The continuing failure of UK climate change mitigation policy

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Abstract
Failure to take climate change seriously enough has resulted in the world now facing a climate emergency, with rising global temperatures, melting polar ice caps, increasingly frequent and severe storms, floods and droughts, and rising sea levels. Despite being the first country in the world to set statutory carbon emissions reduction targets (in the Climate Change Act 2008), the UK government since 2012 has fallen increasingly behind, even by its own standards. This paper details what this has meant in terms of specific policies and identifies some of the reasons for this policy failure: in particular, a negative attitude towards regulation and a return to a reliance on market forces, plus an overriding concern to continue with ‘business as usual’, in terms of support for fossil-fuel industries and ever-increasing energy demand and supply. Ironically, this has resulted in a situation where radical solutions seem even more necessary and more urgent.

Key words
decarbonisation, global emergency, new green deal

UK approaches to climate change mitigation

The global climate emergency changes everything (Klein, 2014). This is still not sufficiently appreciated, either by governments or the public (or universities!), yet the evidence is overwhelming (see, for example, Wallace-Wells,
Annual global carbon emissions continue to increase, causing accelerating global temperatures; unless this is reversed before 2030, the Intergovernmental Panel for Climate Change (IPCC, 2018) warns of climate catastrophe after 2050. Climate change has greatest impact on the most disadvantaged people (Gough, 2017; Wretched of the Earth, 2019). Some commentators fear it is already too late to act decisively (Read, 2018; Bendell, 2018). Others argue that a target for net zero carbon emissions earlier than 2030, with substantial annual reductions starting immediately, is still feasible (Jackson, 2019). The ‘Absolute Zero’ report appears to go further, by not assuming that new technologies will develop to offset the emissions being made (Allwood et al., 2019), but it could be argued that the UK’s emissions should be reduced to below absolute zero in order to help dilute the current high levels of atmospheric carbon concentrations (from 419 to 350 parts per million).

Others again have argued that there is a systemic relationship between capitalism and climate change (Somerville, 2020a), under which capital tends to be invested where it is found to be more profitable, and that tends to be where labour is more productive or more exploitable. Higher labour productivity involves more sophisticated technology, which tends to involve more embodied energy and the extraction and consumption of more finite, non-recyclable materials, and therefore catastrophic climate change and ecological collapse. The situation is complex because climate change itself is increasingly resulting in global degrowth (Wallace-Wells, 2019: 119–23; 166).

This paper focuses on the UK government’s policies on mitigation. It evaluates the shifts in approach to climate change since 1992, lists the various policies involved, comments on the Committee on Climate Change’s increasingly outspoken attempts to hold the government to account, and discusses the main areas of policy where more urgent action is required. It does not discuss local authority policy, although much has changed in the last year: 205 out of 408 English authorities (Whitehead, 2019) have declared a climate emergency, and many authorities have set pre-2050 target dates (varying from 2030 to 2045) for net zero carbon emissions. No authority yet, however, appears to have a clear and realistic plan in place that details how its particular target will be reached.

For three reasons, the UK has a greater responsibility than many other countries to reduce its emissions: historically, it was the first country to massively increase emissions through industrialisation (Laybourn-Langton, 2019); its per capita emissions remain high compared with other countries, particularly in the global South, though this is projected to change by 2030 (UNEP, 2019: 37); and it is a relatively affluent country, with relatively greater capacity to reduce its emissions.

UK governmental approaches to climate change have been consistently characterised by failure to meet their own specified aims and targets and
complacency in the face of this failure (Ray et al., 2007; Martin et al., 2012). The main political parties have adopted a largely rhetorical1 ‘progressive’ green discourse as a means to capture the growing green median vote (Helm, 2010), signifying the emergence of a ‘competitive consensus’ (Carter and Jacobs, 2014: 137). Policy approaches to climate change have been confused and incoherent, variously emphasising four ‘storylines’: the need for technological innovation in energy generation, reducing energy demand, pricing carbon, and playing down the UK’s responsibilities in this policy area (Lovell et al, 2009). None of these approaches challenges the incumbent fossil-fuel and extractive capitalism that is primarily responsible for greenhouse gas (GHG) emissions, not just in UK (Brown and Spiegel, 2017; Monbiot, 2019) but throughout the world (Curtis, 2018; Oberle et al, 2019).

From 2001 to 2011, the policy paradigm shifted away from the pro-market orientation that had existed at least since 1992 and towards greater state intervention, involving legal obligations on electricity suppliers to source their electricity from renewable energy and placing more emphasis on energy security (Kern et al., 2014). This shift was at least partially due to the failure of the market-oriented approach to deliver emission reductions (Kern et al., 2014: 520–521) (for example, in the creation of a carbon market by the European Emissions Trading Scheme, the price of carbon was set too low to achieve any significant reduction in fossil fuel supply) and possibly also the emergence of climate change as a significant media issue from 2005 (Carter and Jacobs, 2014).

The epitome of this new paradigm was the Climate Change Act 2008, which created a new Cabinet-level Department for Energy and Climate Change (DECC), with specific energy security and climate mandates, and legally binding targets for emissions reduction (20% by 2010, 34% by 2020, 50% by 2025, 57% by 2030, and 80% by 2050). Initially, the Coalition government continued Labour’s policies, and added several new ones, including the so-called ‘Green Deal’ (for increasing domestic energy efficiency), creating a Green Investment Bank, introducing electricity market reform, the Renewable Heat Incentive, and the Renewables Transport Fuels Obligation (DECC, 2011). From 2013 onwards, however, climate change policy moved into reverse, with the abrupt cutting of funding for the Green Deal, the privatisation and later de-greening of the Green Investment Bank, the so-called ‘dash for gas’ (including government support for fracking), incorporating the DECC into the Department of Business, Energy and Industrial Strategy in 2016, and much else besides (see Table 1). Overall, however, it is not clear that this represents a new paradigm (Martin et al, 2015).

Particularly important is the government’s negative approach to regulation (HMG, 2010), which appears to mark a return to reliance on market forces and voluntary behaviour change, with an increasing subordination of climate change policy to the goal of economic growth (see McCarthy and...
Table 1. Climate change policy continuities and changes since 2010.

| Policy                                                                 | Change                                                                                                                                                                                                 |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Energy                                                                  | Ceased in 2017                                                                                                                                                                                        |
| Energy company obligation (which required energy companies to source specified proportions of their output from renewable forms of energy) | Levy price frozen from 2016 to 2021 and extended to renewable energy production from 2015. Carbon emissions tax introduced in 2019 payable at £16 per tonne in 2020 (Gissey et al, 2019). |
| Climate change levy (known as Carbon Price Support) on fossil-fuel power production priced at £18 per tonne in 2013, supposed to increase to £30 by 2020 and £70 by 2030 (Bowen, 2011) | Discounts due to cease in 2013 were extended to 2020                                                                                                                                                   |
| Climate change agreements with energy companies                         | Phase out made conditional on sufficient availability of gas-fired ones (from 2015)                                                                                                                                 |
| Coal-fired power stations to be phased out by 2025                      | After 2015:                                                                                                                                                                                          |
| From 2009 subsidies for renewable energy, supporting onshore and offshore wind, marine energy, biomass electricity and heat, heat pumps and renewable transport (DECC, 2011) | • ended subsidies for solar, onshore wind, and biomass/biogas, resulting in loss of jobs and stalled growth of the low-carbon sector in 2016, and collapse in renewable energy investment since then; continuing effective support only for offshore wind and biomass electricity and heat (for criticism of this change, see CCC, 2019b) |
|                                                                         | • abandoned the Community Energy Strategy 2014;                                                                                                                                                         |
|                                                                         | • opposed onshore wind in particular even though it is cheaper than offshore wind                                                                                                                                 |
|                                                                         | • scrapped tax reliefs and substantially reduced feed-in tariff payments (available since 2010) for domestic renewable energy generation (resulting in a collapse in community energy start-ups – Harvey, 2016); |
|                                                                         | • ended support for feed-in tariffs in 2019;                                                                                                                                                         |
|                                                                         | • ended funding for the Carbon Trust and Energy Saving Trust;                                                                                                                                          |
|                                                                         | • increased VAT on domestic solar battery systems from 5% to 20%, leaving domestic coal at 5%                                                                                                         |
|                                                                         | • on the positive side, £2.5 billion investment in low-carbon innovation from 2015 to 2021 (HMG, 2017: 17), although nearly half a billion pounds of this is for nuclear (HMG, 2017: 15). |
Continuing policy of support for fossil fuels

Actions to increase fossil-fuel extraction and combustion since 2011:

- cutting corporation tax on oil and gas (since 2015) (amounting to £1.3 billion support for North Sea oil companies)
- increasing the subsidy for diesel generation (since 2015)
- support for fracking for shale gas since 2012
- continuing support for oil and gas exploration (no change)
- approval of new coal mines in Durham (2018) and West Cumbria (2019)
- fast-tracking shale gas planning applications while making it easier for local communities to block larger wind turbines (since 2018)
- increasing subsidies to fossil-fuel industries (which amounted to at least £26 billion in 2015 - IMF, 2015, or £10.5 billion per year - European Commission, 2019)
- UK Export Finance continues to support fossil-fuel projects abroad - £6.9 billion since 2000, of which £4.8 billion has been since 2010, compared with £39 million for renewable energy projects; from 2013 to 2018 96% of UKEF's energy finance was invested in fossil fuels (House of Commons Environmental Audit Committee, 2019: 16)
- Subsidies for biofuels continue to fail to take account of whether or not the fuels are sourced sustainably (Evans, 2015; Biofuel Watch, 2019; see EASAC, 2019, on what counts as carbon-neutral bioenergy production).
- 2018 proposal to count nationally significant shale gas extraction as permitted development, so that local planning authorities cannot stop it

Housing and buildings

Target set in 2006 for all new homes to be zero carbon by 2016

Target finally abandoned in 2016: the government argued that retaining it would result in fewer homes being built (Ares, 2016) (for criticism of this change see CCC, 2019b: 11: building standards not high enough and not enforced)
| Policy                                                                 | Change                                                                 |
|----------------------------------------------------------------------|------------------------------------------------------------------------|
| Planning regulations requiring developers of new housing to deliver carbon savings | Relaxation of planning regulations to allow developers to deliver carbon savings offsite where not viable onsite and axing of proposed increase in onsite standards (from 2015) |
| Green Deal – for retrofitting existing housing (from 2012)            | Cut back in 2013 due to higher than expected costs and finally abandoned in 2015 |
| Renewable Heat Incentive (introduced in 2011 for non-domestic heating and in 2014 for domestic heating) - quarterly payments made for up to seven years towards installation of biomass boilers, heat pumps and solar thermal | To increase take-up, initial lump sum payments for heat pumps and biomass made available in 2018, but the scheme is due to end in 2021 |
| Green Investment Bank (launched in 2012)                             | Sold to Macquarie in 2017, which is required to make green loans only up to 2020 and is already funding biomass burning that threatens increased carbon emissions, air polluting particulates, and deforestation. |

**Transport**

- Fuel price escalator (introduced in 1993, originally with mandatory annual increases until made discretionary in 1999)
- Renewables Transport Fuel Obligation: tax relief on ultra-low emission vehicles (worth £400 million from 2012 – HMG, 2012); at least 4.75% of fuel required to be biofuel (from 2013)
- Fuel duty frozen since 2011, costing the Treasury over £10 billion per year
- Relief ended in 2015 but Plug-in Car Grant continues to contribute up to £4,500 towards the upfront cost of a battery electric or plug-in hybrid vehicle; biofuel obligation not increased from 4.75% (House of Commons, 2016)

**Agriculture and forestry**

- ‘Restoring our vulnerable peatlands and ending peat use in horticultural products by 2030’ (HMG, 2018b: 44)
- No change

**Other**

- Traditionally, local authorities have been allowed to set standards for development that are higher than the minimum Building Regulations
- The Deregulation Act 2015 disallows this
- Funding for energy R&D
- Fallen from 0.1% of GDP in the early 1980s to less than 0.02% in 2014, and especially weak in relation to renewable energy (Martin et al, 2015: 9)
Morling, 2015: 13, for criticism of using regulation as a last resort). This is evident in its ‘clean growth strategy’ (HMG, 2017), which does not mention decarbonising the electricity grid or emissions from aviation or livestock, and talks only about increasing energy efficiency and supporting innovative low carbon heat technologies in industry and housing (which include nuclear – see below). Voluntary or ‘practical’ approaches have their place (see, for example, Fankhauser, 2012), but arguably government intervention is essential to end fossil-fuel lock-in, ensure sustainable infrastructure, and decarbonise electricity (among other things).

The Coalition government’s shift away from regulation was accompanied by an attempt to devolve responsibility for managing climate change to the local level (under the Localism Act 2011). This attempt has been argued to amount to a ‘politics of blame-avoidance’ (Bache et al, 2015: 65) that has led to a weakening of the government’s internal control mechanisms since 2010 (Bache et al, 2015: 80). At the same time, local authorities experienced a drastic cut in their government funding, substantially reducing their capacity to tackle climate change (Lowndes and McCaughie, 2013).

Currently, the UK government claims to have reduced its greenhouse gas emissions by 43.5% since 1990 (DBEIS, 2019). This reduction has resulted mainly from increases in energy efficiency, the impact of austerity since 2008, the closure of collieries and the decreasing use of coal for electricity generation (so an end to austerity could result in emissions rising again - Hardt et al., 2018: 131). Still, many of the government’s actions are already producing additional emissions (see Table 1), causing it to fall well short of its targets, even for the early 2020s (Howard et al, 2019). The 43.5% figure also hides a significant increase in ‘offshoring’, where goods that were once produced in the UK are now produced abroad but consumed in the UK (Hardt et al., 2018). These so-called ‘consumption emissions’, which include those embodied in imported goods and exclude those embodied in exported goods, are estimated to be 1.75 times higher than production emissions (CCC, 2017: 45). Allwood et al. (2019) conclude that energy use must be reduced by 40% to reach absolute zero carbon emissions by 2050.

**Nuclear power**

UK governments continue to assume that nuclear power is ‘clean’ but it is not renewable because it involves the depletion of non-renewable fuels such as uranium (García-Olivares et al., 2012: 569; exhaustion of uranium is expected within 100 years – Jacobson and Delucchi, 2011: 1156). Nuclear plants emit less CO2 than fossil fuels but more than renewable sources (Sovacool and Watts, 2009: 100; 9–25 times more than wind energy – Jacobson and Delucchi, 2011: 1156). They are more expensive (see, for example, Thomas, 2017, on Hinkley Point C; and Hutner and Cirino, 2019 – five times the cost of...
wind/solar), take longer to install and cannot be made more competitive with other sources of energy (CCC, 2019a: 253). They are also more of a security risk (Radiation Free Lakeland, 2020). They use vast amounts of water, whereas wind and solar systems use very little (Sovacool and Watts, 2009: 101). The nuclear and fossil fuel industries are mutually intertwined in a number of ways (Radiation Free Lakeland, 2020). Accidents are rare but extremely serious – e.g. Chernobyl, Fukushima (Jacobson and Delucchi, 2011: 1156), and disposal of radioactive waste remains problematic and expensive. Nuclear power, at least on anything like the scale (in terms of investment and time) required, is therefore not a viable solution to the climate emergency (Hutner and Cirino, 2019; Beyond Nuclear, 2019). Still the government’s investment in innovation for ‘clean growth’ is biased in favour of the nuclear industry, with the latter receiving over half of the public funds involved (HMG, 2017: 15) (for criticism of such profligacy, see Helm, 2017), and it is pressing ahead with new nuclear power stations at Hinkley Point C (cost £22.5 billion and rising), Sizewell C (similar to Hinkley Point C), Bradwell B, and Wylfa Newydd (£12 billion) (Stirling, 2016, argues that this ‘nuclear renaissance’ is a mistake that can be explained in terms of nationalist pride - ‘punching above one’s weight’ - and military lock-in to the need to maintain ‘nuclear submarine capabilities’). These power stations are all located on the coast, which is subject to increasing erosion and rising sea levels in the future.

Policy changes since 2010

Table 1 provides detail on some of the different policies involved and how they have changed over recent years. Since 2015 the main theme has been one of moving backwards: continuing and even increasing support for fossil-fuel extraction and combustion combined with declining support for cleaner alternatives. The effects of these policies have largely not been measured but it is reasonable to assume that they include additional carbon emissions.

Evaluation of government policy

Under the Climate Change Act 2008 the government’s actions on climate change are assessed by the Committee on Climate Change (CCC), which is an independent non-departmental public body. In 2018 the Committee noted that progress had been made only in the decarbonisation of electricity generation, where the UK is on course to meet its 2020 target of 30% of its electricity supply coming from renewable energy, compared with 12% in 2011 (though the impact of this on GHG emissions is unclear, because of, for example, continuing increases in electricity consumption). All other sectors (notably, buildings, industry, transport, and agriculture) had failed to
decarbonise to any significant extent, and hardly at all in the previous five years (CCC, 2018a: 11). The renewable energy targets of 12% for heat and 10% for transport were already looking very unlikely to be met (see House of Commons, 2016), making the overall renewable energy target of 15% by 2020 seem unrealistic (reaching only 7% in 2014 and 11% in 2018).

This failure can probably be attributed to: the government’s backtracking on intervention to mitigate climate change (see Table 1), the lack of coordination among government departments (as noted by House of Commons, 2016), and the continuing reliance on market forces to solve the problem. (The targets themselves are not ambitious enough, anyway, as they allow over 30 years to decarbonise electricity, and beyond 2100 for heat and transport.) The CCC (2019b: 11) points to a strategic failure at the highest level: the government is falling increasingly behind because it continually underestimates the scale of the changes required and fails to provide a coordinated approach that will meet its targets.

The Committee is also at fault, on several grounds. It still does not act as if this were really a climate emergency. It hardly ever mentions government funding for fossil fuels (a single mention of an inquiry into UK Export Finance in CCC, 2019a: 118). It makes no recommendations in relation to emissions embodied in imported products. It states incorrectly that reducing emissions to net zero ‘would end the UK’s contribution to rising global temperatures’ (CCC, 2019a: 16) (carbon dioxide stays in the atmosphere for centuries, resulting in continuous temperature increases even if no further emissions occur, so net zero is not enough – carbon dioxide has to be actively absorbed or sequestered; CAT, 2019: 111, makes a similar error). It suggested that decarbonisation of electricity, decarbonisation of heat, phasing-out of fossil-fuel production and agricultural/land reform were all needed in order to reach net zero carbon by 2050 (CCC, 2019a: 25–26), yet CCC (2019b) did not include these in its five key priorities (buildings, transport, offshore wind, CCS and tree planting - CCC, 2019c) for the coming year. In general, it points out where the government is failing but does not ask why or estimate how much difference its own recommendations would make. These faults allow the government, the fossil-fuel industry and agri-business to continue with ‘business as usual’.

The Committee included emissions from aviation and shipping in its calculations for the first time in May 2019 (CCC, 2019a). However, it envisaged that such emissions would continue to increase (albeit more slowly – CCC, 2019a: 23), and suggested that the aviation industry could pay for these to be removed (CCC, 2019a: 29, 35) (e.g. by afforestation – CCC, 2020) and recoup this payment from increased air fares. This would not only privilege the aviation sector at the expense of everyone else but would mean that only those on higher incomes could afford to fly. The Committee does not mention that, following its agreement in 2018 to the proposed third runway at Heathrow
and to the expansion of provincial airports, the UK government is already committed to meeting *faster* aviation demand growth, anyway. Allwood et al. (2019) argue that, in order to reach absolute zero emissions, provincial airports in the UK must close by 2030, and all aviation and shipping must cease by 2050.

The Committee’s advocacy of *carbon capture and storage* (CCS) is also problematic. The process of capturing and storing carbon involves the expenditure of large amounts of energy, and also of money (CCC, 2019a: 131, 253; see also HMG, 2017: 69), estimated at £10–20 billion in 2050 (CCC, 2019a: 29). It is not clear who might fund this or why fossil-fuel companies would choose to invest in technology that only adds to their costs and does not increase their sales or profits.² The alternative, of course, is for taxpayers to foot the bill, but it seems unreasonable to expect government to pay polluters for cleaning up their pollution after the event rather than stop them polluting in the first place. (This could help to explain why the government cancelled the £1 billion competition to commercialise CCS technology in 2015. Nevertheless, it continues to commit millions of pounds towards developing new CCS technologies (HMG, 2017), much of which goes to support fossil-fuel companies.)

**Specific policy areas: Heat/buildings, transport and agriculture/forestry**

**Decarbonising heat (and buildings)**

Heating homes uses almost half of total energy consumed in the UK, and one third of its GHG emissions (DECC, 2013). Over 80% of domestic heating comes from gas boilers, and the government’s preferred low-carbon alternative is heat pumps powered by electricity. However, the Renewable Heat Incentive (currently £16 per tonne) is insufficient to make heat pumps competitive with gas boilers, with uptake declining from 2011 to 2016, recovering only in 2017 but not enough for the technology to be economically viable (Christides, 2018) – arguably, a higher carbon price is required (Chaudry et al., 2015). Heat pumps have been found to be performing less well than expected and providing little cost saving for users (House of Commons, 2016), and expensive to install (Howard and Bengherbi, 2016: 8, 10 - estimated cost of £200 billion for 80% of UK homes). Solar thermal has also been found to be too expensive (Howard and Bengherbi, 2016), although this is disputed (Abu-Bakar et al, 2013). Consequently, nearly all installations funded by the RHI continue to be biomass boilers (House of Commons, 2016).

The two main alternative ways to decarbonise heat are using electricity and decarbonising gas. The National Grid (2018) state that a fully
electrified heating system is relatively expensive and the grid cannot cope with this unless demand is low (KPMG, 2016; Watson et al, 2019: 543). Decarbonising gas is cheaper and can cope with high demand but relies on hydrogen production, which is expensive (£180 billion for infrastructure provision plus £139 million per year – Howard and Bengherbi, 2016: 10) and requires massive use of carbon capture, use and storage (National Grid, 2018: 15). Biogas can be carbon neutral if it comes from natural biowaste or forest or sawmill residues or algae, or from energy crops with a payback of less than ten years (Parrique et al, 2019; see also EASAC, 2019). It is doubtful, however, whether the ‘renewable gas’ currently being produced by gas companies (e.g. Cadent, 2018) is net zero carbon, let alone environmentally and socially just (Howes et al, 2018).

Decarbonising heat therefore presents a dilemma for government: gas decarbonisation on the timescale required to avoid climate catastrophe looks increasingly unlikely, while heat electrification needs either a high carbon tax (which would probably be passed onto consumers in higher energy bills) or substantial public funding (which could stimulate consumer demand). A programme of mass retrofitting of buildings (over 20 million homes in the UK require retrofitting, which is, according to House of Commons, 2016, a precondition for heat pump success) would ensure the replacement of fossil-fuel burning boilers by carbon-neutral ones while at the same time lowering heating bills by making buildings more energy efficient. The costs, however, are substantial: Preston et al. (2013), for example, estimated that an investment of £293 billion was required by 2030. Encouragingly, the Housing Secretary says: ‘I want to see zero-carbon homes being built as standard within five years’ (HMG, 2020), but it is existing homes that need the most urgent attention.

Housing accounted for 69.1MtCO2e (15%) of UK GHG emissions in 2018, mostly due to heating (DBEIS, 2020). The progress made from 2010 to 2015 has gone into reverse and the failure adequately to retrofit existing homes affects all tenures: private landlords have no incentive to do it, social landlords are not planning sufficiently far ahead (Lupo, 2019a, 2019b), and too few owner-occupiers can afford it. Under current housing policies, involving a substantial increase in new housing development (e.g. a million new homes in the Cambridge-Milton Keynes-Oxford Arc alone, not to mention the plans for the Northern Powerhouse and the Midlands Engine – Hollander, 2018), building emissions are set to rise not fall. Notably also, between 2001 and 2011 over 200,000 homes in England were built on a floodplain, and planning regulations have been relaxed since then, contributing to increased numbers of new housing being at risk of flooding (Chelmi, 2016), with the risk increasing as the climate crisis deepens (Barrett and Clarke, 2019). Also, cement manufacture involves considerable carbon emissions, yet concrete is being used increasingly (not least in the
construction of nuclear power stations – Jones, 2019), so alternatives must be found urgently (Allwood et al., 2019).

**Decarbonising transport**

Transport accounted for 124.4MtCO₂e (28%) of UK GHG emissions in 2018, virtually unchanged since 1990 (DBEIS, 2020). Progress in decarbonising transport in the UK is minimal, with just 0.2% of cars being battery electric, only 1.8% of new car sales in 2017 being ultra-low emission (HMG, 2018a: 13), and (fossil) fuel duty frozen since 2011. Also, with only 36% of its rail tracks being electrified, the UK lags well behind other developed countries, but the government’s latest plan for ‘decarbonising transport’ (DfT, 2020) makes no firm commitment to further electrification. The government continues to give priority to private cars, as evidenced by its proposal (Javid, 2019) to spend £25.3 billion more on new or enlarged major roads from 2020 to 2025 (£27 billion now with the addition of the A303 Stonehenge project). This only encourages more traffic, making it less likely that any progress will be made in reducing transport emissions (HMG, 2018a). The target date of 2040 for prohibiting new fossil-fuel cars (HMG, 2018a) has been brought forward to 2035 but this is still later than the CCC recommended date of 2030. Also, the air pollution from fossil-fuelled vehicles is responsible for an estimated 40,000 premature deaths per year (RCP, 2016; Baird, 2019). On aviation the government has only encouraged increasing emissions, which helps to explain why Friends of the Earth won their case in the Court of Appeal against the proposed third runway at Heathrow (Carrington, 2020). The response of transport policy to the climate emergency has therefore been wholly inadequate.

**Decarbonising agriculture, forestry and food**

Agriculture was responsible for 45.4MtCO₂e (10%) of UK GHG emissions in 2018 (DBEIS, 2020) – unchanged since 2012 (CCC, 2018b). Half of these are methane from cattle and sheep, 40% nitrous oxide from artificial fertilisers, and 10% carbon dioxide from burning fuel. The government’s 25-year Environment Plan, proposing a new post-Brexit approach of ‘public money for public goods’, is inadequate: it describes ‘how we will tackle the effects of climate change’ (HMG, 2018b: 9 – italics mine), not the causes. It says much about ‘natural capital’ but this seems to signify only a development of the market-oriented paradigm noted above and long supported by DEFRA economists (for example, Mitchell, 2017). It talks about ‘using fertilisers efficiently’ rather than farming more sustainably, ‘reducing the environmental impact of pesticides’ rather than reducing the use of pesticides, and so on. It commits to ‘reducing pollution’ (2017: 13), e.g. by ‘curbing emissions from combustion
plants and generators’ (2017: 13), but does not mention reducing emissions from livestock (contrast Allwood et al., 2019, who argue that beef and lamb production and consumption must be phased out by 2050). Similarly, the Environment Bill 2020 largely addresses traditional environmental concerns such as waste and ignores the climate emergency (DEFRA, 2020). CCC (2020) has called for a ban on peat extraction and on rotational burning on peatland (which the government has been considering since 2017), but in other respects the Committee continues to rely on market solutions and carbon taxes (e.g. a levy on greenhouse gas-emitting industries in order to fund afforestation).

The Agriculture Bill 2020 (Coe and Finlay, 2020) sets out how the government’s new approach will work. The EU’s Common Agricultural Policy will be replaced by a new Environmental Land Management system. Farmers will no longer be paid on the basis of how much land they own but only for what count as ‘public goods’ such as soil protection and improvement, peatland restoration, conservation of plants and animal species and breeds, improved air and water quality, animal health and welfare, and protecting and improving the environment generally (for detail see Coe and Finlay, 2020: 18–21). This change is welcome (although it is still understood as ‘natural capital’ – Natural Capital Committee, 2020), but will not be fully implemented until 2027 and does not represent a clear response to the climate emergency. In particular, the Bill follows the National Farmers Union in failing to address the need to move away from livestock farming and shift towards plant-based diets (Harrabin, 2019) and agro-ecology (Schwartzman and Schwartzman, 2019: chaps 3 and 5) (Allwood et al., 2019, say that beef and lamb production must be phased out by 2050). England continues to lack a clear policy on food (Lang et al., 2017), and industrialised agriculture has long resisted proposals to improve the sustainability of food production (Jutzi, 2010, cited in Box, 2016).

On forestry, the government’s policy is to plant 11 million trees from 2011 to 2023 (HMG, 2017: 16), increasing UK forest cover from 11% to 12% by 2060 (HMG, 2018b: 26). Compare this with CCC (2020), who recommend planting 1.5 billion trees, at a rate of 30k hectares of trees per year, increasing forest cover from 11% to 17% by 2050 (see Friends of the Earth, 2019, for an analysis of where these trees could be planted). Allwood et al. (2019) argue that planting trees is the most important method of carbon dioxide removal (2019: 33), but ‘even a massive expansion in forestry would have only a small effect compared to today’s emissions’ (2019: 4).

A ‘Green New Deal’?

Recently, the concept of a Green New Deal (GND) has emerged in the US (Aronoff et al., 2019), the UK (Saltmarsh, 2020) and the EU (Green New Deal
for Europe, 2019), as a possible way to avert climate catastrophe whilst also ensuring a fairer distribution of income and wealth – a so-called ‘just transition’. Redistribution is necessary to mitigate climate change because the rich tend to be responsible for more GHG emissions than the poor (for a recent report on extreme poverty in the UK see Alston, 2019). A GND approach assigns priority to policies that both benefit the poor and reduce emissions, such as retrofitting their homes and investing more in low-carbon public services such as social care and primary education. Initially little more than a slogan, and associated with a problematic ‘green growth’ agenda (particularly in the US – see Pollin, 2018, and critiques by Burton and Somerville, 2019, and Rehman, 2019 – for its implications of continued extractivism and labour exploitation), the GND is gaining political momentum. In the UK, it is associated with a shorter working week (Stronge and Harper, 2019), which is also linked to degrowth or post-growth (Mair et al., 2020), and an increase in public investment and ownership, especially in renewable energy infrastructure and the decarbonisation of the economy, housing and transport (Labour for a Green New Deal, 2019). The 2019 Labour Party manifesto (Grant, 2019) signalled a significant advance on Labour’s previous environment policy (Labour Party, 2018), which did not commit to any pre-2050 emissions targets and largely (that is, apart from banning fracking) ducked the issue of how fossil fuels should be phased out. (For some interesting ideas for post-Covid ‘community wealth building’, see Guinan et al., 2020).

The GND needs to be more strategic. Hall (2016), for example, makes a strong case for targeted public ownership of energy, but arguably electricity decarbonisation should come first. This will then have knock-on effects on all other economic sectors. Fossil-fuel companies could be required to transform themselves into renewable energy companies (as Ørsted is currently doing – Harris and Annex, 2018), encouraged by a high tax on their carbon emissions. The massive investment required could come from such taxation, from loans by a revitalised Green Investment Bank, and from cancelling projects such as new nuclear power stations (see above), renewal of Trident nuclear deterrent (between £110 and £205 billion), new high-speed railway HS2 (£106 billion and rising), and London Heathrow airport third runway (at least £14 billion). Economists such as Ann Pettifor (2019) have argued that such a programme is affordable for the UK.

Conclusion

This paper has shown both the extent and possible causes of the failure of UK climate policy, and, consequently, the urgent need for political action to address this failure. The UK government is failing badly, even by its own standards, and the gulf between its stated intentions and actions has only
grown over the years. A wholly unjustified optimism has been shown by its spokespersons, whose innumerable and highly diverse outpourings of green-wash serve to cover up a reluctance to grasp the nettle of climate change mitigation and confront the forces of capitalism that are fuelling the climate crisis.

The global situation has become increasingly dire and desperate, with the future now looking very bleak indeed (for a critique of global climate mitigation policy, see Somerville, 2020b). In the UK, the first priority must be to phase out fossil fuels: coal production and imports, public subsidies and investments in fossil fuels, and planning permission for fossil-fuel developments, must all cease immediately, and ‘no new fossil fuel projects should go ahead’ (CAT, 2019: 143). The decarbonisation of the national electricity grid must be accelerated to complete before 2030, through a combination of wind, solar, hydro and bio power. This will facilitate the decarbonisation of transport by 2030, with the full electrification of the railways and the phasing out of fossil-fuelled vehicles. The decarbonisation of heat and buildings by 2030 needs to be treated as a single programme for the entire UK built environment, giving priority to the replacement of domestic gas boilers as part of a retrofit to much higher standards of energy efficiency. Whether powered by fossil fuels or electricity, the number of private cars needs to be drastically reduced (see Murray, 2019, for a vision of a car-free London). Finally, GHG emissions incurred by production, distribution and consumption of any kind (e.g. methane from livestock, carbon dioxide from cement, carbon embodied in imported products, and aviation emissions – to name the main culprits) should be taxed at the highest rates acceptable to the public (including, for example, a frequent flyer levy – Murray, 2015), with the proceeds being used to pay for the national retrofit programme and to end fuel poverty.

How can this be achieved? Political pressure has increased, e.g. by Extinction Rebellion, Fridays4Future, 350.org, Friends of the Earth, Greenpeace, and many other organisations. Parliament declared a climate and environmental emergency in 2019, the GND is becoming part of the agenda for the main political parties (except the Conservatives) (Grant, 2019), public concern about climate change has grown (Ipsos MORI, 2019: 85% concerned, and 52% very concerned), and the media may be beginning to respond to this concern. The COVID-19 lockdown has fortuitously produced an unprecedented reduction in carbon emissions (Holland, 2020), and shown what can be achieved given the political will. In future, citizens’ assemblies (as advocated by Extinction Rebellion) could provide a way forward (CAT, 2019: 143).

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Notes
1. I say ‘mainly rhetorical’ because the Labour government supported the building of a third runway at Heathrow and (up to 2009) a new coal-fired power station at Kingsnorth (Carter and Jacobs, 2014: 137-8).
2. These costs are considerable, even in the case of the cheapest CCS applications such as steam methane reforming to produce hydrogen (Howard and Bengherbi, 2016) and bioenergy (Gray, 2016). CCC (2018c: 15) reports that gas reforming requires carbon capture rates of at least 90% at reasonable cost, but these have not yet been demonstrated.

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