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Friends of the Earth

Faster, deeper and fairer carbon pollution cuts needed

Faster, deeper and fairer cuts to carbon emissions than those recommended by the Climate Change Committee are possible and necessary.

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18 months ago the Climate Change Committee (CCC), the government's official advisors on climate change, recommended setting a target to achieve net zero greenhouse gas emissions by 2050. It also published an illustrative pathway on how to get there. Friends of the Earth was highly critical of that pathway, saying that faster and deeper emissions cuts were possible. Now the CCC has updated its work with much more in-depth research and formally recommended a new pathway. It's a great improvement on the previous one, but we think that that it could be better still – the climate emergency demands faster, deeper, and fairer cuts. In this article, we've analysed changes made to the earlier targets and show where we think more progress could be made in different sectors.

Better transport options

Previously, we criticised the CCC for recommending that the cut-off date for halting the sale of new petrol and diesel cars and vans should be 2035 rather than 2030. Thankfully, the government has responded to pressure from Friends of the Earth and others and agreed a 2030 date, albeit with a potentially dangerous loophole for hybrid vehicles. Friends of the Earth is also calling for a ban on all petrol and diesel vehicles on the road after 2045, including HGVs, with any remaining vehicles scrapped. The CCC says over 80% of new HGVs could be electric by 2035 if the technology develops. A more ambitious target of 100% electric or hydrogen HGVs by 2035 may be feasible, and given HGVs have a more limited lifespan than cars, it's reasonable to say that there should be no fossil-fuel driven HGVs on the road after 2045 – or at least very soon after.?

But electrifying transport alone isn't enough to make sufficient cuts in carbon pollution from this sector. The CCC now says there should be a 9% reduction in car mileage by 2035 and 17% by 2050. This would mean much greater reductions in car journeys in urban areas, where modal shift is more straightforward than it is for longer distance inter-urban travel. This is bolder than the CCC had previously recommended, but still conservative.

Friends of the Earth would like to see much greater cuts in car usage, achieved through measures such as free bus travel, £2 billion a year invested in segregated cycleways, and road-pricing with the funds raised being used to halve the cost of train travel. Cuts in car mileage of more than 20% by 2030 should be possible with determination.

Heat pumps

The CCC has again firmly backed heat pumps as the primary technology for home heating in the future, resisting pressure from the fossil fuel industry to back hydrogen made from natural gas to heat homes. Hydrogen from natural gas does not deliver zero emissions, even when coupled with carbon capture and storage (CCS). It's also much less efficient than heat pumps or electric heaters.

Since the previous report, the CCC has upped the number of heat pumps it thinks should be fitted – from 10 million to 12 million in homes by 2035, with 5.5 million fitted by 2030. But Friends of the Earth and others have been calling for 10 million by 2030. While the CCC is right to identify that supply chains need building up and fitters trained, a target of 5.5 million is not ambitious enough. Unfortunately, continued foot-dragging by the government on its heat strategy now makes 10 million heat pumps by 2030 much more challenging.

The CCC also says that fitting gas-boilers should be allowed until 2033. But this will just create further lock-in to fossil fuels – we say the phase-out date should be before 2030.

More renewable energy and faster growth

The CCC has upped its recommended target for the proportion of electricity produced from variable renewable energy (wind and solar) from 57% by 2050 to 80%. This is a very welcome move. But as it also says that 90% is possible, this is the goal it should have gone for.

By 2030, the CCC says around 3 times the current amount of variable renewable energy is needed to provide 60% of electricity. This requires around 7 GW of additional renewable energy capacity each year, depending on the mix of renewables added – offshore wind produces more electricity for each GW of capacity than onshore wind, because the wind blows more often out at sea. The annual build rate of renewable energy between 2012 and 2017 averaged 7.7 GW, which means that the CCC recommendation is very much a business-as-usual approach. The UK has vast renewable energy resources – and we should be aiming to build much more renewable energy capacity much more quickly. Previously, Friends of the Earth has suggested a build of up to 14 GW per year. ?

The CCC is also still too soft on natural gas, although it has significantly reduced its estimates of the amount needed in its earlier pathway. It has also said that natural gas for electricity production should not be used without carbon capture and storage after 2035.

Friends of the Earth believes we should reduce natural gas use in electricity production as much as possible over the next ten years and phase it out as soon as possible. This means as soon as enough capacity for hydrogen production from renewable energy comes online. Hydrogen can be used instead of natural gas as a back-up for generating electricity during periods of low variable renewable output, as well as for seasonal storage (storing hydrogen made from renewable power in the summer for use in the winter when electricity demand is higher). Natural gas with CCS is not a low-carbon resource, because the capture rate for CO2 is not 100% and there are fugitive emissions from gas extraction. Therefore, hydrogen needs to be manufactured using renewable energy.

Hydrogen from renewable energy

Hydrogen has an important role in decarbonising industry, where it can replace most combustion processes. It can also be used in some transport options, such as long-distance HGVs and trains, and can have a minor role in heating, in the form of hybrid heat-pumps. Friends of the Earth has produced a detailed briefing about hydrogen's role in the low-carbon economy, against a backdrop of hype by the fossil fuel industry and the government. ?

The CCC has been much more measured about the role of hydrogen. It now sees a much smaller role for natural gas in producing hydrogen than it did in 2019: gas use in its last pathway only reduced by 30% by 2050, in part so it could be used for hydrogen production, whereas now the CCC suggests it should fall by 75%. But the CCC's recommended pathway still sees most hydrogen being produced from natural gas with CCS – so-called blue hydrogen, although dirty hydrogen would be a more accurate description. Clean, green hydrogen made using renewable energy and water only accounts for 25% of hydrogen production in 2035, rising to 45% by 2050. Friends of the Earth is calling for all hydrogen to be produced using renewable energy – another reason for much more ambitious and rapid increases in renewable energy capacity. ?

Much less aviation

In 2019, the CCC suggested that aviation demand would increase by 60% between 2005 and 2050. It now suggests growth should be marginally lower, at around 50% (a 25% increase from 2018 levels). But importantly, it now says that there should be no net increase in aviation capacity, which is an important message for those pushing for expansion at Heathrow and regional airports across the UK. ?

Two of the scenarios the CCC developed to inform its chosen pathway see a reduction in passenger numbers by 15% from 2018 levels back to 2005 levels. It also sees a role for biofuels and the beginnings of synthetic fuels to replace fossil fuels. ?

The CCC says emissions from aviation should follow a downward trajectory towards 22 MtCO2e by 2050. But Friends of the Earth has called for emissions to be reduced to well below this level, because of aviation's additional non-CO2 impacts, which increase its climate-warming effects by 70%. Yet again the CCC has failed to properly account for these. ?

It may be possible that aviation could reach net zero by 2050 through demand management and the use of synthetic fuels. Curtailing frequent fliers, the likely shift away from business travel to online meetings, and greater awareness of climate breakdown could mean much lower passenger numbers than those in even the CCC's most ambitious scenarios. Synthetic fuels made from hydrogen and carbon captured from the atmosphere are currently prohibitively expensive to use at scale, but costs are likely to fall. ?

Less meat and dairy consumption

The CCC now suggests that meat and dairy consumption should fall by 35% by 2050. The Eating Better alliance?is calling for a 50% reduction in consumption by 2030, and for the remainder to be “better” production. This would involve moving away from cows and sheep, which produce the powerful greenhouse gas methane, and the consumption of pigs and poultry which is problematic because of the high imports of animal feed associated with overseas deforestation and carbon dioxide emissions. Guidelines for a healthy diet suggest even deeper reductions of around 80% in meat and dairy. ?

Less meat and dairy consumption not only directly reduces greenhouse gas emissions, but also frees up land for other uses, such as tree planting. The CCC recommends planting 30,000 hectares of trees a year until 2035, rising to 50,000 hectares a year afterwards or 70,000 hectares in two of its other scenarios. The availability of land is not a constraint on even higher planting rates, as even with heir smaller reductions in meat consumption, the CCC has identified 2 million spare hectares of land. ?

The UK is a major importer of timber and paper products and we should be using more timber in construction. This speaks to a need for much greater levels of tree planting than even the CCC scenarios. The UK should be looking to double tree cover by the middle of the century, both for timber construction and nature restoration.? ?

A fairer, safer and more equitable budget

The CCC's recommended pathway is in line with the UK making a fair share of the global cuts necessary to avoid 2 degrees of warming. But if the world is to avoid exceeding 1.5 degrees, then the UK's fair share of the remaining emissions allowed would require cuts of around 75% by 2030 compared to 1990 levels – not the 64% proposed in the CCC pathway. ?

As the first industrialised nation built using coal, if we also consider the UK's historical contribution to climate change, then reductions of 90% are needed. And these figures don't include the carbon impact of our imports.

Conclusion

The CCC’s new pathway is a significant improvement on its previous recommendation, which we welcome.

However, the committee admits its pathway is "conservative” and has produced more ambitious scenarios – one called “Tailwinds” would achieve net zero emissions by 2042. But the CCC should have been much more ambitious about its recommended pathway. The government must formally accept the CCC recommendation for a 2035 target of 85% cuts in greenhouse gases, but when doing so it should also say it will strive to make even deeper cuts. ?

Friends of the Earth applauds the CCC for its work and taking climate change seriously. But given the climate emergency and the UK’s historical contribution to climate change, we believe it could be far more ambitious. As shown above, more is possible. We can build more renewable energy capacity faster, reduce car use further, heat more of our homes with heat pumps more rapidly, eat less meat and plant more trees, and further constrain aviation. We can and should do all these things.?