress so far has been dominated by activity across the power sector. Action is required across all areas of the economy to deliver Net Zero and the next decade is critical for climate action. Without more stringent action, 1.5 °C warming will be exceeded in the early 2030s, with the Climate Change Committee (CCC) noting that “the challenge has shifted decisively from target-setting to delivery.”

The CCC’s report outlines seven indispensable elements to the transition. These are areas where it is absolutely crucial good progress is made. These include support for the roll out of EVs, a comprehensive policy package for buildings decarbonisation, greater policy support for manufacturing decarbonisation and the delivery of a Hydrogen Strategy. These areas are covered in further detail within the relevant sections of this briefing. Whilst emissions reductions are key to net zero, it is critical that climate adaptation is not neglected. The CCC’s report on adapting to climate change is available [here](#). A full list of the CCC’s recommendations spanning across emissions reduction and climate adaptation is available [here](#).

Ilias Vazaios – **Director of Low Carbon**

“The 2021 Committee on Climate Change report to Parliament comes during a key year for the climate debate in the UK which is hosting COP26 this November. The Government needs to be seen to lead; the tightening of the 6th Carbon Budget to cut emissions by 78% by 2035 and the Prime Minister’s Ten Point Plan for a Green Industrial Revolution to mobilise £12 billion of government investment by 2030 show substantial ambition. Policy detail is however still lacking in key areas but with the upcoming publication of much awaited consultations such as the Heat in Buildings Strategy, Hydrogen Strategy, and the Net Zero Review by Treasury we expect a clearer debate to emerge. The way forward for policy according to the CCC needs to incorporate ambition and clarity but also be based on consumer fairness and take into consideration a new post Covid environment; for instance, building emissions increased 4% this year due to new occupancy trends.”



Progress and Ambition

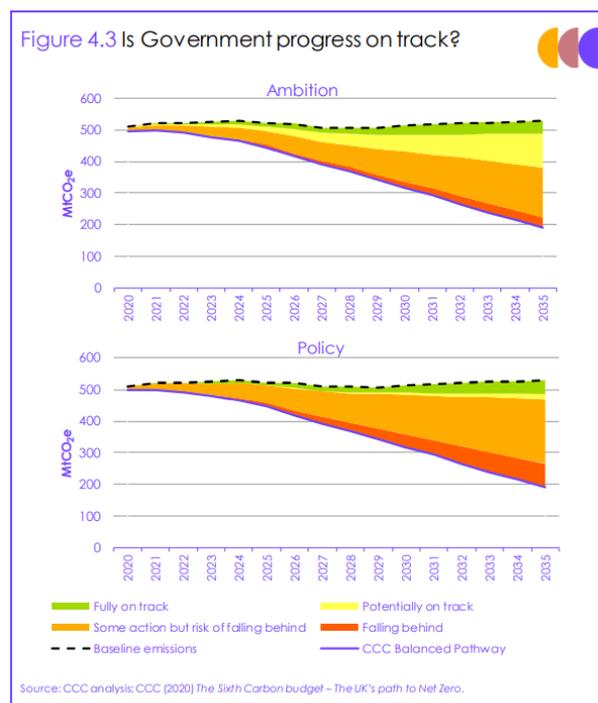
PROGRESS AND AMBITION IN EMISSIONS REDUCTIONS

The UK has made positive progress towards decarbonisation, and this must not be forgotten. The UK has also done well to demonstrate that simultaneously reducing emissions and growing the economy, is indeed possible, with UK emissions nearly 50% below 1990 levels. However, progress has been dominated by the power sector; in order to meet the Sixth Carbon Budget, UK emissions outside the power sector must fall by an average of 17 MtCO₂e over the next 15 years. This is over three times the average fall of just 5 MtCO₂e per year that was observed between 2009 to 2019. Looking across the Devolved Administrations, Scotland has decarbonised higher than the UK average, whilst Wales and Northern Ireland have been slower, largely influenced by the speed and scale of power sector decarbonisation.

PROGRESS AND AMBITION IN CLIMATE POLICY

Substantial progress has been made since last year, with key policy announcements published. Of the 92 recommendations made within the CCC's 2020 Progress Report, 72 have been actioned, to some extent. However, more needs to be done, with just 11 of the recommendations proposed having been met in full.

Although ambition is beginning to align with what is required for net zero, there are clear gaps and where policy plans have been set out, these plans lack detail and/or fail to cover the whole issue (see figure right). In fact, credible policies for delivery currently cover only 20% of the required reduction in emissions to meet the Sixth Carbon Budget.



There is a danger that some of the broad announcements made will fall short of the CCC scenarios when it comes to implementation for two key reasons:

1. Government announcements to date have focused on technologies, and not the potential for changes in consumer behaviour, initiated via enabling measures and nudges, to encourage emissions reduction.
2. Some commitments are ambiguous, and this may lead to real world implementation falling short.



Resilient Recovery from the COVID-19 Crisis

James Higgins – **Partner, Low Carbon**

“It has been a difficult year for many across the UK. The reduction in economic activity associated with response to the pandemic has led to a reduction in emissions which is steeper than the annual change needed on the pathway to Net Zero. We should not be fooled by this change as emissions may bounce back as we emerge from the pandemic restrictions, however. I believe that some changes resulting COVID-19 will leave a positive legacy. There is potential for lasting impacts from new working patterns and digitisation of a wide range of services, for example NHS appointments. Appreciation of local green spaces and the staycation are all changes which may be with us for long-time yet.”

COVID-19 has cast a ‘long shadow’ over the nation, but lockdowns have led to a record decrease in UK emissions in 2020 by around 13%. Unfortunately, this fall in 2020 is transient and will have ‘practically no impact’ on the UK’s past and future contribution to global warming and does not reflect structural changes in our infrastructure. However, the report highlights that there are key lessons that can be taken from the pandemic:

1. The critical importance of effective planning for high-impact eventualities
2. The ability of Government to act with pace and scale when required
3. People are willing to support change when they have the information before them

The pandemic has highlighted the need for increasingly resilient networks and infrastructure, and this will be continued as we start to be subject to greater climate risks. The pandemic has also demonstrated the importance of preparing for known risks and the value of scientific advice, which will both be vital in successfully confronting the climate challenge. Our energy (and digital) networks have demonstrated they can be resilient to profound changes in use. The transition towards Net Zero will only increase the challenges of operating an electricity system with high shares of variable and inflexible generation.

It will be important to sustain climate-positive changes that have developed during the pandemic. These changes happened remarkably quickly but they can rebound just as quickly and in the absence of underlying structural changes emissions are likely to rebound in most sectors in 2021. The Government must also act decisively to mitigate the negative changes that could jeopardise efforts towards Net Zero. For example, there is concern over a ‘car-led’ recovery as the public are fearful of public transport. Decarbonisation policy must rebuild the public’s confidence in the safety of public transport to avoid this and the heightened emissions it would entail.



Buildings and Energy Efficiency

Progress in Energy Efficiency		
	Ambition	Policy
Residential – energy efficiency and low-carbon heat in new homes		
Residential – energy efficiency in existing homes		
Non-residential – energy efficiency and behaviour change		

Key

- Fully on Track, Limited Risks
- Potentially on Track, Some Risks
- Some Action, More Significant Risks
- Falling Behind, Major Risks

Progress to Date

Buildings remain one of the most important sectors of the economy to decarbonise on the road to net zero by 2050. In 2019, buildings accounted for 18% of UK emissions, 88MtCO₂.

What the CCC said on progress towards decarbonising buildings to date:

‘Buildings saw some progress from policy-driven action in the first half of the past decade. Temperature-adjusted emissions fell by 7% between 2009 and 2016, but have risen since. The overall efficiency of the boiler stock has improved, but there has been minimal progress on improving insulation or switching to low-carbon heating in recent years... progress in upgrading the building stock with the necessary measures over the last decade has been very poor.’

The CCC states several times that several key strategies and plans for net zero are not yet published, or have been delayed. This includes the UK Government’s Heat and Buildings strategy, which was originally due by summer 2020, not yet published. This strategy will be essential in implementing a comprehensive policy package for buildings decarbonisation, and enshrine the long-term standards framework in regulation and law, to finalise the roadmap for decarbonising the UK building stock.



The Ministry of Housing, Communities & Local Government (MHCLG) has also been identified for not fully supporting local government to play its part in the transition to Net Zero. Progress has fallen short to date on ensuring that building standards are fit for purpose and properly enforced. The current Planning Bill misses the powerful opportunity to ensure that developments and infrastructure are compliant with Net Zero and appropriately resilient to climate change.

Sam Crichton - **Head of Policy Insight and Engagement, Low Carbon**

“It is clear that progress is lagging behind where it needs to be. This is not a revelation but something we have been stressing for some time. The lack of policy to support significant improvements to thermal efficiency across our housing stock is a concern from a carbon and fuel poverty perspective. Recent policy announcements have demonstrated clear demand from the public when support is made available which can only be seen as a positive sign. It is hoped that the upcoming Heat and Buildings Strategy will provide the foundations needed for a long-term, ambitious matrix of policies to be implemented to support the diverse needs and challenges of homeowners and businesses.”

Moving Forward

The case for investing in buildings retrofit as part of economic recovery remains strong. However, supply chains are well below the levels they need to be at in order to deliver Government commitments on fuel poverty, energy efficiency and heat over the next decade. Constraint on funding can lead to mixed results, see the example of the severe consequences to the Green Homes Grant Scheme (page 166), therefore investment of capital must be significant alongside robust policy framework to drive sustainable change.

There has been little of the necessary progress in upgrading the building stock in terms of energy efficiency, insulation rates remain well below the peak market delivery achieved up to 2012. However, this does demonstrate the clear potential for growth if an effective policy package is put in place.

Ambition on energy efficiency in buildings and associated policy is low. For residential energy efficiency in existing homes success is contingent on a comprehensive framework of standards, Energy Performance Certificates and Standard Assessment Procedure (SAP) being made fit for purpose to drive the right measures, and on a successor to the Green Homes Grant. Installations of loft and solid wall insulation are only a third of the rate needed by 2021 in the CCC pathway.

For non-residential energy efficiency the trend is similar - commitments of 20% efficiency savings in business and 50% reduction of public emissions by 2032 are in line with the CCC pathway. However, policy proposals only cover private-rented and larger buildings to date and there is little evidence for reduced energy demand at present.



Key Targets to be Achieved in Buildings and Energy Efficiency

Date	Key Targets
Before COP26	- Heat and Buildings Strategy published.
By 2024	- Legislation for the Future Homes and Future Buildings Standards introduced ahead of 2023, and should come into force by 2025 at the latest.
Mid 2020s	- Rapid ramp up of energy efficiency deployment in buildings.



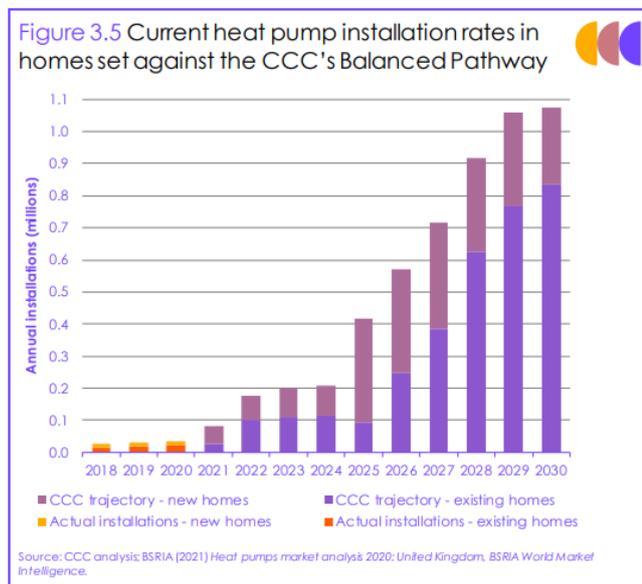
Low Carbon Heat

Progress in Low Carbon Heat

Target Area	Ambition	Policy
Residential Low Carbon Heating in Existing Homes	●	●

Progress to Date

Progress in the deployment of low carbon heat in homes has been poor. There has been a marginal improvement in the deployment of heat pumps (reaching 36,000 in 2020, of which 23,000 were retrofit installations), largely driven by the Renewable Heat Incentive. However, installation rates remain far from what will be required over the next few years if we are to reach net zero.



Whilst the Government’s target of 600,000 installations per year by 2028 was welcomed, it falls short of the deployment rate required in the CCC pathway which calls for over 900,000 per annum by 2028. There is insufficient financial support planned for heat pumps. Deployment is also poor in non-domestic buildings, with an installation rate of less than 1000 per annum.

Rory Mathews – **Senior Economic Analyst, Low Carbon**

"It comes as no real surprise that the CCC views the progress made towards the deployment of low carbon heat in homes as poor. The lack of policy to support the rhetoric and ambition heard from the Government has been a clear chasm in the plans for reaching net zero for some time now. The long-awaited Heat and Buildings Strategy will hopefully plug this gap and is desperately needed, with around one home needing retrofitting with low carbon heat every 30 seconds between now and 2050, time is very much of the essence and as indicated in the report the delay in publication will only exacerbate this."



The required reductions in F-gas emissions are expected to be achieved under the existing strict regulations. However, regulation is only as good as the rate of compliance and the Environmental Audit Committee have reported some evidence of suspected non-compliance, which will need to be considered, alongside the role of alternative refrigerants.

The Government commitment on heat networks falls far behind the CCC pathway. 2 TWh of low carbon heat networks have been committed by Government by 2030 which is significantly lower than the 25 TWh under the CCC pathway. There are currently no annual public statistics on low carbon heat networks and the CCC's report urges the Government to report annually on the total heat delivered via heat networks, split by heat source in order to allow progress to be monitored. According to the CCC, there is insufficient financial support planned for low carbon heat networks.

Brendan Murphy – **Senior Consultant, Low Carbon**

“Heat networks will play an essential role in our journey to net zero and whilst the Government is making good progress, it is clear that the sector needs additional financial and policy support, as well as good regulation to truly meet its potential.

The Heat Networks Investment Project launched the UK on its pathway to decarbonising heat, but it is just one piece of the puzzle. The introduction of area-based plans and heat network zoning will be key to increasing local delivery. We welcome the recent announcement of the Green Heat Network Fund transition scheme and subsequent main scheme, whilst also noting the CCC view that this might be sufficient in the long run. Our work with the sector has emphasised the need for a clear market framework and regulation to enable growth, and we look forward to working with Government to develop these areas to enable the heat networks sector to grow.”

Key targets for hydrogen have been set including that by 2024 business models for hydrogen will need to be up and running, with low carbon hydrogen production demonstrated at scale via 1 GW hydrogen capacity by 2025. Strategic decisions on the future of the gas grid, including planned conversions of the gas grid to hydrogen need to be taken by the mid-2020s and new boilers will need to be ‘hydrogen-ready’ by 2025 at the latest.

Key Developments

Some key developments over the past year across the UK have been outlined below:

1. The Government proposed to legislate in 2024 for the Future Homes Standard to be introduced in 2025 and plans to consult on ending gas grid connections to new homes built from 2025.
2. The Scottish Government have proposed regulations to require zero or near emissions heating in existing buildings at certain trigger points (e.g. heating system replacement) from 2025.



3. UK Government have set an ambition for all newly installed heating systems from the mid-2030s to be low carbon, or appliances which can be converted to a clean fuel supply.
4. UK Government have also announced an ambition to deliver 600,000 heat pump installations per year by 2028.
5. Plans for hydrogen trials from 2023 have also been announced, alongside a plan to consult on the role of hydrogen-ready appliances.
6. BEIS is finalising proposals for the £270 million Green Heat Network Fund.
7. The Heat Networks Bill is going through the Scottish Parliament.
8. The Green Jobs Taskforce was launched.

Moving Forward

The CCC highlight a key next step for building decarbonisation as just ‘getting on with it’. Recognition is needed of the importance of a geographically planned approach to heat decarbonisation, with plans introduced to deliver it. Commitments are lagging in areas with potential for early progress. The priority now must be on implementing a comprehensive policy package, and enshrining the long-term standards framework in regulation and law, to finalise the roadmap for decarbonising the UK building stock.

The UK Government’s long-awaited Heat and Buildings Strategy must set out the trajectory of standards on heating emissions, alongside policy proposals to deliver ambitions in such a way that works for households and who will pay for building decarbonisation (the CCC scenarios imply funding levels of £1 billion a year through the next decade, with a growing role for low-carbon heat alongside energy efficiency). The CCC call for the strategy to signal a clear route to expanding heat pump and heat network supply chains. Some specific areas for focus have been outlined below.

1. There are currently no plans to reform price signals in order to drive low-carbon choices, and existing funding streams are set to fall away. **A multi-year programmatic funding regime is therefore needed to support low carbon heat deployment.** This is particularly for commercial heat pump deployment (installations over 45 kW), where no support mechanism is in place. Furthermore, grants of up to £4,000 are unlikely to be sufficient for medium sized installations of up to 45 kW given capital costs of £750-1550 per kW.
2. **Further action is required to ensure EPCs support low carbon heat deployment.** Onsite generation should not be treated as a substitute for energy efficiency or low carbon heat.
3. The current connection scheme is a barrier to the uptake of low carbon technology such as heat pumps and this needs to be addressed.
4. The Government must establish a **formal framework to drive decisions on heat infrastructure and zoning** and should consider the role for area-based energy plans. A programme of research is



required in 2021 to identify areas unlikely to be suitable for hydrogen, alongside priority areas where hydrogen may be feasible to help target deployment of electrification.

Key Targets to be Achieved in the Low Carbon Heat Sector	
Date	Key Targets
Before COP26	<ul style="list-style-type: none">- Heat and Buildings Strategy.- Hydrogen Strategy, and consultation on hydrogen business models.- Governance framework and timeline for decisions on the conversion to hydrogen of the gas transmission and distribution networks.
By 2024	<ul style="list-style-type: none">- Legislation for the Future Homes and Future Buildings Standards introduced ahead of 2023, and should come into force by 2025 at the latest
Mid 2020s	<ul style="list-style-type: none">- Demonstrate low-carbon hydrogen at scale via 1 GW of hydrogen production capacity by 2025- Strategic decisions on the future of the gas grid- All new boilers 'hydrogen-ready' by 2025 at the latest
By 2030	<ul style="list-style-type: none">- Heat pump installations at scale (1 million / year)- Sales of oil and coal heating in homes phased out (2028)
Over the 2030s	<ul style="list-style-type: none">- Sales of gas boilers to all homes and business phased out (by 2033)



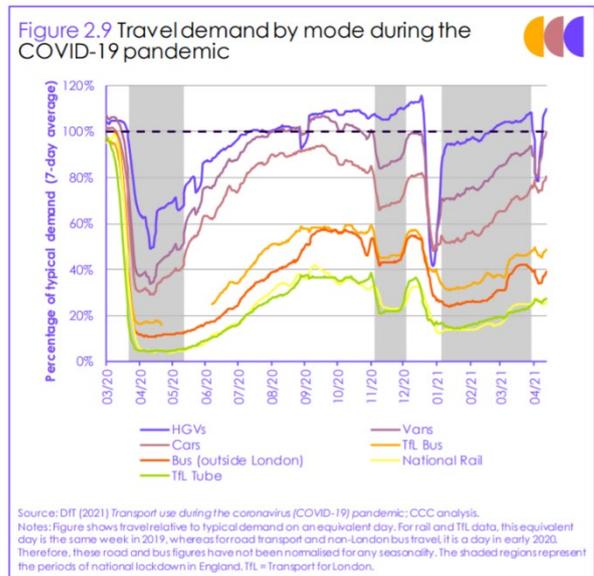
Surface Transport

Progress in the Surface Transport Sector

Target Area	Ambition	Policy
Zero-Emission Cars		
Demand-side Behavioural Changes		

Progress to Date

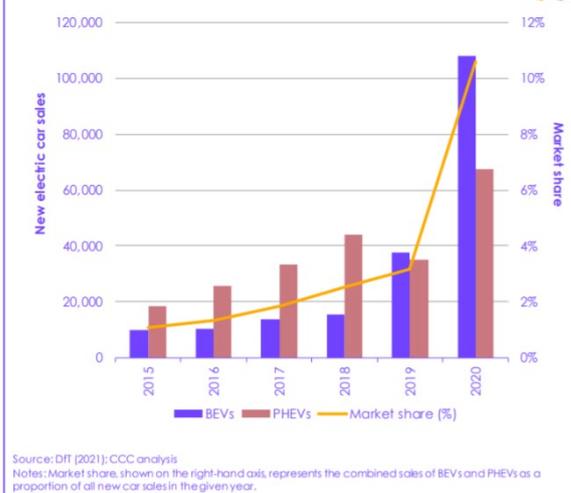
Over the past decade, surface transport has been one of the worst performers in sectoral decarbonisation, falling by only 1% from 2009 to 2019. Progress in the form of electric vehicle uptake has been offset by trends towards longer journeys, and preference for larger vehicles. The huge fall in emissions in 2020 (18% from 2019), is explained clearly by lockdown measures and work-from-home orders (Figure right). Whilst change across many sectors due to COVID are arguably temporary, there is a chance for a permanent positive paradigm change in the way people travel as part of their professional and personal lives. Flexible and remote working therefore presents an opportunity to ‘lock-in’ a sizeable portion of that 18% reduction.





The Government has committed to a fossil-fuel vehicle phase-out by 2030, something which broadly is aligned with the recommendation of the CCC. However, the caveated allowance for hybrid sales to 2035 requires clarification. The ambiguity around which vehicles possess ‘significant zero-emission capability’ could significantly dampen progress in this area. The market for electric vehicles has performed exceptionally well despite the events of the past year-and-a-half, with 2020 sales doubling to 175,000, increasing their share in all new car sales to 10.6% (Figure 3.1).

Figure 3.1 Number of UK new electric car sales and market share of total car sales



Joachim Brandt – **Head of Electric and Autonomous Vehicles**

‘It is absolutely critical to drive the transition to electric vehicles at pace. While target setting plays an important role to define the direction of travel in a timely manner, equally a societal change of such magnitude requires higher level of consumer engagement, a clear framework for digitally enabled systems and data sharing, a secure and ethical supply chain and the provisioning of the industrial capabilities to manufacture and recycle batteries, vehicles and infra-structure at scale. None of this will happen over night and needs cross sector collaboration and everyone’s commitment to rise to the challenge.’

The Government has committed to a fossil-fuel vehicle phase-out by 2030, something which broadly is aligned with the recommendation of the CCC. However, the caveated allowance for hybrid sales to 2035 requires clarification. The ambiguity around which vehicles possess ‘significant zero-emission capability’ could significantly dampen progress in this area. The market for electric vehicles has performed exceptionally well despite the events of the past year-and-a-half, with 2020 sales doubling to 175,000, increasing their share in all new car sales to 10.6% (Figure 3.1).

Key Developments

Public transport usage has suffered as a result of the pandemic with a significant reduction in usage. Whilst other modes of transport have begun to reach their pre-pandemic rates, public transport usage is currently 50-80% lower than before the pandemic, whilst car travel has only reduced 20%. In order to reverse the trend, the CCC recommends investment in high-quality public transport, with the goal of a 6% reduction in demand for car travel by 2030, relative to current forecasts. Additionally, with the costs of car travel falling with respect to both average wages and bus and rail travel, the government must act to secure and improve the financial benefits of public travel.



Moving Forward

The Government must capitalise on the enthusiasm shown by manufacturers who have committed to internal cut-off dates for transition to electric only sales. This interest must be capitalised on, with a cohesive, ambitious, and egalitarian strategy for the deployment of EV charging points across the country. Whilst the number of these points has continued to rise, their distribution has been uneven, with most being disproportionately located in urban areas – over a quarter (6,000) are located in London alone. Most glaringly, the Transport Decarbonisation Plan is still planned for release for Spring 2021, as has been a common factor with many government strategies of late. Furthermore, the government continues to invest substantial amounts in road-building schemes contradicts the focus on public transport incentivisation.

Key Targets to be Achieved in the Surface Transport Sector	
Date	Key Targets
Before COP26	<ul style="list-style-type: none">- Publication of the Transport Decarbonisation Plan- Publication of the Rail Decarbonisation Strategy- Minimum device standards for EV chargers
By 2024	<ul style="list-style-type: none">- Widespread trialling of zero-carbon HGVs
By 2030	<ul style="list-style-type: none">- Near 100% proportion of new car and van sales either electric or zero-emission
By 2040	<ul style="list-style-type: none">- Phase-out of new diesel HGV sales- Removal of all diesel trains from passenger networks



Manufacturing and Construction

Progress in the Manufacturing and Construction Sector		
Target Area	Ambition	Policy
Resource Efficiency	●	●
Energy Efficiency	●	●
Electrification	●	●
Hydrogen	●	●
Carbon Capture and Storage	●	●
Fuel Supply	●	●

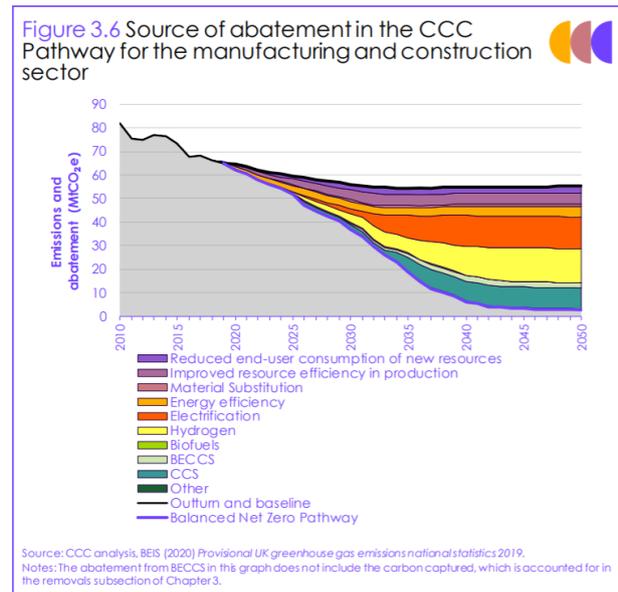
Progress to Date

Progress in manufacturing and construction has been largely positive over the past decade, with an overall fall of around 20% since 2010. The success of decarbonisation in this sector can be predominantly attributed to the changing structure of the sector, improved energy efficiency, and usage of cleaner fuel – all whilst output continued to grow. In the past year, sectoral emissions have fallen by approximately 7%, largely in part due to national lockdowns. Unfortunately, this steep fall has no underlying structural change to back it, and a rebound is expected in part, barring overall poor economic recovery in the sector moving forwards. Revenue in the sector fell temporarily by 30-35% during the pandemic, and has already recovered, pointing towards a slight rebound in future emissions.



Key Developments

Most notably in the past few months, the Government have published the 'Industrial Decarbonisation Strategy', which has committed to a 2/3 reduction in emissions by 2035. However, this lags behind the CCC recommendation for a 73% reduction (as detailed in the CCC Pathway seen in figure 3.6). The Energy White Paper has also been released in support of this – important given the effect of the energy industry upon end emissions in the manufacturing and construction sector.



However, an open goal was missed with regards to construction – the current Planning Bill fails to ensure compliance with net zero and climate change resilience. A funding model has however been decided upon for CCS infrastructure, whilst fuel-switching pilots have begun under the Industrial Fuel Switching competition.

Christopher Lewis – **Economic Analyst**

“Progress in the manufacturing and construction sector has been mixed over the past year. Whilst the Government’s Industrial Decarbonisation Strategy marks a substantial step forward, it could (and arguably should) be more ambitious. Furthermore, the strategy suffers from ambiguity and hesitancy in some areas, lacking clear targets in the industry uptake of electrification and hydrogen. Thankfully, the Government has indicated a desire to address the shortfalls in the sector. When they do so, they must develop clear and consistent targets, failure to do so will likely see delays – something unpalatable given time is of the essence.”

Moving Forward

In order to progress in this sector, the CCC highlights the need for advancement in policy – particularly regarding incentivisation of CCS and fuel switching. Furthermore, more stringent product and construction standards need to be implemented to reinforce efficiency. The Government must create and support a strategy for widespread training in skills, whilst ensuring that output and jobs in the sector continue to grow.



Key Targets to be Achieved in the Manufacturing and Construction Sector

Date	Key Targets
Before COP26	- Conclusion of Green Jobs Taskforce and publication of subsequent action plan
By 2022	- Finalisation of carbon capture, utilisation and storage (CCUS) business models
By 2024	- Business models for CCUS up and running - Legislation for Future Homes and Future Building Standards finalised, to be enforced by 2025
Mid 2020s	- CO ₂ transport and storage infrastructure up and running
By 2030	- CCS and low-carbon hydrogen working across 5 separate industrial clusters, storing 10 MtCO ₂ per year - Commercial scale GHG removal plants up and running
By 2035	- Widespread rollout of CCS



Electricity Generation and Fuels

Rob Honeyman – **Head of Analysis, Low Carbon**

“The CCC have once again highlighted the good progress made by the UK in securing impressive levels of renewable generation investment in the coming years. Focus now shifts towards ensuring that networks and market design enables further renewable capacity to be brought cost-effectively online. The CCC also called for a Government-agreed phase-out date for the use of unabated gas for electricity generation.”

Progress in Decarbonising Electricity Supply		
	Ambition	Policy
Offshore Wind	●	●
Other Renewables	●	●
Nuclear	●	●
Dispatchable Low Carbon Generation	●	●

Progress to Date

The Sixth Carbon Budget report set out the key elements of a policy package to fully decarbonise electricity generation. Unlike other areas of decarbonisation, electricity supply has been highlighted by the CCC as the major success story of the past decade; the proportion of electricity generated from variable renewables rose to 26% in 2019 (up from 3% in 2009).

Renewable auctions have been successful at driving down the costs of low carbon electricity generation. The CCC therefore see auctions for low-carbon power generation, together with supporting actions to enhance system flexibility as one of the seven indispensable elements to the transition. Whilst the Government has already committed to regular auctions for low carbon electricity, a clear schedule, including details of the volumes supported at each allocation round should be set out to provide certainty for the supply chain.

Key Developments

The main policy developments in the past year have been the publication of the Government’s Ten Point Plan and Energy White Paper, which committed to increasing the capacity of offshore wind significantly over the

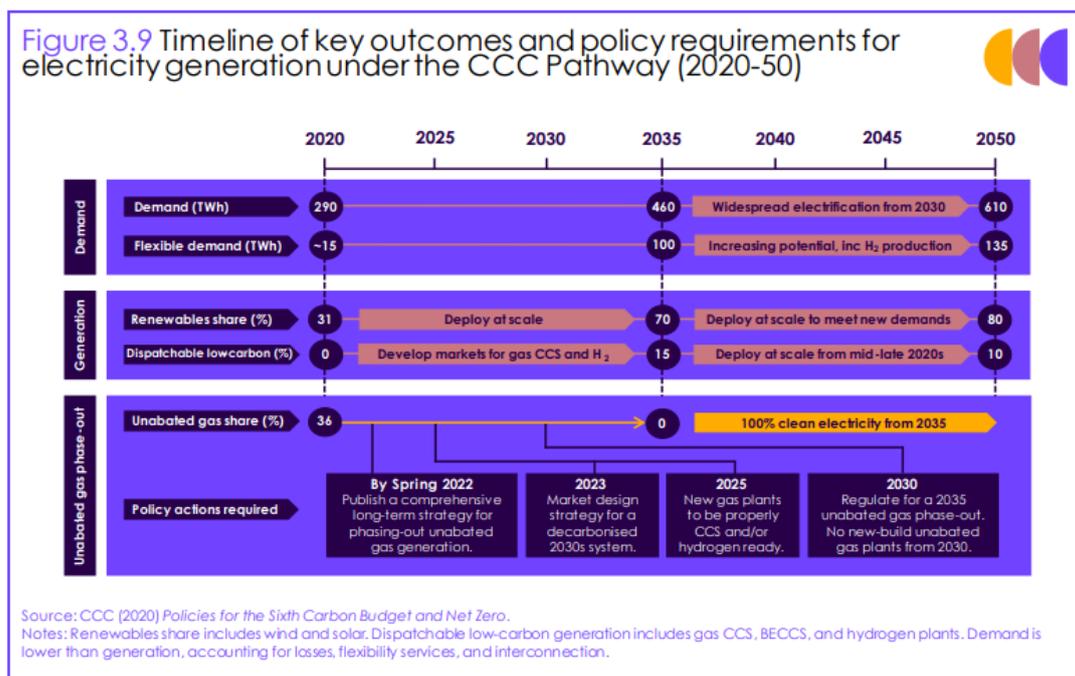


coming decade, running the fourth round of auctions for low carbon electricity in 2021 and commitments to support power CCUS, nuclear and demand side flexibility.

Deployment of renewable electricity generation has scaled up rapidly in recent years. Although the increase in 2020 was at a much slower rate than the average achieved over the past five years, the growing project pipeline means that this slowdown is likely to be temporary.

Moving Forward

Ideally, generation should be fully decarbonised by 2035, whilst simultaneously meeting a 50% increase in annual demand. Achieving this will require the wide scale deployment of new low-carbon generating capacity, alongside the phase out of unabated gas-fired generation by 2035, subject to security of supply. Concerted action from Government will also be required to develop contracting models and improve planning and consenting regimes. Network upgrades will likely be necessary ensure networks are ready to accommodate new demands and generation.





Key Targets to be Achieved in Electricity Generation and Fuels

Date	Key Targets
Before COP26	<ul style="list-style-type: none">- Industrial Decarbonisation Strategy- Hydrogen Strategy, and consultation on hydrogen business models- Ofgem’s final business model approvals for the RIIO-ED2 period should accommodate network upgrades for EVs and heat pumps- Next Contract-for-Difference allocation round, targeting large volumes of renewables, towards 40 GW offshore wind by 2030
By 2024	<ul style="list-style-type: none">- Business models for hydrogen, CCS, GHG removals and industrial decarbonisation up and running- Coal phased out of the power system
Mid 2020s	<ul style="list-style-type: none">- Demonstrate low-carbon hydrogen at scale via 1 GW of hydrogen production capacity by 2025- CO2 transport and storage infrastructure operational
By 2030	<ul style="list-style-type: none">- 40 GW of offshore wind installed in UK waters, reducing emissions from electricity generation to less than 50 gCO₂/kWh
Over the 2030s	<ul style="list-style-type: none">- Phase out of unabated gas for electricity generation- Widespread roll-out of CCS, including on Energy from Waste plants

To find out more please contact:

Sam Crichton – Head of Policy Insight and Engagement

samantha.crichton@gemserv.com



Useful Links

Reports

[Progress in Reducing Emissions: 2021 Report to Parliament](#)

[Progress in Adapting to Climate Change: 2021 Report to Parliament](#)

[Joint Recommendations: 2021 Report to Parliament](#)

Supporting Information, Charts and Data – Progress in Adapting to Climate Change

[Progress in Adapting to Climate Change - 2021 Report to Parliament - Exhibits](#)

[Priority Adaptation Indicators Update](#)

[Second National Adaptation Programme Monitoring Action Tracker](#)

Supporting Research

[Research to Review and Update Indicators of Climate Related Risks and Actions in England](#)

Launch Event

[CCC 2021 Progress Report Launch Event](#)

MARKETING@GEMSERV.COM



Gemserv

MAKING THINGS THAT MATTER WORK BETTER FOR EVERYONE