



House of Commons

Business, Energy and Industrial
Strategy Committee

My BEIS inquiry: proposals from the public

First Report of Session 2019–21

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to the report*

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Business, Energy and Industrial Strategy Committee

The Business, Energy and Industrial Strategy Committee is appointed by the House of Commons to examine the expenditure, administration, and policy of the Department for Business, Energy and Industrial Strategy.

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The Committee is one of the departmental select committees, the powers of which are set out in House of Commons Standing Orders, principally in SO No 152. These are available on the internet via www.parliament.uk.

Publication

Committee reports are published on the Committee's website at www.parliament.uk/beis and in print by Order of the House.

Evidence relating to this report is published on the [inquiry publications page](#) of the Committee's website.

Committee staff

The current staff of the Committee are Dawn Amey (Senior Committee Assistant), Clementine Brown (Second Clerk), Gary Calder (Media Officer), Ian Cruse (Committee Specialist), Rebecca Davies (Clerk), Matthew Eaton (Committee Assistant), Becky Mawhood and Ashleigh Morris (Committee Specialists).

Contacts

All correspondence should be addressed to the Clerk of the Business, Energy and Industrial Strategy Committee, House of Commons, London SW1A 0AA. The telephone number for general enquiries is 020 7219 5777; the Committee's email address is beiscom@parliament.uk

Contents

The 'My BEIS Inquiry' process and next steps	7
Purpose of the 'My BEIS Inquiry'	7
Response to the 'My BEIS Inquiry'	7
Taking submissions forward	8
1 Annex 1: Written submissions	10
Submissions related to energy and climate change	5
Submissions related to business, the UK Industrial Strategy and consumers	142
2 Annex 2: Supplementary evidence	190
Formal minutes	217
List of Reports from the Committee during the current Parliament	218
Index	214

The 'My BEIS Inquiry' process and next steps

Purpose of the 'My BEIS Inquiry'

1. The Business, Energy and Industrial Strategy (BEIS) Committee has a broad scrutiny remit. The Committee's work covers major policy areas from the UK Industrial Strategy and business regulation to energy policy and mitigating climate change. At the outset of this Parliament we sought to increase our accessibility and widen our external engagement with the public, as well as with our experts and organisational stakeholders.
2. In March 2020, following previous initiatives by the Scottish Affairs and Science and Technology Committees,¹ we launched the 'My BEIS Inquiry', inviting stakeholders and the wider public to come forward with suggestions for issues and policy areas which they would like the Committee to investigate over the course of this Parliament. This was an opportunity for us to be alerted to topics that deserve greater parliamentary scrutiny by a more diverse pool of stakeholders including, but not limited to: business representatives, academics, think tanks, campaign groups, charities, local authorities, consumer groups and citizens.
3. We asked participants to explain three things:
 - (1) the nature of the issue they wanted the Committee to look into;
 - (2) why it deserved attention; and,
 - (3) how Government policy in this area could be developed or improved.

Response to the 'My BEIS Inquiry'

4. We were delighted with the response to our call for inquiry proposals and received in excess of 200 submissions from a wide range of individuals and organisations, including members of the public and institutions that we have not previously engaged with. The submissions are published at Annex 1 of this report.
5. We were impressed by the quality, diversity and breadth of the inquiry proposals that were submitted. We received submissions spanning subjects such as: consumer protection, carbon pricing, the future of the UK Industrial Strategy, community energy, insolvency and debt, the future of gas, skills; local impacts of energy infrastructure, productivity, and a green recovery.
6. By tapping into a wider pool of expertise and experience, new and different ideas and issues have been brought to our attention.
7. We want to take this opportunity to thank each and every participant for taking the time to engage with this initiative, especially at a time of national crisis.

1 Scottish Affairs Committee, [My Scottish Affairs inquiry launched](#) (September 2017), Science and Technology Committee, [Open call for topics for scrutiny: #MyScienceInquiry](#) (December 2016) and [Committee calls for ideas from the public](#) (November 2018)

Taking submissions forward

8. We have worked through the submissions, grouping them into themes and shortlisting a selection of participants to ‘pitch’ their inquiry proposal to the Committee on the 16th July, via a virtual public evidence session. This meeting will provide the Committee with an opportunity to learn more about the issues raised before taking a decision on which subjects to investigate further. We will publish the transcript as formal evidence, so that participants’ proposals can reach a wider audience beyond the Committee and be entered into the permanent parliamentary record.

9. When shortlisting submissions, we looked for inquiry ideas that: raised issues that fall within the Committee’s remit; were timely; had high impact potential; suggested work in areas that the Committee had not previously explored; and, brought a new issue to the forefront or a fresh perspective to an existing problem.

10. Where we received a range of similar submissions, we selected high level, broad proposals that provided enough scope to investigate more specific issues identified in other submissions under the same theme. We may therefore invite a range of participants—beyond the list of ‘pitchers’—to provide evidence in inquiries that the Committee takes forward further down the line.

11. We want to stress that all submissions—not just those who are providing an oral ‘pitch’—will be used to help shape the Committee’s work over this Parliament and that we may come back to issues that have not been shortlisted, and explore them through a number of means, including through correspondence.

12. The inquiry proposals shortlisted predominantly fall within the energy and climate side of the Committee’s remit. We also received a range of excellent proposals on the business side, many of which have already informed and shaped our super-inquiry into ‘*Post-Pandemic Economic Growth*’. Proposals related to issues such as skills, research, the UK Industrial Strategy, productivity, insolvency and debt, and greening the recovery will continue to feed into this inquiry.

13. The following participants have been invited to deliver a ‘pitch’ (their full submission can be found at Annex 1 of this report):

- (1) The decarbonisation of heating: Dr Jan Rosenow, Principal and European Programme Director, Regulatory Assistance Project (RAP)
- (2) The future of hydrogen: Carbon Capture and Storage Association (CCSA)
- (3) Industrial decarbonisation and consumption emissions: Energy Intensive Users Group (EIUG)
- (4) Carbon pricing: Zero Carbon Campaign
- (5) Negative emissions technologies: WWF, Ember and researchers from Chatham House’s Energy, Environment and Resources Programme
- (6) Net Zero and a ‘Just Transition’: Grantham Research Institute, London School of Economics (LSE)

- (7) Fuel poverty strategy: National Energy Action (NEA)
 - (8) Net zero consumer protections: Citizens Advice
 - (9) Role of local government in delivering net zero: London Councils
 - (10) Institutional arrangements to meet net zero: Professor Paul Ekins, Director; Professor of Resources and Environmental Policy, University College London (UCL) Institute for Sustainable Resources
 - (11) Digitalising the economy: Aldersgate Group
14. We will continue to provide updates on the outcomes of this inquiry through our reports, inquiries and on our website.

1 Annex 1: Written submissions

Submissions related to energy and climate change

Prof. E. A. Kirk, University of Lincoln

The Committee is requested to examine the factors that prompt companies to adopt energy efficiency measures, both within their day to day business and in respect of the goods they supply to customers. At present, for example, our building regulations do not demand high standards in terms of the energy efficiency of buildings being constructed, similarly other sectors of industry are not subject to the highest energy efficiency standards in terms of their own use of electricity, heating etc. In some sectors of industry such as the retail or hospitality sectors, it can prove challenging for individual companies to take energy efficiency measures as they lease their business premises from other businesses. There is therefore a need both to enhance the energy efficiency regulations in relation to some sectors of industry and to make it possible for other sectors to take effective action to reduce both their costs and their carbon emissions.

The growing costs (e.g. from flooding) due to climate change highlight the need to reduce our emissions of greenhouse gases—improving energy efficiency provides a means to do so. Improved energy efficiency will also lower costs for business making them more competitive globally. However, at present we do not fully understand what motivates corporate actors to adopt energy efficiency measures. Current understandings rest on the conception of companies as rational actors, our research has, however, demonstrated the importance of behavioural norms in engendering responses to sustainability issues and the role of corporate actors, and social as well as legal norms in engendering behavioural change within the corporate sector. These findings are surprising as measures to address energy efficiency are generally regarded as diffuse and so unlikely to be affected by the pull of behavioural norms. There is therefore a need to understand what actually motivates companies to change their behaviour. Is it, for example, the preferences of their customers? Or the ease with which companies can adopt the energy efficiency measure? Are low cost measures likely to be adopted first? How significant are the behaviours of other companies on whether or not individual companies will adopt energy efficiency measures?

Our research points to the need to focus effort on providing information to companies in a format they can easily access on the energy efficiency measures they can and should adopt. Amendments to policy to facilitate the establishment of centres of excellence of relevance to all areas of business, from hospitality to construction to utilities would provide improvements from business as usual. Such centres of excellence must, however, be able to innovate and to change as the demands of industry change and so they present a challenge for policy makers to establish and maintain. At the same time, stricter standards may require in some areas such as construction to ensure best practice in energy efficiency measures is followed. This may include ensuring that the any measures adopted or amended by legislation are open to review and revision at regular intervals to ensure that the energy efficiency measures required remain current.

Pumptec Engineering Group

To recommend a specific Government taskforce that identifies and operationalises energy saving technologies in Government Buildings across all departments. Showcasing energy saving measures to the wider public and leading by example. Delivering case studies and therefore de-risking energy saving / decarbonisation investment decisions to commerce.

The UK Government operates out of very many old, energy inefficient buildings. By examining how the Government can invest in emerging technologies not only leads by example, it also reduces cost to taxpayer and importantly proves the savings that can be made from investment by commercial companies. Part of the remit of BEIS must be to create a leadership position of the Government for industry to follow.

Centralisation to BEIS of a pool of funding to support SME's to install and upgrade and confirm savings that can be delivered into government real estate. The promulgation of results, both good and bad, to industry via DTI.

UK Green Building Council

As Building Regulations start to reduce operational emissions from buildings towards zero, embodied carbon emissions (arising from the extraction, manufacture and transport of raw materials, and the construction, maintenance and disposal of buildings and components) can be as much as 50% of total emissions over a building's lifetime.

Despite the above, nothing in national policy currently requires embodied carbon emissions to be measured, let alone reduced. In the absence of any national policy steer, a number of local or regional authorities are starting to set their own requirements on embodied carbon—notably the GLA, which will shortly introduce a requirement that development proposals referable to the Mayor should undertake assessments of whole lifecycle carbon emissions and demonstrate actions taken to reduce them.

While such local initiatives are laudable, without clear national policy we risk a patchwork of different requirements (and in most areas none at all), with a significant chunk of our carbon emissions remaining completely unaddressed. As previously noted, there is currently a complete absence of national policy in this area. Below is a non-exhaustive list of possible Government policies:

- (1) Government leading by example through procurement—requiring Government-funded building projects to quantify and reduce lifecycle carbon impact.
- (2) A timetable for introducing requirements for the assessment of whole life carbon and targets for reductions. In 2020: phase in requirements for assessment of whole life carbon, starting with larger developments; In 2025: introduce requirements for all developments to assess and disclose whole life carbon impacts, and phase in targets for reductions, starting with larger developments; In 2030: introduce targets for all developments for reductions in whole life carbon.
- (3) An additional suite of measures is needed to encourage circular economy practice, which will reduce the input flow of embodied emissions and ensure already expended embodied carbon remains in stock. Measures should include:

- a fiscal regime that promotes reuse and discourages resource going to landfill or incineration;
- a Government-led centralised open access database of nationally available materials for reuse;
- a Government-facilitated storage system to hold materials for onward reused. planning authorities requiring the reuse of assets and setting reuse targets.

Sustainable Energy Association

Homes across the UK currently do not perform at the level expected from their design specification for a number of reasons; RIBA (2013) have identified that underlying causes include uncertainty in energy modelling, changes after design, poor commissioning, poor installation practice and differing occupant behaviour amongst others. Closing the performance gap between the design and as-built performance of homes will become increasingly important as we tackle the climate emergency and create a housing stock that is fit for the future. Indeed, the homes we built today will still be present in a net-zero built environment in 2050. Therefore, it is crucial that these homes are actually performing to the levels specified in the design to meet net-zero and for this it is necessary to rigorously test and address any discrepancies rapidly.

New build homes should be a priority. They are a low hanging fruit and whilst the retrofit housing market is a much larger proportion of homes, there is a need to ensure new homes do not add to the challenges of retrofit later. Instead, from the outset should be built energy efficiently and with low-carbon heat as standard, or if not installed immediately at least futureproofed for this.

Research (van Dronkelaar et al, 2016) has shown that the energy performance of buildings in reality can differ by +34% of the design and theoretical performance. This means that when trying to reach net-zero, homes may be being built that appear to have a high level of performance, but in reality, do not. The SEA advocates that a home's actual performance, compared to its theoretical performance (such as that on an Energy Performance Certificate (EPC)) needs to be considered to ensure that we actually achieve zero carbon emissions rather than appearing to on paper when the reality is in fact different.

Not only compromising our ability to reach net-zero and true clean growth, homes that do not perform to the level set out in their EPC risk being more expensive and less comfortable to live in. Although the performance gap phenomenon is well documented, there is little currently in place to try and address it; this will need to change as we are now building homes that will be around in 2050 that are not up to the level expected from their design and theoretical performance.

Today, there is minimal testing of the as-built performance of new homes and developers are able to get away with creating homes that are not fit for the future, are more expensive to run for occupants and are colder and inefficient, creating a drain on the NHS as well as leaking energy and carbon emissions. Testing of new homes after they are built, at both pre and post-occupancy stage is crucial so that we can better understand their real performance and seek to address it where it is not at the level specified in the design and not aligned with the Buildings Mission or net-zero by 2050.

It is the SEA's belief that builders and developers, creating buildings that are not at the level needed for net-zero, should be responsible for ensuring that redress is sought and the homes they create are genuinely in line with climate change targets. This should be enforced through adjustments to the Building Regulations policy so that all homes, after they are occupied, have their energy performance tested by an independent body and there are reasonable steps in place for occupants to seek redress for any homes that do not perform to the appropriate level.

Ecuity Consulting

New build homes being built today are not at the standard needed to meet net-zero by 2050, yet they will still be in use in 2050 and beyond. Therefore, incentivising new builds to go further to reduce heat demands to net zero levels now is crucial when trying to set the UK's housing stock on the right path to net-zero. One way to incentivise housebuilders to go further and ensure their homes are aligned with Governmental climate change ambitions is to require any home built for the 'help to buy' scheme (or subsequent or equivalent schemes e.g. the new 'First Homes' policy) to be required to meet a higher performance level that is aligned with net-zero and the Future Homes Standard.

New builds are the low hanging fruit of the housing stock and do not have the same challenges as the retrofit housing market. This means that they represent the most logical and cost-effective sector to address when trying to achieve net zero homes from the outset. Although the Future Homes Standard will require higher levels of energy performance, more needs to be done incentivise builders to go further today and giving buyers the option for more efficient homes.

In 2018, 241,130 new homes were built in England. These homes will almost undoubtedly still be present in 2050, when the UK must reach its legally binding net-zero target. Yet, these homes are not net-zero standard and often not futureproofed to reach it – requiring retrofit at a later date creating additional expense, hassle and time, all the while producing carbon emissions adding to our challenges and damaging the planet today.

Regulation and incentives are needed for builders to create homes that are energy efficient and futureproofed for low-carbon heating. Uplifts to Part L of Building Regulations next year and Future Homes Standard from 2025 will seek to address the regulation side, but incentivisation for builders to go above and beyond requirements now is lacking. Moreover, there is a risk with the current COVID-19 situation that developers may push back of higher standards however, we believe that this must not happen and progress towards net zero must continue. We recognise that consumer demand often governs the way in which large developers build homes and trust that the Government's upcoming 'Buildings Strategy' and energy white paper will address ways to recognise the value of low carbon homes to this end.

To this end, the Government should introduce more incentives for housebuilders to encourage them to go further now. Major housebuilders often cite that increasing standards will compromise their ability to deliver enough homes to reach the Government aims of 300,000 per year by the mid-2020s. Kingspan have produced evidence-based reports, looking at examples from other European countries, to show that this simply isn't the case. This can be shared with the Committee.

Therefore, in order to incentivise action from housebuilders now and tackle future retrofit challenges, action should be taken to require homes built for certain markets to align with the Future Homes Standard and net-zero levels today. The markets included in this policy could be those for the help-to-buy (or equivalent/successor) scheme, section 106 homes that are for social housing or other housing policy such as the upcoming First Homes scheme.

There is a need to ensure that the homes built today are fit for the future and we cannot wait until the mid-2020s for improvements to come into effect if we are to reach our climate change targets. Consumer incentives for energy efficient homes will drive the competitive housing market and these should be introduced as soon as possible.

Liquid Gas UK

This Committee has a key opportunity to review the Energy Performance Certificate (EPC) methodology, so it does not disproportionately impact off-grid homeowners. Due to the focus on input fuel, off-grid homeowners automatically achieve a worse EPC rating just because they can't use natural gas.

Removing the fuel cost from the EPC methodology would stop off-grid homeowners from being unfairly penalised. It is important that this is addressed sooner rather than later, before EPCs are used as legislative tools and have negative financial impacts on off-grid homeowners.

Left un-addressed, this policy change will force off-grid homeowners to spend more money on their home, compared to an on-grid homeowner with an identical home. This will also cause damage to the rural off-grid housing market, devalue off-grid properties and could result in 'Buy to Let' mortgages being refused—impacting the supply of rural rental properties.

In addition, EPCs are currently more likely to encourage off-grid property owners to take up higher carbon heating solutions (such as heating oil), rather than invest in energy efficiency measures or low carbon heating, such as LPG/bioLPG or electrified heating solutions. This unintended consequence is the exact opposite of what UK Government wants to see.

If the EPC methodology is left unaddressed:

- Rural homeowners will be mobilised towards higher carbon fuels as they attempt to improve ratings by using the cheapest fuel available, rather than improving building fabric. This directly counters Government's wider decarbonisation objectives.
- Identical properties in terms of fabric situated on and off the gas grid will receive different EPC ratings. Due to the way that EPCs are calculated, off-grid homeowners receive a worse rating than homes on the grid.
- Homeowners will have to spend more money on off-grid homes, compared to an identical home on the gas grid, in order to get the same EPC rating. This is unfairly and unjustly penalising rural areas, homeowners and house builders for no other reason than the fact they don't use natural gas.

- “Buy to let” mortgages will be refused. This will result in a reduction in the supply of rental properties in rural areas and have a significant impact on local communities.
- Flawed and unfair off-grid EPCs will devalue off-grid properties as potential homeowners and landlords choose not to invest in rural locations due to the unfair policy penalties.

Removing the fuel cost from the EPC methodology would stop off-grid homeowners from being unfairly penalised just because they are off the gas grid. It is important that this is addressed sooner rather than later, before EPCs are used as legislative tools as we are currently seeing in Scotland where off-grid homes could be further penalised.

H Lloyd, Facilitating the Future Ltd

(I am also a Non-Executive Director of UK100, and work part time at the Active Building Centre)

This inquiry would consider the potential of a Building Upgrade programme to ensure all homes and buildings meet the UK's Net Zero ambition, while securing skilled jobs across the whole of the UK. As the Select Committee that considers the varied and interacting policies on energy, industrial strategy, clean growth and climate change mitigation it is best placed to prompt better UK wide delivery AND an effective impact on building based emissions.

A Building Upgrade approach seeks to move the debate, and delivery, on from a publicly unappealing deficit model of retrofit, to one that reflects the everyday aspiration to have an upgrade, be that of your phone, your mobility or in this case your home.

A Building Upgrade would give your building the capabilities we should all expect of the 21st century—fibre broadband connectivity, smart metering, energy management controls, a means to capture and store the solar energy that ‘falls’ on your building, with scope for EV charging and peer to peer energy trading—and of course higher energy efficiency, including loft & wall insulation if still needed.

The UK has a long history of inadequate housing retrofit programmes—inadequate in scale, financing, engagement of the public, and action from the construction sector, while being inadequate in terms of any impact on energy use, associated emissions, and the potential for skills jobs across the whole of the UK.

The deficit model of home and building retrofit sets the bar too low, prompts poor solutions that often need revisiting, while barely creating the wider demand that would ensure all buildings were Net Zero before 2050 (by exciting most home and building owners to play their part in upgrading our building stock).

Only this Select Committee has the reach and breadth to move the debate on, to help us move on from the now institutionalized fuel poverty challenge (and annual debate!) to help formulate a more than adequate programme of delivery based on the principle of an Upgrade.

Time is running out to have the necessary impact; the Covid-19 moment offers an opportunity to Upgrade Britain Better.

How can policy in this area be improved?

In the first instance by moving away from a deficit approach—from retrofit to Upgrade. Then to follow that through in terms of what is available, how government policy, finance and resources support it; and how it is made available across the country, where it can play a part in the wider ‘levelling’ up response (not least by working in from the North and the West).

Policy implications could include:

- As with the creation of OLEV to prompt EV roll out and take up this may benefit from a dedicated agency;
- There could potentially be implications for standard and regulations, e.g. the imminent Part L and Future Home Standard responses;
- A prompt to further development of the Industrial Strategy and its focus (in one domain) on the Construction Sector, and on the Energy Transition (an Upgrade approach could address both in a consumer, home and building use focused way);
- Both elements offer technology development and export opportunities, with the potential to focus UK innovation and development investment.

The overall impact of the inquiry would be to prompt the creation a roadmap to deliver Upgraded homes and buildings across the UK.

Southwark Group of Tenant Organisations (SGTO)

Covid has highlighted the daily crisis many people are enduring. At the start of ‘lock down’ social tenants were left cold as it was March and their district heating wasn’t working, they were scared to put on their plug-in heaters that were providing a heat substitute. Tenants were worried it would drain their electricity key meter money. This not only affects tenants with district heating breakdowns. Many tenants are on key meters as their sole source of energy, ‘good-will’ shown by big energy companies during covid should continue and could prevent 1000s of deaths from people enduring cold each year. We are told that District Heating is the clean energy solution however, in many districts with older properties and older pipe networks there is constant failings leading to constant breakdowns. If the covid crisis continues into winter months the crisis will be catastrophic. Precautions need to be put in place before district heating is rolled out further.

Older properties have district heating systems of 40+ years, parts are past their sell-by date and are collapsing. These parts are bespoke, covid has led to a halt in an already struggling production line. This leaves people without heating and hot water.

Covid has shown the inability of people on key meters to access the help that they need and the ability of big energy companies to provide it. Vulnerable people are relying on Mutual Aid volunteers to top their key meters for them as they are unable to go to the shop—including those with district heating breakdowns. If they do not have the kindness

of strangers to top up for them, they are going cold. If they do have to rely on the kindness of strangers it makes them vulnerable to exploitation. People are financially unable to afford to top up their key meters. There have been some helpful steps from the energy companies to support people who are self-isolating and unable to top up—for the many people experiencing fuel poverty beyond the covid crisis the kindness currently being offered has been a lifeline but is only for this period of time. The 1.8 million more Universal Credit claimants having to wait 5 weeks to access money or to get into debt through advance payments are going to struggle with fuel costs as new-found financial restrictions are placed on them. We must prepare for the winter crisis.

Fuel companies should offer more hands-on emergency support to people in crisis. The lessons learned from this crisis and remedies offered should be available to people experiencing daily crisis in the future—ie: those experiencing physical, financial or mental hardship. Debt should not increase during hardship and long complex forms should not be expected to be completed by 3rd party referral agencies as cuts to legal aid and covid reduce access to free advice and support.

There should be no imposition of key meters which mean that vulnerable people who were initially unable to pay, are unable to top up fuel.

Government must prepare for the next stage of the covid crisis and pre-empt what it may look like for consumers struggling with access to fuel when crisis returns in the winter months. The Government must know it has prepared a suitable fuel response in way of access to fuel for those experiencing physical, mental, financial hardship.

The Government must also know it has supported local authorities to prepare for production gaps caused by lock-down to make sure district heating systems have the appropriate parts and that the solution is not unjustified, high bills to leaseholders.

Fuel Poverty Action

How to guarantee people's heat and power (both energy policy and consumer protection). Guaranteeing access to energy is critical to people's health. The assumed safety net does not work. Around 10,000 people die each year in cold, and often damp, homes, and this is set to increase exponentially due to Covid-19. Many more lack adequate heating, or cannot access hot water for washing, power or fuel for cooking, or power to refrigerate food and medications, or run fans.

Disconnection is relatively rare, but prepayment meters, often imposed without consent, are problematic to feed and expensive to run, forcing people to disconnect themselves. Fear of debt forces millions to ration their energy, heating homes only an hour or two, even when home all day. District Heating is often unreliable, with frequent breakdowns and high costs; regulation will be welcome but no panacea. Heat pumps are often installed inappropriately. Homes off the gas grid depend on fuels which require high sums upfront to purchase, and in some weather conditions cannot be delivered. Heat controls are difficult for many to use.

Covid-19, decarbonisation costs, and the increasing need for cooling as well as heating, make the need still more urgent for measures that will guarantee access to heat and power for all.

The importance of saving 10,000 lives a year, and potentially much more now, is self-evident. For too long, the yearly Russian roulette, which most heavily affects people who are elderly, ill, disabled, and/or poor, has been accepted as inevitable. Now, with the pandemic, people are re-valuing life.

Meanwhile, cold homes and lack of access to power (for light, devices, refrigeration, cooling) seriously impact people's mental and physical health, relationships, studies, and work. In turn, the economic impact is severe, particularly on the NHS, which spends an estimated £145m a year due to cold homes.

Since the start of the pandemic, many more families are facing hunger (highlighted by the EFRA Select Committee). People struggle to balance heating and eating. The lack of appropriate, affordable and reliable technology, housing, and energy supplies makes it very hard for people to save energy without imperilling their health.

Fear of illness, debt, unemployment, and homelessness are causing another crisis in mental health, and raising a real risk of violence and social fragmentation (in the US many people are buying guns). There is a pressing need for security. A guarantee of heat and power would help a lot.

Starting with a principle—that access to heat and power should be guaranteed to all—would lead to reconsideration of many policies:

During the pandemic suppliers agreed a more sympathetic response to customers in crisis, but in most cases payment demands are simply deferred: no solution. A government fund has been considered, which could rescue both desperate customers and thereby their suppliers; this fund could put conditions on suppliers to end the policies that have caused so many deaths, and to move away from fossil fuels.

Imposition of prepayment meters, equivalent to disconnection, must cease. The perversity of standing charges, which mean low energy users pay more per unit, could be reversed with new pricing structures (now being explored). Funding could be restored for energy efficiency retrofits. Heating systems could be fine-tuned for efficiency, with government funding where necessary, and people could be enabled to access renewable or community energy sources or publicly owned supplies. Compensation for outages could be made punitive, automatic, and could cover customers' costs.

Energy audits, considering people's housing conditions, heating technology, and household members' ages, disabilities, and incomes—as already offered by many local fuel poverty services—could be a crucial component of the guarantee.

National Energy Action

Even before the Covid-19, over the last five winters the number of excess winter deaths due to living in a cold home is estimated at approximately 10,000 per year. One of the largest contributors to these needless deaths is vulnerable people, often struggling with existing ill-health, being unable to heat their homes adequately, if at all. As well as an unacceptably high number of preventable winter deaths, millions more people are struggling significantly to afford to adequately heat and power their homes and are suffering with poor physical

and mental health due to cold homes. The resulting impact on health services is acute; costing the NHS between £1.4bn and £2bn every year, in England alone and creating huge needless strain on our stretched health and social care services.

Cold and damp and mouldy homes are associated with a 30–50 per cent increase in respiratory problems. Public Health England (PHE) has declared that there is “clear evidence on the links between cold temperatures and respiratory problems. Resistance to respiratory infections is lowered by cool temperatures and can increase the risk of respiratory illness.” Conversely, warm homes enable immune systems to better fight off viruses, improve the likelihood of people with viruses only suffering ‘mild’ symptoms and help improve the recovery process. Whilst there is currently no cure for Covid-19, cold homes are preventable and improvements in energy efficiency can help stimulate the economy, save lives and address the financial impact of the current crisis when this activity is targeted at those most in need.

At present, each of England, Scotland, Wales and Northern Ireland are undertaking reviews of their fuel poverty strategies and plans, with consultations and outcomes expected in each nation before the end of the year or were consulted on last year. In England, an update to the fuel poverty strategy was consulted on last year, with changes to the fuel poverty indicator proposed, as well as changes to the guiding principles of the strategy.

Without robust strategies to eliminate fuel poverty, including legal targets and plans to reach them, there is little hope that fuel poverty will be substantively addressed across the UK. There are different approaches in each of the four countries and learnings that the English strategy could take from the others. We believe that the topics that deserve some attention are:

- Is the target aligned and sufficient?
- Is the strategy sufficient to meet the assigned target?
- How well is the balance between direct financial support, and support for energy efficiency? Are there lessons to learn about how this balance is struck in other nations?
- How well is the strategy are embedded into other Government departments?
- What can Westminster learn from the devolved nations?

The relative alignment of these plans coming together from a timing perspective represents an excellent opportunity for such scrutiny and could lead to significant improvements in the formation of each of the respective strategies.

In order to improve the policies across the nations to alleviate and eliminate fuel poverty more work could be done to take learnings from other nations. Additionally, there is little focus outside of the main departments that have responsibility for fuel poverty, in working towards the strategies. It will take a combined effort from those working on energy, health, housing and the economy to ensure that our fuel poverty goals and targets are met. The strategies, as they exist today, do not address this. Lastly, there is little appreciation within each strategy as to how much funding will be required to reach legal targets. This is absolutely necessary to ensure that the plans are on track to deliver the strategies.

B Fish

Failed cavity wall insulation (CWI) and external wall insulation (EWI) which has not been investigated or indeed recorded correctly.

OGEM have failed to monitor the programme of works and more importantly outcomes of the energy ECO scheme. All consumer safety nets were Removed by the guarantee terms and worthless with inaccurate reporting on failures by CIGA leaving homeowners with mould/damp and facing massive rectification costs and years of legal cost against the large corporations.

This deserves attention as the Government departments have simply washed their hands of the issues. Having put the obligation to reduce the carbon footprint of the UK into the hands of the energy companies they appear to have no KPI's in place or critically no post evaluation schemes in place.

Every complaint simply when back into the consortium's arrangement of guarantee and inspection procedures and the ADR process If you disagree their finding, strange they then lost at ADR when people could afford to contest the reports.

All parties in this arrangement simply have the same interest, therefore equally reluctant to highlight the failings, removals were carried out by stealth and they are not being monitored or registered, therefore the UK carbon savings through these schemes are now a complete unknown. Especially when the retro insulation had been removed and buried as waste.

Properties have been registered twice, properties with no cavity have been registered as insulated, unacceptable types of construction have been insulated such as timber or steel framed houses, this is fraudulent activity which deserves to be investigated and reported correctly.

How can policy in this area be improved?

Full public enquiry.

If schemes continue a truly independent inspection teams with no affiliation with the Energy Companies or consortium (examples in the current arrangement unacceptable are the BBA, CIGA and OFGEM).

Inspection teams set up by Local Authorities who know their areas well and will prevent wrong installations even at post code level stopping installation being carried out in the unsuitable areas of the country.

They can also take into account local wind pattern, rain pattern and exposure zones which were never taken into account.

Money has been the driver and the pressure to hit numbers, meet the ECO deadlines and to prevent fines.

People in the most vulnerable positions left to suffer.

J Don

Incorrect cavity wall insulation-lack of consumer redress, no change after parliamentary debates, CIGA's methods obstructive & questionable, shifting terms of guarantee e.g. maintenance clause, efficacy of a new co to replace CIGA with same CEO, ADR secrecy & limits on claim, no compensation, disclaimer by Ofgem and trust mark guarantees, no investigation of failings. Testing of products not in situ, harmful products when used with other chemicals produce toxicity in the home.

Far more consumers have problems than realised, no oversight of cases or record of consumers' plight when seeking redress. Consumers need to be included in future decision-making to make sure that lessons are learned when the next drive for sustainable buildings and retrofit measures take place.

How can policy in this area be improved?

An independent body which includes the consumers themselves. More transparency and more in-depth recording of failed cases and lessons learned from them. More accountability from companies producing and accredited to supply insulation materials. More emphasis on natural products.

D P Haley

The selling of cavity wall installation particularly the bigger energy companies in my case Npower.

Basically, although companies will send an 'inspector' to survey your premise's nobody inspects the finished work and when you complain they try to reverse the complaint saying it was your fault and in my case, Npower would not accept their own T's & Regulations.

How can policy in this area be improved?

To add regulations to how energy companies sell cavity wall installations and how installing companies carry out the work and guarantee it especially the work of the CIGA.

I McQuarrie

Failed cavity wall insulation which was fitted to properties under the Government scheme. But these properties should have never had it installed.

No comeback for thousands of people in the same position with major issues due to failed cavity wall insulation.

CIGA don't want to know and find any excuse not to warrant that guarantee.

Something needs to be done to help all the people affected by this issue.

And they like myself have come to a brick wall.

Civalli Insulation Alliance

There has not been a national enquiry into homes with retrofit. Only Northern Ireland who found significant failings.

There has been four Parliamentary debates and one Welsh Assembly Debate on failings—which have been ignored.

Consumer redress depend on CIGA, Cavity Insulation Agency is well documented to provide poor support. Their ADR or Alternative Dispute Resolution organisation is equally flawed.

CIGA's CEO has opened a new company using the same staff created on 1/4/20.

Installation companies turned into extraction companies making for a double payday. (as raised in the House of Lords).

On debate 16 March liquidated company abandoned consumers. Civalli has records of thousands of victims of this scandal. We have cases of elderly people who are left to live in damp mouldy homes. Families forced to abandon their home, some victims have had nervous breakdowns.

Our records are open and any scrutiny is very welcome.

This whole issue needs serious investigation including the link between CIGA and Trustmark as a result of Each Home Counts.

Citizens Advice Scotland

The Committee should investigate the mis-selling of Green Deal loans, especially by defunct rogue company Home Energy and Lifestyle Management Systems (HELMS). These have left thousands of older and vulnerable consumers stranded with unexpected, unmanageable and unavoidable debts with no effective means of redress.

Under the Green Deal—a UK Government scheme from 2012–2015—consumers borrowed money to fund energy-saving home improvements like solar panels and external wall cladding. However, providers like HELMS often used pressure-selling tactics, misleading information, poor workmanship and neglecting building warrant requirements. Consumers were regularly told installations were free and did not appreciate they had to repay loans in instalments through their electricity bills or were accruing around 9% annual interest over decades. Many were also unaware they were signing away Feed-in Tariffs which would have paid them for the energy generated.

HELMS is now dissolved so cannot provide refunds. Consumers now face a complex, arduous and protracted complaints process managed by the Green Deal Finance Company (GDFC) which inherited HELMS' loan book overseen by the Department for Business, Energy & Industrial Strategy (BEIS). They are being offered insufficient loan reductions rather than cancellation, leaving them tied into unreasonable Green Deal contracts.

The scale of detriment is significant, both individually and across the country. 4,526 HELMS consumers are affected with 72% in Scotland. They typically owe over £4,000 and up to £11,750. Additionally, interest charges accrue at around £29 per month. Some also

required top-up loans and incurred repair costs as the measures were poorly installed. The loan debts are tied to homes, rendering properties virtually unsellable. Understandably this also harms consumers' health and wellbeing.

Besides the individual injustices, the scandal affects confidence in the wider energy efficiency and renewables market, which is central to achieving the Government's net zero emissions goals. HELMS plans represent around a third of all Green Deal plans but unlike other financial products, these loans and associated redress routes fail consumers due to weaker consumer protection under Green Deal regulations. This is unfair but solvable.

The complaints process set-up for the Green Deal has been extremely difficult to navigate with significant delays in resolution causing further distress. Disadvantaged consumers require substantial paperwork and evidence from consumers and need assistance from trained consumer advocates. Compensation offered to date in no way reimburses the detriment sustained and does not take into account the mis-selling that occurred.

Citizens Advice Scotland wants to see a resolution for HELMS consumers by the cancellation of all HELMS loans and refund of monies paid. A dedicated redress scheme for HELMS consumers should be created to fast-track complaints and provide satisfactory compensation; this may require retrospective regulatory change. These steps would be essential to repair consumer confidence.

HELMS consumers continue to come forward, several years after improvements were installed, often unaware or ashamed they were misled. The GDFC and BEIS should proactively contact all those with HELMS plans to advise them of its practices, acknowledge the detriment caused by HELMS' mis-selling and accentuated by inadequate Green Deal redress and take steps to ensure these failures cannot happen again.

BEIS is currently reviewing the Green Deal mechanism with a view to relaunching a similar scheme as part of its net zero strategy. An inquiry should identify key future lessons to be learned. Greater uptake of energy efficiency measures/low carbon technology is threatened if consumer confidence remains impaired. As part of BEIS's review and any subsequent Green Deal relaunch, there must be a strengthened consumer protection framework and quicker and tougher enforcement measures against mis-selling companies.

Following the submission from Citizens Advice Scotland two judgements from the General Regulatory Chamber were published which relate to two cases involving the Department for Business, Energy and Industrial Strategy as it attempts to provide redress to people who were mis-sold home energy improvements. The relevant documents can be found at Annex 2.

G Ward

To look at consumer protection for retrofit Cavity Wall Insulation. CIGA is not fit for purpose. A recent Parliamentary adjournment debate discussed my case (16th March). The matter has been referred to Action Fraud and my MP (Chris Elmore) has called for a national inquiry, which I believe could be addressed through the BEIS Committee.

Companies are being Phoenixed into new companies to avoid liability. Consumers are being left with no redress. Insurers not correctly put on notice of claim. Administrators being misled when the companies are put into 'Voluntary' administration—i.e. claims

are being written off / consumers mislead before they transfer all the assets and staff to their new duplicate businesses. The scandal is massive and affects those most vulnerable in society.

An independent body needs to replace CIGA (as there is a massive conflict of interest) and a Public Inquiry take place. The CIGA fund is inadequate to address the damage caused by the negligent acts of the installers. Directors of such companies need to be held to account. We have over £63,000 worth of structural damage caused to our home for example and the CIGA warranty only covers £25,000 which they still refuse to do anything other than remove the product (approx £4k) and do nothing to resolve the damage caused. Those on CIGA force consumers to have to remedial work done by their own companies—most of whom caused the problems in the first place. Nigel Donohue is setting up a new body to replace CIGA to force the same issues onto new build consumers. It is the same problem with a new name. The Government needs to step in to protect the public, this will be bigger than the PPI scandal—destroying homes and making people ill.

S Curry

The Committee should look at the ongoing issues around failed cavity wall insulation. And the industry regulatory body's response to complaints and rectification. It should look to recumbent as review of the promotion of this method of energy saving.

As the Government and local authorities still promote the method as an energy efficient product. Many homes have been blighted by the products failing and the industry being self-regulating the compensation for the damage is limited to removal not reinstatement of the damage caused. Many families are left with worthless homes and incurable damp issues affecting the occupant's health.

How can policy in this area be improved?

Stop the promotion the method until there is a full compensatory scheme in place and an independent regulatory system that checks the suitability to a home for such insulation before it is too late for the homeowner.

Citizens Advice

Current consumer protections are not fit for a net zero energy future. While energy suppliers are subject to strict rules, such as treating consumers fairly and helping those in vulnerable circumstances, the energy services and products that will be required to reach net zero are subject to only a patchwork of generic consumer law and voluntary industry codes. Strong consumer protections will be essential to encourage people to engage and to protect people who can't make an active choice because they do not control the decisions made about their homes (e.g. people who live in privately rented accommodation). The Committee has a role in ensuring the Government and regulators are considering the regulatory challenges that must be addressed for the UK to successfully meet its net zero goals.

Third Party Intermediaries (TPIs), such as price comparison websites, bill splitters and auto-switchers, are services which are expected to expand as we continue down the path towards net zero. These services have no mandatory oversight from Ofgem, and if things

go wrong consumers aren't protected. TPIs are just one example of the raft of challenges that consumers will face in the future as we transition to a net zero carbon economy. For example:

- New energy products and services won't neatly fit into just one market or sector.
- Consumers shouldn't be left to work out how to seek redress.
- Companies will need to access and use people's data to tailor the services they provide.
- Paying different prices at different times of day will become increasingly common.
- Products and services will be increasingly bundled into a single contract provided by multiple companies.

Services such as TPIs have no mandatory oversight from Ofgem, and if things go wrong consumers aren't protected. The Competition and Markets Authority (CMA) found in 2017 that 6 in 10 consumers (59%) who used a comparison tool assumed that these sites are checked and approved before they operate. Within the financial sector, the FCA already has oversight over insurance intermediaries and sets rules on fairness, transparency and access to redress. As an essential service, the energy sector should also be subject to similar oversight; a recommendation the CMA shared in its 2017 'Digital Comparison Tools market study'.

Grantham Research Institute, London School of Economics (LSE)

The UK's transition to net-zero annual emissions of greenhouse gases must be distributionally fair, and policies must be designed to ensure the benefits are shared across regions and communities and to mitigate undesirable distributional impacts. Questions could include:

- How can the just transition be hardwired into national and regional industrial policies?
- What industries can those working high carbon industry(ies) move into in the transition? What will the costs of training these workers be?
- What guidance would a clear just transition roadmap include?
- What are the primary low-carbon economic opportunities in lower-productivity regions of the UK?
- What would be the optimal design for regional strategic or economic development bodies (LEPs or new bodies)?
- What are the key anchor institutions in each region and what input could they provide?
- What new financial innovations and regulations, such as community municipal bonds, could play a constructive role in ensuring a just transition?

- How can communities be engaged best to ensure that economic planning is inclusive, that they have a voice, and that changes are supported by broad societal buy-in?
- Can carbon tax revenues be used to offset any regressive impacts?
- Which households are most likely to be affected by policy implementation across sectors such as transport and energy?

There is ongoing research and policy development within BEIS on this topic, including the BEIS net zero cost review and net zero strategy, linking to HMT's net zero review. The transition to net zero will involve the structural transformation of the economy and society. This will have profound consequences for communities, businesses and individual consumers. Many workers will need new skills. Communities where high-carbon industries will have to close or move away from will be at risk of being 'left behind' with consequences spanning generations. According to the Committee on Climate Change, if the benefits and costs are not fairly distributed, there is a risk the transition could be stalled.

With regard to carbon pricing, UK policy must be underpinned by principles of equity and fairness. In addition to ensuring a just transition, doing so will help to avoid resistance and ensure buy in from consumers will be critical to the success of achieving net zero.

With regard to businesses, industrial policy must be developed and strengthened to ensure that the upsides of the net zero transition are maximised and felt across the UK and its communities.

There is also a need for a long-term strategy for transition skills e.g. developing comprehensive training packages for those in high-carbon sectors and supply chains. More broadly, there is no just transition roadmap for business, local government and finance.

Increased concessional finance and guarantees must be offered to help companies, sectors and places reorient themselves and maximise growth as the economy changes.

With regard to consumers, there needs to be a proper examination of the distributional incidence of net zero. Who are the economic winners and losers—how can policymakers better identify them and how can policies ameliorate the impacts?

This should consider both 'vertical' and 'horizontal' effects – that is, the differing effect of the policy on high- and low-income households, and the differing effects on households with similar incomes but different consumption patterns. Assessing these effects will ensure that policy can be designed to prevent regressive outcomes where there is within-income group variation in energy consumption.

National Energy Action

NEA believes that the Committee should run an inquiry into the equity of the net-zero transition.

Her Majesty's Treasury is currently running a net-zero review to assess how the UK can maximise economic growth opportunities from its transformation to a green economy. It

will consider, amongst other things, the range of choices for how households, businesses and the taxpayer could contribute towards different elements of the transition to net zero. This is incredibly important in ensuring that the poorest households do not bear the brunt of the costs of decarbonisation. The Committee on climate change has also recently written to the Prime Minister to set out initial advice on ensuring that rebuilding efforts support a just transition towards Net Zero emissions and strengthen the UK's preparedness for climate change, coming out of the coronavirus crisis.

We believe that the time is right for the Committee to consider a just transition, potentially shadowing some of the work that the Treasury is doing in its own review, and making recommendations to the review team. An inquiry could explore issues such as:

- What are the range of choices for how households, businesses and the taxpayer could contribute towards different elements of the transition to net zero.
- Which choices present the most equitable solutions to achieving the transition, both in terms of financial equity and the equity of opportunity.
- What are the current, live policies that are incompatible with the ambition of an equitable transition, and what changes can be made to remedy this.
- What best practice can be identified from both our own policy making, and that from our international partners, in ensuring an equitable transition.

To date, a significant amount of decarbonisation policy has been paid for from levies on energy bills, an incredibly regressive practice in itself. This is made more regressive through the policy mechanisms, which are often built around the need for high upfront costs from households, followed by a financial return over time. This results in a lack of equity in both cost, and opportunity. In order to remedy this, Government must think about how costs can be recovered in a more progressive way, such as through general taxation (as they have done within the renewable heat incentive which is paid for through general taxation), and how more policies can increase their equity of opportunity (as has been partially achieved in the energy company obligation, which targets energy efficiency improvement grants towards fuel poor households). The net zero review must focus on the best ways to achieve this, so that the vast costs of the transition do not fall on the poor, and so the opportunities presented are not exclusively available to the wealthy.

Prof S Bouzarovski, School of Environment, Education and Development at The University of Manchester

Climate policies may not only transform existing inequalities but create new ones. Recent research argues that this transition could adversely affect the social, economic, and political vulnerability of actors involved in the process, from households to countries. Thus, this is a phenomenon distributed throughout the energy chain.

Energy efficiency measures, such as improving the efficiency of building fabrics, heating systems, and appliance, are the most effective way of addressing energy poverty across the board. Yet poorly implemented, they do very little. In order to benefit low income households, energy efficiency investment needs to be accompanied by policies of market transformation.

The UK has set an ambitious target of reaching net zero greenhouse gas emissions by 2050. Electricity generation is by far one of the largest contributors to climate change across the world, and climate policies will require deep reconfigurations of socio-economic patterns of energy supply and demand. The transition to net zero will impact household and community welfare, particularly low-income households who will more keenly feel the impact of carbon taxation.

The energy transition will also require a skilled workforce to properly implement it, thus potentially making it a strong generator of skilled jobs.

Regional action plans should be developed across the UK to address and increase the uptake of renewable energies among socially vulnerable populations, to lessen the burden of carbon taxation. To help subsidise this, schemes like the Feed-in Tariff (FIT) and Smart Export Guarantee (SEG) must be encouraged and expanded; FITs were closed to new projects last year.

Work by colleagues at The University of Manchester has identified policy interventions to help accomplish this;

- Diversification of business models in the sector;
- Some form of price stabiliser to revive the previous growth rate in renewable community energy projects, eg incorporating a floor price for exported electricity into the SEG;
- Alternatively, long term contracts (power purchase agreements, or PPAs) could also provide price stability, whereby public sector bodies are mandated to purchase community energy on a long term basis.

The UK must retrofit and improve the sustainability of our housing stock in a manner which enables energy self-sufficiency. The California Center for Sustainable Communities provides a useful model for the UK Government to build on, expediting the process of a fair and just energy transition.

Dr J Rosenow, Regulatory Assistance Project (RAP)

I propose to the Committee to launch an inquiry into heat policy with a focus on which policies and regulations are needed to decarbonise heating in residential buildings so that the UK can meet its carbon targets. The current framework for incentivising low carbon heat, the Renewable Heat Incentive, will come to its end in 2021 with no replacement in sight yet. The impact the Renewable Heat Incentive has had needs to be assessed against what it was set out to do. When designed, it was expected that 513,000 homes would be fitted with low carbon heating systems by 2021. So far only about 75,000 homes have received low carbon heating systems through the Renewable Heat Incentive. Given the low rate of take-up the National Audit Office estimated the Renewable Heat Incentive will achieve around 111,000 installations in Great Britain by March 2021. This is just 22% of its original expectations of 513,000 installations and below its lowest estimate, which assumed the Domestic Renewable Heat Incentive scheme would not be launched. The Committee should assess the Government's plans to increase the rate of heat decarbonisation and whether this is sufficient to meet the UK's climate targets.

Low-carbon heating is amongst the toughest challenges facing climate policy but progress in this area has been disappointing. The UK features in the bottom 3 countries compared to all other countries in the European Union. Why does this matter? The Climate Change Committee has continually identified the need to reduce emissions from the UK's buildings – which made up 19% of the UK's overall emissions in 2017 – in order to meet its decarbonisation targets. Failing to decarbonise heating means failing to meet the climate targets.

As far as I'm aware there has never been an inquiry into this topic by the Committee and it is critical that government is held to account. Such an inquiry would be particularly timely. The Government has announced a heat strategy for later this year, and this will determine the way forward regarding heat policy.

Current heat policy relies on providing subsidies through the Renewable Heat Incentive. Take-up has been disappointing and clearly subsidies do not trigger sufficient demand. Gradually phasing in regulation which prevents existing fossil fuel-based heating systems to be replaced with new fossil fuel technologies could have significant impact. This approach is already being used in other countries such as Norway, Denmark, Germany and elsewhere. Secondly, the current financing mechanism through the Renewable Heat Incentive provides payments after the installation of a renewable heating system over several years. The upfront cost barrier is not addressed and particularly for households with more modest incomes this is not a practicable solution. Introducing a comprehensive package of financing measures would allow all households to fund the replacement of carbon intensive heating systems. Finally, heat policy needs to be well-aligned with energy efficiency policy. At the moment, both policies operate in silos with sometimes unintended consequences such as providing more subsidies when low carbon heating systems are installed in less efficient buildings.

Dr R Lowes, University of Exeter/UK Energy Research Centre (UKERC)

The move towards sustainable heating, that is how the UK moves from its unsustainable system for heating currently based on fossil fuels, to a system which allows the country to meet its goals for decarbonisation while also giving consumers comfortable homes, cost effectively.

It's widely recognised that there has been next to no progress on heat from a carbon perspective and the existing policy for heat decarbonisation, the RHI, has been an almost total failure, delivering a high proportion of bio-energy and not delivering strategically important technologies, such as heat pumps. So, there are live specific policy issues. There is also the question over hydrogen versus electrification, which is in my view a distraction, and we know what technologies can be used now. It is also worth bearing in mind that the ECC Committee carried out an enquiry into heat in 2013 but this never produced a final report. While there has since been an enquiry into the RHI, it is clear that a focus on heat would be valuable and timely.

This is a complex question, firstly the RHI needs to be reformed and extended beyond its current expected closure date of April 2021. There is also a major question over the delivery of retrofit measures and energy efficiency. There is also a very large question about how all

of this is Governed, in light of the fact that this is likely to be a hugely complex transition. The RHI is an early stage policy tool and beyond this, significant market interventions are likely to be required.

Bristol Green Capital Partnership

How can the local state and the energy supply industry be supported and enabled to develop implementable and effective means for the rapid decarbonisation of heat?

The market conditions are not currently enabling nationally for this essential step to reducing energy consumption and deliver carbon neutrality.

Policy Connect

In 2019 the Committee on Climate Change highlighted the fact that there is ‘still no serious plan for decarbonising heating systems’ as one of the major gaps in the UK’s attempts to tackle climate change. The Department for Business, Energy & Industrial Strategy (BEIS) are due to publish a new emissions reduction strategy for heat and buildings in 2020.

This inquiry would investigate the UK government’s approach to reducing the greenhouse gas emissions associated with heat for buildings. It would be launched immediately after the new BEIS roadmap is published and focus, in particular, on whether it is sufficiently comprehensive and the extent to which the Government has a credible strategy to deliver on the stated ambitions in this document. The inquiry could also include wider themes such as evaluating the UK’s past record of low carbon heat policies, comparing the UK against international comparators and following up on some of the recommendations in the Committee’s previous report on energy efficiency (Building Towards Net Zero).

Overall, the inquiry would provide effective, detailed parliamentary scrutiny of a vital, but under-discussed, policy area where further government action is urgently required.

Heating homes accounts for 13% of UK emissions—heat for all buildings accounts for over a fifth. Reducing emissions from heat is widely seen as the most challenging aspect of delivering the UK’s net zero ambitions because of the scale, cost and complexity of the challenge. By 2050 all buildings need to achieve a very high standard of efficiency and be heated through zero-carbon (or very low-carbon) sources.

There are 29 million homes in the UK (in addition to other buildings). Roughly 85% of these homes are heated by natural gas transported through the gas grid and only around 4.5% of the UK’s total heat demand for all buildings is met through low carbon sources. The cost of transforming the UK’s homes to meet the net zero target is estimated to be £15bn annually on top of current system costs through to 2050. It is expected that homes will need to be upgraded at a rate of 20,000 every week between 2025 and 2050.

Decarbonising heat is particularly challenging because the transition will disrupt individuals’ daily lives. This contrasts with the electricity sector, where progress has been achieved through action taken remotely with minimal impact on consumers’ experiences.

There are several aspects of policy development needed from government, which this inquiry could examine. Firstly, developing a new roadmap for heat and buildings which is ambitious and credible. Secondly, learning from, and improving upon, previous policy initiatives such as the Renewable Heat Incentive.

Thirdly, dramatically scaling up the deployment and demonstration of key heating technologies including hydrogen production sources, district heating and electrical heat pumps. Such action is essential to fully test options and build up supply chain capacity for long-term, widespread delivery. This would also help to address the critical skills gaps which are an impediment to tackling the heat challenge. Finally, gaining a more detailed understanding of public preferences in this area and how to engage people in this transition.

More generally, greater public attention and political leadership on this issue is essential, which this inquiry could provide.

Citizens Advice

One area the Committee should consider is the Government's plans for getting people ready for net zero, specifically their plans for decarbonising heat. Polling from Citizens Advice shows that despite public support for the UK's net zero goals, there is a lack of public understanding about the changes people will need to make:

- Just 38% of people think they'll need to change the way they heat their homes to a low-carbon heating system. Our research shows people are willing to make changes to their homes and lifestyles to reach net zero, but they need support to get there:
- 79% said they would be happy to change the way they heat their homes to ensure the UK meets its net zero targets. Of these, 76% said they would need support to do so. Given the technical difficulties, delays and increasing costs experienced throughout the smart meter rollout, it is vital the Committee scrutinises the Government's plans to decarbonise heat and ensures support and protection for consumers is built into the Government's forthcoming heat policy roadmap from the outset. The Government risks suffering similar difficulties to the smart rollout, and a loss of credibility ahead of COP26 if the programme is not outlined.

People's lack of familiarity with low carbon heating systems, and the changes that will be required, leave them vulnerable to mis-selling and higher heating bills. In addition, some of these products may mean homes are required to be connected to a heat network in order to be cost effective. This could mean people would be compelled to connect and if so, they would need to be assured they have equivalent protections to energy consumers who are able to choose their energy supply. Improving energy efficiency will also play a crucial role in the delivery of low carbon heating systems, with the transition to net zero extending beyond the 2030 and 2035 trajectories of the energy efficiency targets. The Government must also consider how we transition households away from the gas grid. There's a real risk that those at the end of the queue wind up paying a disproportionate share of the transition costs.

As the statutory advocate for energy consumers, we know changes won't be possible without a clear programme of support from the Government to decarbonise household heat. People will need clear, unbiased information about the changes, as well as strong consumer protections so they have the confidence to adopt new technologies and somewhere to turn if things go wrong.

National Energy Action

NEA believes that the Committee should run an inquiry into the decarbonisation of heat.

As noted in the recent response from Kwasi Kwarteng to the BEIS Committee regarding the 2020 Budget, the Government intends to publish a Heat and Buildings Strategy before the end of this year. This should be a strategy for how we decarbonise home heating, which is a crucial element in meeting our net-zero goals. This is one of the most challenging sectors to decarbonise, as infrastructure that exists at a building level will need to be upgraded at significant cost, warranting a deeper dive from a select committee to ensure that work is being done in as robust a manner as possible, leading to positive outcomes for all in society.

Heat is possibly the hardest sector to decarbonise and scrutiny is key. This has the potential to be not only expensive for all, but prohibitively expensive to those that currently can least afford to heat their homes at all. NEA has identified several challenges with the need to decarbonise heat, which the Committee could address, amongst wider issues, in an inquiry:

- Ensuring that the poorest households don't end up paying more, living in colder homes and being left behind.
- Overcoming a lack of understanding, capacity and knowledge on the area, in all aspects of the energy system, leading to an absence of engagement and sub-optimal outcomes.
- Ensuring consumer protections and regulations can keep pace with the transition to decarbonised heat, given that technologies are likely to be more diverse than they currently are.
- Successfully changing behaviours to make the most out of the transition.
- What opportunities are presented to reform the structure of the heating market as a result of the significant change required to decarbonise.
- What are the synergies between rolling out new heat infrastructure and the smart rollout, and what can be learnt from this.
- What is the role for communities and local schemes in decarbonising heat.

To date, there has been little progress towards decarbonising the way that we heat our homes whilst the power sector has seen significant steps towards decarbonisation, both at home with the rise of solar PV and on the grid, with mechanisms supporting renewable power stations, the vast majority of homes are heated using natural gas. The only real alternative to decarbonise this today is through a heat pump, a technology that is expensive, even considering the Government support available, and out of reach for fuel poor households.

The Government has not fully addressed the direct financial and technical issues of this transition to date, and the challenges raised above are nowhere close to being answered. Government must work to address this quickly to ensure that everyone can benefit from this important change to our everyday lives.

Prof J Watson, University College London (UCL)

In 2019, the UK adopted a more ambitious target to reduce greenhouse gas emissions to net-zero by 2050. This target, together with legislated carbon budgets for the medium-term, mean that radical cuts in emissions are required across the economy. Since 1990, greenhouse gas emissions have fallen by 45%. However, emissions reductions so far have been largely achieved within the power and industrial sectors.

Heat for homes, businesses and industry accounts for roughly a third of remaining emissions. These emissions will need to be reduced to very low levels if the UK's targets are to be met. Achieving this will require the development, demonstration and deployment of low carbon heating and cooling technologies and infrastructures alongside action to improve the energy efficiency of the UK building stock. It will also require significant changes to policies, business models, market and the daily lives of many citizens.

In the last few years, progress with reducing emissions from the UK's buildings has stalled. The number of energy efficiency measures installed in UK homes fell from around 1.5m installations per year in the early 2010s to just 200,000 installations a year in the second half of that decade. In addition, uptake of incentives for the installation of low carbon heating in homes and businesses, particularly via the Renewable Heat Incentive, have been low so far. This slow rate of progress with both energy efficiency and low carbon heat is not sufficient to meet statutory climate targets in the medium or longer-term.

An important challenge is that considerable uncertainty remains about the best way forward. In particular, it is unclear what mix of technologies and infrastructures for low carbon heat will be the most technically, economically and socially effective.

A heat policy roadmap is being prepared by BEIS and is due to be published later this year. Proposals for further policy incentives to support low carbon heat have also been published this month. It is therefore a good time for an inquiry that considers the impacts of current and past policies, and what actions the heat policy roadmap should include.

Government policy could be improved by considering:

- What has been the impact of past and current policies and strategies for low carbon heat? What have been the successes and failures, and what lessons can be learned?
- What policy and other priorities should be reflected in the BEIS heat policy roadmap?
- What actions can be implemented more quickly, pending the outcome of innovation programmes (e.g. for demonstrating heating systems using hydrogen)?

- How can policies for low carbon heat and energy efficiency be integrated more effectively? What are the implications for supply chains and skills?
- What can be done to maximise synergies between these policies and policies to support economic recovery due to the impact of COVID-19?

OFTEC

Our submission to the ‘My BEIS Inquiry’ is to propose that the Committee considers the policy steps needed to encourage the development of a competitive market for low carbon heating technologies, particularly for the domestic off-gas grid sector. We think this is necessary because driving down capital costs for end-users is a critical—but largely overlooked—requirement to achieving high take up and ensuring the transition to net zero heat is fair and available to all.

BEIS has been technology-led in its approach to low carbon heat deployment and heat pumps remain the Government’s preferred technology solution for off-gas grid homes. While a good solution in some situations, e.g. new build, there is little evidence that off-gas grid households see heat pumps as a viable choice. We are concerned that take up is likely to remain low due to: A) High capital cost (even with the proposed Clean Heat Grant grant); B) The difficulties associated with retrofitting of heat pumps in off-grid homes due to the often-high associated cost of thermal efficiency improvements that are needed (97% of oil heated homes are in EPC Bands D-G); and C) Social issues such as lower incomes and lack of savings etc.

Without massive fiscal intervention, we think it is unlikely that the majority of rural households will either be willing or able to switch during the 2020s, stalling decarbonisation progress. We are also concerned that current (RHI) and proposed (Clean Heat Grant) policy measures are regressive, widening the divide between those able to switch to low carbon heating, and those stuck with what could become increasingly expensive fossil fuels and hard to heat homes.

The Government’s most urgent priority should be to develop policy that sets out a clear low carbon road map, with mandated future carbon intensity targets for home heating, while remaining technology neutral.

The benefit of this is that it provides a clear framework within which industry can operate, allowing investment to be planned, innovation encouraged, and products developed, enabling market opportunities to be created and seized that are currently being missed. The model recently proposed by the Sustainable Energy Association is one example of how this could work.

The most important likely market impact of this approach will be bringing down prices as a direct consequence of greater competition and choice. This will create better value for consumers who will be able to compare and chose from a range of solutions, including some that are specifically aimed at, and better suited to, the rural off-gas grid housing market. While some ‘pump priming’ and transitional support may be necessary during the introduction of some new technologies, we believe this market-driven approach, underpinned by regulation, will be more cost-effective, sustainable and successful than the present model.

Liquid Gas UK

In order to meet our Net Zero commitments, UK Government should take a technology neutral approach to decarbonising off-grid homes, rather than imposing a 'one size fits all' electric solution which will not work for all off-grid homes.

There are four million homes off the gas grid in this country, approximately two million homes are in rural areas. Rural off-grid properties are historically known as 'hard-to-heat' and 'difficult-to-treat', which do not lend themselves to being practically or cost-effectively retrofitted to installing electric heat solutions. Taking a 'one size fits all' approach to electrifying off-grid heat will leave rural homeowners financially disadvantaged, with less warm homes.

Energy Consultancy Ecuity found that a mixed technology approach to decarbonising heat using bioLPG, as well as one that relies solely on fitting heat pumps, could both help the UK realise its net zero target; but that a mixed technology approach could do so for over £7 billion less. BioLPG is a renewable, 'drop-in' solution to fossil LPG, a popular fuel used for rural homes and businesses, which can be used in existing LPG supply chains and is available on the market today.

There are clear, benefits to taking a mixed technology approach to decarbonising off-grid heat, as well as significant risks by taking a 'one size fits all' approach of sole electrification. UK Government should empower rural households, not disadvantage them by forcing them down a single pathway or taking a whole house approach, which could leave homes with an unsuitable heating system.

Government must make clear that it will adopt a technology neutral, market-led approach to decarbonising off-grid heat so it doesn't disadvantage domestic consumers who live off the gas grid with a 'one size fits all' policy framework. This should be outlined in the upcoming heat in buildings strategy and/or heat policy road map, in order to stimulate the off-grid heating market.

SGN

The UK has committed to a highly ambitious and legally binding target of reducing the country's greenhouse gas emissions to net zero by 2050. Among the toughest of the hurdles that will need to be overcome to meet this target, will be decarbonising heat (i.e. the heating of buildings, water and industrial processes). Today, around a third of the UK's greenhouse gas emissions come from heating, and about 83% of UK homes are heated by boilers that burn natural gas.

Broadly speaking, there are two main options for decarbonising heat: using zero-carbon electricity (from renewables and nuclear power) to produce all heat; or changing the gas that flows through our gas network from natural gas to hydrogen (which burns without emitting greenhouse gases). The Government is currently gathering evidence to inform its policy on the decarbonisation of heat and has committed to taking the major decisions needed around 2024.

The achievement of the country's net zero target (particularly in a way that is cost-effective and minimises disruption) will hinge on getting these decisions right. We would welcome the Committee's scrutiny of this vital issue.

Most experts agree net zero cannot be achieved through electrification alone. Organisations including the Committee on Climate Change (CCC) recognise that hydrogen has an important role in decarbonising parts of the energy system poorly suited to electrification, such as industry, heating and heavy vehicles. SGN and other organisations in the gas industry have already begun exploring the use of hydrogen in their networks.

The transition to clean forms of heating is certainly a challenge – but also an opportunity to be seized. In the global race to develop innovative clean energy solutions, the UK could emerge as the leading country for hydrogen technologies and expertise.

To drive and support this change, it is essential the UK devises and implements a hydrogen strategy as a matter of urgency. Other economies, including Japan and Germany, have recently published strategies to give industry and investors confidence in the national ambition and commitment to hydrogen. Industry stands ready to help the Government develop a strategy ahead of the rescheduled COP26 conference in 2021.

The Committee is ideally placed to hear evidence from stakeholders and make recommendations to Government on the development of a cross-departmental UK hydrogen strategy.

We are calling on the Government to introduce a range of important policies to enable industry to invest in hydrogen technologies in the UK and drive the next stage in scaling hydrogen solutions. These include:

- (1) The development of a cross-departmental hydrogen strategy within the UK Government;
- (2) The transfer of gas quality standards from the Gas Safety Management Regulations (GSMR) legislation to an IGEM industry standard to allow the safe introduction of more than 0.1% hydrogen in the gas network;
- (3) Support for the next steps towards 100% hydrogen heating, including community-scale trials (like SGN's H100 Fife project) to provide the evidence for heat policy decisions by 2024;
- (4) Changes to technical standards for boilers so that all future installations will be 'hydrogen-ready' once such boilers are commercially available in the early 2020s;
- (5) The development of financial support schemes for the production of hydrogen for blending into the gas grid, industrial use, power generation and transport to allow hydrogen to realise the same cost reductions as have been seen in other areas of energy that received similar support, such as offshore wind.

Carbon Capture and Storage Association

The Government are yet to publish a clean hydrogen strategy. Hydrogen has been identified by the Committee on Climate Change as a vital energy carrier for power, heating, transport and industrial fuel switching in a decarbonised future, however currently there is no hydrogen strategy from Government. This is particularly pertinent as low carbon

hydrogen production projects are looking to progress in the early 2020s, and currently have no sense of any future market, strategy or business models to support a low-carbon hydrogen economy.

Hydrogen production from natural gas reformation with carbon capture and storage is the only available technology in the short-term which can economically provide low-carbon hydrogen volumes required for the at scale decarbonisation of heat, industry, power and transport. This is reflected in the current industrial cluster decarbonisation proposals, many of which have a central role for hydrogen production with CCS, providing reliable volumes of CO₂ as an 'anchor project'. Without a coherent hydrogen strategy, the 'anchor projects' have an uncertain investment landscape, as such, projects will struggle to pass FID without a detail understanding of the proposed market and hydrogen economy.

For current projects looking to head towards financial decisions in the next 18 months, Government led hydrogen strategy and market indicators are a key variable. Industry are ready to develop projects and deliver at scale volumes of hydrogen, but without a clear strategy by the end of 2020, there is a risk hydrogen projects with CCS will be unable to progress, hindering the UK ability to meet 2030 ambitions and 2050 emissions targets.

Steve Green

Why is the UK supporting hydrogen for domestic heating when the German government has realised its stupid?

"Another big change from the German government's first draft to the last one is the withdrawal of heating from the sectors to receive incentives to use hydrogen." As a chemical engineer green hydrogen for home heating makes no sense as half the original electrical energy is wasted making it and it would be better just to use near on 100% of that original electrical energy. Fossil Hydrogen + CCS is inefficient, uneconomic strategically naive silliness proposed by fossil fuel and gas distribution companies just to keep themselves in profit. It's nonsense. <https://business.financialpost.com/pmn/business-pmn/germany-sees-no-role-for-natural-gas-in-draft-plan-for-hydrogen>

UK government is being hood winked into the wrong options by fossil fuel vested interests.

Learn from the Germans and people without vested interest.

J Hulton

The role of green hydrogen in the transition to net zero emissions.

Green hydrogen made from renewables will play a major role in getting us to net zero by 2050. We need far more support from government for companies in this sector. What can BEIS do to make sure this technology happens?

I think we need to reinstall the climate change secretary of state for starters and ministers for the various aspects of the transition such as wind/solar, hydrogen, energy conservation, wave power etc. We also need to stop financing the fossil fuel industry including credit guarantees.

Citizens Advice

We would like the Committee to consider the cost of energy supplier failures and risks to consumers. 17 energy suppliers have gone bust in the last two years, affecting over a million customers. These failures have left behind a large amount of bad debt, such as unpaid Renewable Obligation levies and customer credit balances. Citizens Advice calculates the unpaid debt in the energy market to total at least £255m; costs that customers will ultimately have to pay for through their bills. When suppliers fail their customers are moved to a new supplier chosen by Ofgem (the Supplier of Last Resort). This process generally works well to keep customers on supply after the failure but affected consumers can experience other harms. For example, administrators of failed companies often push the responsibility for billing mistakes on to consumers, and people often don't understand how their final bill was calculated, with unclear routes to seek redress. People also have less protection when administrators collect debt compared to energy suppliers e.g. administrators can ignore existing payment plans, do not have to consider a consumer's ability to pay, and can request repayment in a short timeframe.

Over £150m of energy debt has been collected by administrators. By June 2019 we estimated this had affected more than 32,000 people. The Committee has an opportunity to hold the Government and regulator to account to ensure customers are no longer at risk if their suppliers go bust.

Ofgem has made changes to entry requirements for firms, and is proposing new checks on operational suppliers, but these will only reduce some of the risks.

The Government should:

- Legislate to ensure administrators of failed suppliers have to consider consumer interests and follow Ofgem rules.
- Legislate to require the Renewables Obligation—the biggest outstanding bill when suppliers fail (around £100m so far)—to be collected more regularly, in order to minimise the risk of large unpaid bills.

J Honneyman

- (1) The high number of UK energy start-ups regularly going bust due in part to the dire lack of: proper financial fitness assessments of start-up energy companies and a dearth of financial oversight of new start-ups in their critical first few years.
- (2) The excessively slow compensation process for consumers when companies fold.
- (3) Lack of communication with, and information provided to former customers of insolvent suppliers by the energy regulator when suppliers go bust.

These issues affect every householder/energy user (eg. businesses/factories/offices/hospitals etc.) in the UK, causing unnecessary worry, stress, anxiety and disturbance to many thousands in the UK, and financial disruption to significant numbers of UK consumers/energy users. The UK's energy supply is of fundamental strategic importance to our country. Disruption of parts of the country's energy supply could reduce/impede

economic growth, the medical/care system, public security and consumers' confidence in the UK's energy companies. This in turn stifles competition as consumers become reluctant to switch suppliers and increase energy costs further.

Improve departmental oversight and monitoring of the energy regulators imposing appropriate penalties (inc. sacking senior managers who have failed to uphold consumer's interests) where necessary, increase their resources, provide guidance on what the customers of insolvent energy suppliers should be told and when, ensure that the energy regulator: employs sufficient skilled auditors to regularly monitor the financial health of ALL the UK's energy suppliers, and acts immediately to prevent/delay/mitigate the effects on consumers of any potential insolvencies; enhances licences to require all suppliers to provide, every 3 months, all of the necessary financial data and cooperate fully with these audits. I don't propose re-branding/scrapping of OFGEM.

Good Energy

Many energy suppliers are misleading consumers and holding back decarbonisation at the same time—through a practice called greenwashing.

For every megawatt hour of renewable power, they put into the grid, generators are issued a certificate called a Renewable Energy Guarantee of Origin (REGO). These can then be sold alongside renewable power, or separately. Energy suppliers buy them to show the proportion of renewable electricity they sell, as per the Fuel Mix Disclosure Regulations 2005.

Some suppliers buy them directly from a generator alongside renewable power, but many buy them separately from the power. The result is that many of the suppliers offering 100% renewable electricity tariffs do not actually buy any renewable power at all. They can buy on the open market, or even coal-fired electricity, and as long as they purchase enough REGOs, they can sell it to the consumer as renewable. This has come to be known as 'greenwashing' within the industry.

This loophole is being exploited to an ever-increasing extent. Last year, Which? found that more than half of available tariffs on sale claimed renewable electricity credentials, up from 9% three years prior. Upon further inspection, however, they only deemed two suppliers to be fully 'deep green,' in that they generated and sold genuine renewable electricity. This distinction is unclear to consumers.

This issue deserves attention for two key reasons. Firstly, consumers are being misled and mis sold, and secondly, renewable generators in the UK are not getting the support they need.

Consumers often choose a green tariff because they want to contribute to making the grid greener. However, Ofgem have said that they 'do not believe that a 100% REGO-backed tariff offers substantial environmental benefits.' On top of this, the price of REGOs are very low, which means it is very cheap for suppliers to make their offerings appear green. In March last year, First Utility re-branded as Shell Energy. In doing so, they went from 3.7% renewable, to 100%, overnight. At the time, to greenwash one typical household's supply, it would cost Shell £1, or 0.1% of the same household's annual bill.

Some suppliers offer an ‘upgrade’ to 100% renewable, for £5 a month – a £60 yearly premium for something which costs them £1. Of course, this doesn’t mean the supplier in question actually has to buy any more REGOs, let alone renewable power – they can just move them across from their other tariffs, which will become ‘brownier’ as a result. This is sometimes called a “greenshuffle”.

Suppliers who offer genuinely green tariffs will have Power Purchase Agreements, from renewable generators. We do this at Good Energy, to ensure that every unit of power used by our customers is matched with one bought directly from one of the 1500 generators we contract with – giving them an easy route to market, and a fair price for their power. This encourages the building of more capacity. Any solution to this problem needs to encourage that kind of behaviour.

This could be as simple as mandating that REGOs be traded alongside the power they pertain to. However, there may be an opportunity to think about more long-term wholesale changes which could improve the way that not only electricity is bought and sold in the UK, but other fuels too. There is presently no equivalent of the Fuel Mix regulations for gas – as we look to decarbonise heat, and renewable alternatives become more commonplace, there will need to be a way to regulate what is being built, bought and sold. A holistic approach to certification could boost consumer confidence, increase transparency, and ultimately send the right signals to those who would build future renewable generation, and accelerate the UK’s energy transition.

Comparison Technologies

With the energy price cap set to expire in 2023, we believe that there is a welcome and timely opportunity for the Business, Energy and Industrial Strategy Committee to scrutinise what measures will be in place to drive engagement in the market and ensure that consumers continue to be protected against costly energy bills.

Ofgem have held successful consumer engagement trials that have resulted in significantly higher levels of engagement amongst previously disengaged consumers. This remedy was recommended by the Competition and Markets Authority (CMA) in its 2016 market investigation. The initial trials resulted in high levels of switching and consumers achieving significant savings. On average across the three trials that energyhelpline supported, 27% of participating consumers switched to save money on their energy bills. This remedy is also addressing long-term disengagement and leading to sustained engagement with the market, rather than just increasing one-off switching rates.

Ofgem and the Government have an opportunity to roll out this intervention to the full 8 million customers, as envisaged by the CMA. To be able to make a final decision on full national roll out, Ofgem needs further information in a number of specific areas. To address these knowledge gaps and to build on previous successes Ofgem should now have an opportunity to hold further consumer engagement trials, with a view to a national roll out of a collective switch campaign. This has the potential to drive engagement in the market and lower consumer bills. Pursuing this intervention should be an important part of the Department for Business Energy and Industrial Strategy’s (BEIS) policy approach to the energy retail market. We consider that it would benefit from the Committee’s scrutiny.

The 2016 CMA energy market investigation concluded that customers had been paying £1.4 billion a year more than they should have been. This shone a light on the lack of competition in the market and the amount that consumers were overpaying. The CMA recommended a series of important remedies to improve outcomes for consumers. Four years after recommending measures to protect consumers, we believe there is an excellent opportunity for the Committee to review the implementation of these measures and their impact on reducing bills and improving outcomes in the market for consumers.

Since the CMA made its recommendations, government and Ofgem have sought to address rising energy bills by introducing the price cap in January 2019. This has offered support to consumers on a standard variable tariff, though with the cap set to expire in 2023, Ofgem are in the process of considering whether it should be replaced. Alongside this, the Government has a manifesto commitment to introduce measures to lower bills and keep the price cap in place.

While the cap has provided a blanket protection to support consumers with an upper limit on energy costs, there remains an opportunity to improve consumer engagement in the market and ensure that consumers can get an even better deal significantly below the level of the cap. Additional measures to improve consumer engagement—including remedies recommended by the CMA—have an important role to play while the cap is in place and beyond. This is particularly pertinent as the COVID-19 pandemic has accelerated the need to support consumers under financial pressure with their bills, during a time when they will be staying at home and using more energy.

One measure that is proven to work alongside the price cap to reduce energy bills is collective switching. In partnership with Ofgem, energyhelpline has delivered three collective switch trials. On average in the first and third trials, participating consumers saved over £300 a year, proving that this remedy produces significant savings. Many of those who benefitted from these savings had never previously engaged with the energy market, yet this remedy is proving to be a long-term solution to save money with consumers continuing to switch again after their deal expires. As part of qualitative research, we undertook with Survation last year, 97% of those consumers who re-switched with us one year on from first switching, confirmed they would continue to review or re-switch their energy deal in the future. Looking ahead, in their Forward Work Programme for 2020–2022, Ofgem have confirmed their intention to hold more trials with consumers, which is another opportunity for the Committee to scrutinise measures to engage and save consumers money.

Our work to support this intervention as recommended by the CMA in 2016, proves there are options to save consumers substantial amounts of money on their energy bills and should therefore be pursued by Ofgem.

As Government and Ofgem consider policy options to reduce energy bills, we believe there is an opportunity for the Committee to contribute to this process by evaluating the success of existing interventions.

Collective switching has proven to be a highly successful intervention to save customers money, and we believe that a full-scale national roll out, as recommended by the CMA, offers a long-term solution to addressing the concerns they identified four years ago. To build on these successes, Ofgem and the Government have a golden opportunity to roll

out this intervention on a national scale to all 8 million disengaged customers. It is now essential that government and Ofgem build on successes and addresses knowledge gaps by holding further trials this year. This will then pave the way for a full national roll out of collective switching.

As energy bills and the cost of living continue to be a prominent issue across the country, we believe there is a valuable opportunity for the Committee to analyse the success of interventions and set out how alternative remedies, including collective switching, can build on the success of the price cap to save consumers money.

N Hornsby

This submission requests the House of Commons BEIS Committee to invite the UK Government to urgently enact legislation to prohibit the inclusion of standing charges* in energy-supply companies' domestic energy tariffs (and of any similar tariff arrangements or schemes).

Standing charges (commonly around £100 to £200 pa for electricity and gas combined) have a financially discriminatory and adverse impact on millions of lower-use and/or energy efficient domestic consumers, who are paying—in effect—a higher unit-price for their gas and electricity than are higher-users, because any standing charge forms a larger proportion of lower-users' overall energy bills than that of higher-users.

Furthermore, consumer interest in improving energy efficiency is less than would be the case without standing charges, because any percentage reduction in energy use as a result of energy efficiency measures would not be fully reflected in lower energy bills (as standing charges are unaffected by financial savings from reductions in consumption).

Government policy on standing charges, according to answers to recent Parliamentary Questions is that they are intended to reflect the on-going costs that fall onto a supplier regardless how much energy their individual customers use—principally distribution costs (pipes, cables etc).

An inquiry would match the HoC BEIS Committee's stated selection criteria:

- Potential for high impact: The issue of standing charges directly affects well over 20 million UK households. Around 86% of the approx. 28 million UK households are connected to the gas grid, and (only) around 100,00 of the 28 million households are not connected to the electricity grid. All the 'Big Six' energy companies levy standing charges, as do most other energy companies (only two do not).
- Bring a fresh perspective to an existing problem: Standing charges are a well-known significant contributor to fuel poverty. But I am not aware of any analysis from a sustainable development, overarching perspective of the case for and against standing charges having been previously undertaken. This submission aims to contribute to such an analysis, and in so doing demonstrate the absence of any justifiable case for maintaining standing charges.

- Timely: there are no indications that the UK Parliament, or indeed most energy companies have any plans to remedy this unfair and discriminatory situation. Arguably, such unfairness could and should be resolved speedily.

Judgement over whether standing charges are justifiable or should be banned centres on a sustainable development-based assessment of society's priorities: whether (i) consumers contributing directly to the economic costs of energy companies' overheads, and (ii) also providing energy companies with a guaranteed income together outweigh the social cost-discriminatory and environmental downside effects incurred by lower-energy users.

Arguably, the 'weight' of the economic, social and environmental costs of standing charges far outweigh their economic benefits.

This submission therefore recommends a HoC BEIS Committee inquiry directed towards the statutory abolishment of:

- standing charges, and
- any similarly affecting tariff arrangement, including higher unit rates for initial tranches of units consumed.

Legislation is clearly necessary to facilitate these abolition measures (in effect, to make the levying of them unlawful), as those energy companies currently operating standing charges are unlikely to abandon them voluntarily, given that decisions to levy standing charges have, since November 2016**, been purely commercial ones.

**Standing Charges were made a statutory compulsory element of domestic energy bills in August 2013; this requirement was repealed in November 2016.

Zero Carbon Campaign

We would like the Committee to review the current state of carbon pricing in the UK and consider how this might be strengthened and extended to ensure it is consistent with the UK Government's 2050 net zero target (NZT).

We would also like all current and future carbon pricing policy to be reviewed through the lens of ensuring a 'fair and just' transition for all.

This inquiry is intended to complement the work of the Zero Carbon Commission, which is developing a proposal for extending carbon pricing more broadly across the UK economy. We would especially like the Committee to critically assess the following:

- (1) The compatibility of the UK's current carbon pricing system with the NZT including existing subsidies, CPS price, fuel duty freeze
- (2) The efficacy of a UK ETS—premised on a Carbon Price Support of £18/tCO₂ in driving the emissions reductions required to reach the NZT
- (3) An assessment of the need for stronger carbon pricing signals in sectors not involved in any past or future ETS

- (4) An assessment of how to drive better engagement with (and behavioural responses to) carbon pricing from British consumers, including the feasibility of issuing dividends to low-income households.

The UK Government has long recognised the importance of effective carbon pricing in driving reductions in fossil fuel use, and policies such as the introduction of the carbon price floor have been instrumental in driving successful emissions reductions to date.

However, whilst the UK's departure from the EU and its associated ETS provides both the need and opportunity to review the UK's current carbon pricing system, no apparent consensus has yet been reached as to what a new system will look like, and how it might be made compatible with the 2050 net zero target.

It is clear that further inputs are required, and that the barriers which have traditionally hampered ambition in this space (i.e. the regressive nature of a carbon tax) still need to be overcome. However, whilst public appetite for action on climate change has never been higher—and as calls are ongoing for the UK Government to raise their climate ambition in advance of hosting COP26—the time seems right to give this subject due consideration.

The Government is yet to publish its response to the 2019 consultation 'The Future of UK Carbon pricing', which may go some way towards articulating BEIS's position.

There are four different areas in which Government carbon pricing policy can be improved.

- (1) Coverage. In order to ensure that emissions abatement is incentivised wherever emissions occur, carbon pricing should be extended across the UK economy.
- (2) Compatibility with net zero. The UK government should create a carbon tax at £50 per metric ton of carbon and CO₂e, rising slowly to £75 by 2030. This should be levied on most sectors of the economy and gradually replace the majority of existing carbon levies in the UK. Some sectors may require a lower entry price to support abatement.
- (3) Impact on UK Industry. Policy should facilitate the transition of UK industry towards low carbon production and prevent the offshoring of emissions. The Government should consider Border Carbon Adjustments, and channelling carbon pricing revenues toward the technological transformation of hard-to-abate sectors.
- (4) Impact on consumers. Consideration of consumer impacts should be at the front and centre of all policy design. The Government should develop a more transparent and streamlined carbon pricing system that is easy for consumers to understand and act upon and implement a targeted household dividend to ensure that costs do not disproportionately fall on low income and fuel poor households.

Grantham Research Institute, London School of Economics (LSE)

As the UK leaves the EU, it will have to re-examine how it chooses to price carbon, either via an emissions trading system or a tax or a combination of the two. Questions could include:

- What are the relative advantages and disadvantages of the UK using a carbon tax compared with an emissions trading scheme?
- How should a carbon tax be designed by the UK to be consistent with its net zero emissions commitment? What should the role of BEIS, HMT and other government departments be in this process? In particular, how should collaborative working be ensured?
- What sectors should be covered by a UK carbon tax?
- How should confidence be ensured that the rate will rise in line with expectations?
- What are the implications for the competitiveness of trade-exposed high-carbon sectors and industries? What complementary policies are needed to prevent leakage—including, for example, free allocation, border carbon adjustments and exemptions and discounts?
- What lessons can the UK learn from the introduction of carbon taxes in other countries around the world?

The UK is currently a member of the EU Emissions Trading System (ETS), but it appears likely (or at least possible) that it will leave the ETS. However, carbon pricing is essential for effective climate action and it is essential the UK has a carbon price which reflects its net zero legal commitment. It is a powerful fiscal and environmental tool that encourages emissions abatement where it is cheapest and sends a clear price signal that the polluter must pay. The current economic framework for decarbonisation in the UK is inefficient and uneven. A broader-based carbon tax consistent with net-zero greenhouse gas emissions would be desirable.

BEIS has yet to publish to full details of the consultation on ‘the future of carbon pricing’. With the UK’s participation in the EU ETS looking increasingly unlikely, and the prospects of a ‘deal’ far from certain, significant focus is needed on the fall-back option which is expected to be a carbon tax.

Aldersgate Group

We would encourage the Business, Energy and Industrial Strategy Select Committee to consider holding an inquiry into industrial decarbonisation. In the context of a net zero emissions target, industrial players will have to adapt their business models to remain competitive and achieve deep emissions cuts. This requires investment, innovation and an uplift in skills and training for existing and future employees.

Industrial energy efficiency has improved significantly, with territorial emissions from industry falling 52% (based on baseline data from 1990).² Despite these improvements however, UK demand for industrial products has increased considerably, with the net value of imports more than doubling for manufactured products—pointing to an increase in consumption emissions, but a decrease in territorial industrial emissions.³ A robust decarbonisation roadmap for the industrial sector is therefore needed and must look at both reducing territorial and consumption emissions. It must also regulate for measures

2 Committee on Climate Change (June 2018) [Reducing UK emissions: progress report to Parliament](#)

3 Ibid.

beyond energy efficiency and fuel switching to achieve deeper emission cuts.

We welcome the inquiry the Committee has done to date on climate change and achieving net zero emissions, but we believe that further investigation is required into how UK heavy industry can decarbonise further and faster and strengthen its competitiveness in the process. The inquiry should consider the following aspects in its remit:

- What a framework for industrial decarbonisation could look like, particularly with hard to abate sectors
- Examples of innovation taking place in heavy industry sectors
- Priorities for the trial and deployment of new technologies in heavy industry, including and Storage (CCS)
- Availability of low carbon energy and alternative fuels
- Policies required to grow the market for low-carbon industrial products and protect domestic industry from imports that do not comply with low carbon standards
- The need to reskilling existing and future workers
- The role of a place-based industrial strategy, examining the opportunities in industrial clusters
- Opportunities of product standards driving emission reductions

Carbon Capture and Storage Association

The Government have progressed the industrial decarbonisation agenda since the publication of the Clean Growth Strategy in 2017. The current Government process however appears very segmented and lacks clarity on the longer-term vision and mechanisms to achieve deep decarbonisation post 2030. In fact, for some industries outside of identified clusters Government support is non-existent.

The gaps in current industrial decarbonisation in more detail are:

(1) Industrial decarbonisation funding segmentation

Currently, the Government has in place an array of funding support mechanisms for industrial decarbonisation, including the Industrial Strategy Challenge Fund: Industrial Decarbonisation Challenge (IDC), the Industrial Energy Transformation Fund, Low-Carbon Hydrogen Production Fund, Clean Steel Fund and the recently announced CCS Infrastructure Fund.

Whilst these are welcomed, it is not yet apparent how funding can be combined for single project applications. The segregation of the funding represents a project risk, particularly in projects with multiple partners which rely on successful application and timing across all funding mechanisms to proceed to financial investment decision (FID).

Many energy intensive industries operate in very competitive international markets, and operate at slight margins, as such these decarbonisation projects will often rely on Government funding for capital assistance.

There seems to be no Government strategy to consider how industrial consortium projects can navigate the funding landscape and keep the cumulative funding allocation risk low.

(2) Long term industrial decarbonisation policy

The Government have announcement many support mechanisms for industry to decarbonise in the form of Government grants and funding support. However, these does not seem to be any direction from Government to introduce a long-term policy framework to support decarbonised products produced from the decarbonised industries.

Currently the only incentive to decarbonise is a fluctuating carbon price. Government does not seem to have a plan to introduce market stimulators such as procurement policy, carbon labelled products, and carbon border adjustments. It is critical that consideration is also given to how policies that promote the uptake of carbon labelled products and processes are enacted. Government policy has a strong role to play in leveraging a carbon labelling scheme to drive decarbonisation, rather than simply relying on consumer behaviour to promote the take-up of low carbon products.

Carbon labelling schemes can be introduced onto products to inform and passively influence consumer purchasing habits. This may cause a reduction in CO₂ emissions as a result, however, a comprehensive economy wide carbon labelling activity which assesses all industrial products can inform large capital investors as well as consumers. If implemented and leveraged successfully, this could guide capital investment into decarbonised products and projects and provide a robust mechanism alongside government procurement policy.

(3) Decarbonisation strategy for 'non-cluster' industries

The current Government strategy focusses on many of the high emitting, energy intensive industrial processes, often encompassed in industrial clusters (as identified by the Grand Clusters Mission). However, for some industries outside of the clusters such as the cement industry, decarbonisation support is more difficult to find.

Carbon dioxide is emitted as a process from the calcining process for lime production required in cement manufacturing. This is a chemical reaction and is an unavoidable CO₂ emission. The cement industry is often located close to the source of calcium (near limestone quarries), these are relatively isolated and not part of larger regional industrial clusters.

Currently, there seems to be no Government decarbonisation strategy for the non-cluster hard to abate industries like the cement industry. As CCS represents one of very few options to decarbonise cement production, any decarbonisation should tie into CCUS cluster development strategy, which it currently does not. Additionally, given the cement industry spread geographically, the infrastructure requirements for hydrogen infrastructure and CO₂ infrastructure for one emitter is currently uneconomical. A coherent strategy is required for non-cluster industries which will be more at risk of carbon leakage if bypassed by industrial decarbonisation strategy.

A comprehensive net zero compliant Industrial Strategy would give much needed clarity for industry, this would provide a clear a navigable pathway for all industrial sectors in an enduring decarbonised product market. It is vital that during the 2020s a strategy is in place which enables net zero compliant financial investment decisions to be made.

Energy Intensive Users Group

The EIUG is calling for an inquiry to consider obliging the Government to give equal weight to UK consumption emissions as well as territorial emissions in developing the UK's Carbon Budgets and the policies that implement them.

We are fully supportive of the Government's net zero target and our members are embracing the challenge. However, targeting reductions in territorial (production) emissions is not enough to reduce the UK's carbon footprint, and the decision to overlook consumption emissions is damaging the competitiveness of UK industry.

According to the World Bank, the UK consumes 40% more carbon emissions than it produces territorially, the largest disparity of its type in the world. Under the Government's current framework, net zero could be achieved by simply offshoring all energy intensive economic activity.

Given that UK industry has a relatively low average carbon intensity, such an outcome would not only be damaging to communities that rely on employment provided by these industries, it may also have adverse effects for our environment.

The BEIS Committee should look to analyse the desirability and feasibility of a dual pillar approach to carbon accounting, to develop a coherent and responsible climate change policy that delivers for business and the environment.

If the UK is serious about our commitment to reducing emissions, it must be open about its true footprint, and not hide behind creative carbon accounting. As society becomes increasingly cognisant of personal carbon footprints, Government policy must reflect an appreciation that emissions embedded in goods imported from abroad are, at least in part, our responsibility.

The UK's energy intensive industries, and the communities they support, risk paying the price for this skewed approach, despite continued investment to improve energy efficiency of production processes. By way of example, in the UK paper making industry carbon intensity (fossil carbon emitted per tonne of paper produced) has improved by 61% since 1990. Perversely, these improvements are being undercut by the Government's policy on carbon emissions.

The urgency of this point is demonstrated by the diverse and growing coalition of organisations calling for this change. Uniquely, the EIUG is joined by environmental NGOs, media outlets such as The Economist, and business groups such as the CBI.

The significance of this issue, coupled with the broad range of perspectives it would attract, makes it an ideal subject for inquiry by the BEIS Committee, with potentially high-impact results.

Despite the recent publication of a report by the Office for National Statistics highlighting the extent of the UK's imported emissions, the Government currently has no explicit ambition to reduce consumption emissions, making this an apt subject for analysis by the BEIS Committee. There are a multitude of ways in which Government could develop policy in this area, and we hope that a BEIS inquiry into the subject would shed light on the viability of each of these.

As an example of a change that could be made easily, the CBI suggested in a recent report that Government should regularly publish both territorial and consumption emissions statistics, alongside GDP and productivity. Such transparency would invite healthy scrutiny and compel development of policies to power sustainable clean growth.

The Government could also broaden the remit of the Committee on Climate Change (CCC), to allow the Committee to advise on policies to reduce the UK's overall carbon footprint, complementing its existing work on territorial emissions. The CCC currently provides monitoring of the UK's consumption emissions in annual progress reports to Parliament – these reports could include advice on reducing carbon embedded in the products we consume.

Green Alliance

The UK's economy makes intensive use of resources. This not only drives unnecessary environmental and human costs, but it also undermines the resilience of UK businesses and communities. For example: material and energy costs rose by 81 per cent between 2004 and 2018, against only a 17 per cent increase in wage costs; there are growing concerns that, globally, resource supplies will struggle to keep up with demand under business as usual; and supply chain impacts are increasingly a concern for global governments, consumers and investors.

There is substantial scope for improvement, through development of innovative resource efficient products and business models and leveraging emerging digital technologies. Yet, businesses often lack visibility of resource related risks and policy is failing to promote resource efficient investment.

The select committee should: explore how businesses need to change to reduce their use of resources and the country's material footprint, including priorities to ensure a just transition; highlight opportunities to promote resource efficient consumption; and identify how policy can support businesses and communities across the UK, and along global supply chains, in maximising the benefits of a resource efficient society.

Better resource management is vital in promoting business resilience and tackling the climate and environmental crises. It would lower dependency on material imports, mitigate supply chain risks and, by promoting innovative goods and services, keep companies competitive despite policy changes like the proposed EU carbon border taxes. This would benefit communities across the country, potentially creating over 102,000 net jobs in resilient, circular industries. It also offers substantial carbon savings: conservative estimates show resource efficiency across five sectors could avoid nearly 160MtCO₂e between 2023 and 2032.

Although the CCC identified resource efficiency was a key route to decarbonise industry, especially in the near term, it has largely been ignored by government's climate and economic policy. Businesses' approach, meanwhile, has been at best piecemeal, as exemplified by attempts to reduce plastic: rather than material reduction, we've seen shift towards other materials that could cause different environmental problems.

Finally, UK businesses could couple digitalisation with resource efficiency to increase resilience. Enhanced connectivity, insight and optimisation enabled through digital technology could prove transformational in promoting service-based business models, reuse and remanufacturing. Ensuring their adoption is targeted to support better resource management should be a key priority in the UK's post-COVID recovery.

Policy shortfalls contribute to unsustainable resource use by: failure to account for environmental and human costs associated with resource extraction, production and disposal; disproportionate focus on end of life solutions, rather than better systems, design, use, reuse and repair; poor data; and territorial emissions accounting, which overlooks international emissions from UK consumption.

The Government has stated a desire to move towards a more circular economy and has identified clean growth as one of the grand challenges faced by UK businesses and society. Yet, the consultations from the resources and waste strategy, and the powers in the Environment Bill, overwhelmingly focus on 'end of life' solutions to waste and on recycling. Efforts to embed resource efficiency in business activities are limited to innovation funding, rather than developing comprehensive business policy and support mechanisms. And the net zero emissions target focuses solely on territorial emissions.

There is urgent need for an approach to resources that addresses all sectors of the economy and promotes joint action across government departments, particularly BEIS, Defra, MHCLG and DfT. The UK should consider additional emissions reduction targets based on consumption and should address implications for global supply chains and communities that currently produce the world's goods.

Dr Daniel Quiggin, Senior Research Fellow, Richard King, Senior Research Fellow, Energy, Duncan Brack, Associate Fellow, Energy, Environment and Resources Programme, Chatham House, Phil MacDonald, CEO, Ember and Shirley WWF UK

As the UK government is now committed to a net zero by 2050 target, we would like the Committee to examine:

- The issue of so-described "negative emissions", and negative emission technologies (NETs).
- The technologies and nature-based solutions (NBS) that are being explored to achieve negative emissions and how their use may impact the efficacy of climate mitigation efforts, carbon sinks and biodiversity.
- Viable alternative options for tackling the 10–15% of 1990 GHG emissions in the 2040s that models suggest will be difficult to remove through traditional mitigation measures.

- The degree to which the development of corporate net-zero plans (for example through the Science Based Targets Initiative) could encourage investment in technologies with unproven track records of delivering emission mitigations.
- This would involve examining techniques including afforestation, reforestation, habitat restoration, BECCS and DACCS, etc.
- Dealing with the “difficult to tackle” 10–15% percent of GHG emissions in the 2040s to achieve the 1.5-degree goal remains a serious challenge for scientists and policymakers; after several decades of development, CCS remains relatively undeployed while other technological solutions are barely out of the lab
- Many climate scenarios (integrated assessment models) assume NETs will be adopted (such as BECCS) without sufficient consideration of their effectiveness or impact if deployed at the scales run by the models. In the 2018 1.5C IPCC report, 81 of the 90 scenarios investigated all required NETs. (1)
- For example, Chatham House has suggested, that were all global uses of BECCS undertaken (as currently outlined in existing national climate plans) then it would require land use for the growing of bioenergy feedstocks equivalent to twice the size of India.
- More exploration is therefore required into what sustainable technologies should be favoured and what caveats and criteria should be used when advancing one technique or another to reach net zero.
- Despite a CCUS Action Plan (2), it does not appear that the UK government has a fully developed strategy with regard to using Greenhouse Gas Removal (GGR) technologies. This is, of course, understandable and the nature of the policy issue means that despite its huge potential environmental and climate impacts, it requires policy decisions decades ahead, it is therefore not seen as a political priority.
- Government has sketched initial plans around afforestation and invested a relatively small sum into CCS but without significant commitment.
- A UK industrial and decarbonisation strategy needs to fully account for the deployment lead-times, and complementary policies required, should certain options be taken. For example, some questions may include: if CCS is to be used how much will be needed? How much should come from industrial point sources vs BECCS, considering the land- use and socio-economic implications in the UK and overseas? Further, how much afforestation, or how much DACCS and when could it be deployed by at a reasonable scale? What implications does the use of DACCS have for future power generation?
- The BEIS Committee has an opportunity to guide the Government on policy making in this area by leading an inquiry and calling expert witnesses
- An inquiry can help encourage government and private sector thinking around what the realistic solutions are for the UK in this underexamined but crucial policy area

- (1) Carbon Brief In-depth Q&A: The IPCC's special report on climate change at 1.5C, <https://www.carbonbrief.org/in-depth-qa-ipccs-special-report-on-climate-change-at-one-point-five-c> (accessed 26 Oct. 2018).
- (2) See <https://www.gov.uk/government/publications/the-uk-carbon-capture-usage-and-storage-ccus-deployment-pathway-an-action-plan>, launched in November 2018.

Grantham Research Institute, London School of Economics (LSE)

‘The role of negative emissions technologies and offsets in achieving net zero emissions by 2050’:

The role of negative emissions in achieving net zero, the policies needed to drive deployment and the governance frameworks needed to ensure credibility. Questions could include:

- How can government policy ensure that NETs do not act as a mitigation deterrent?
- What is the appropriate mix of technologies to deploy to remove GHGs?
- What role does the Government have in ensuring the integrity and permanence of NETs permits?
- What role does Government have in funding the deployment of said technologies?
- What role does the private sector have in financing the rollout of NETs?
- Should there be a quantitative limit on the number of NETs permits that can be generated?
- Should the availability only be restricted for the ‘hard to abate’ sectors?

There is ongoing research and policy development within BEIS on this topic, including the BEIS net zero cost review and net zero strategy. Almost all modelled emissions scenarios consistent with the Paris Agreement’s target of limiting global temperature rise to well below 2°C include the use of greenhouse gas removal (GGR) or negative emissions technologies (NETs). But NETs are also controversial across a number of dimensions. A major criticism levelled at NETs is that they have the potential to act as a mitigation deterrent—delaying strong action that should be taken now.

Despite the prevalence of negative emissions in Paris-consistent scenarios, and indeed in plans to meet the UK’s own target, there is a paucity of R&D and regulatory support for emerging technologies. This is especially acute for demand-side policies.

Environmental integrity needs to be ensured in both the capture and storage of greenhouse gases to bring about genuine and permanent emissions reductions. It can be hard to define scientifically the equivalence between one negative emissions unit generated through a given NET and one positive emissions unit abated in the industry or power sectors.

Dr N E. Vaughan, University of East Anglia (UEA)

The Committee should scrutinise the challenges and issues with utilising biomass energy carbon capture and storage (BECCS) as a method of achieving net zero by 2050 and meeting global carbon emission reduction ambitions. The UK Government has promised to achieve net zero carbon emissions by 2050 and is introducing an Environment Bill in the current Parliament to support these efforts, with carbon capture and storage playing a key role. Biomass Energy in Carbon Capture is likely to make a substantial contribution to the removal of emissions from the atmosphere.

The Government's UK Carbon Capture Usage and Storage Action Plan acknowledges that "Low carbon gas from biomass is one of the potential routes to decarbonise homes, businesses and industry currently served by the gas grid" and the Committee on Climate Change (CCC) has suggested that producing negative emissions could be the most valuable use of biomass by 2050. The Committee should consider the feasibility and progress towards the Government's carbon emissions target in light of the challenges of delivering sustainable BECCS and the latest research findings. As the Committee on Climate Change has stated, "Maximising absorption of carbon from the atmosphere through the strategic use of land and biomass stocks is required to meet the goals of the Paris [Climate Change] Agreement". Assessing the UK's plans in light of the reality of global co-operation on policy and governance to deliver sustainable biomass feedstocks and incentives for CCS is therefore crucial ahead of the COP26 conference, which the UK is due to host, and enabling the UK to provide global leadership on this agenda. (References to research papers available on request).

Current modelling research that informs international decision making has assumed strong policy action on carbon capture and storage (CCS) and implicitly assumes sufficient governance in place to ensure bioenergy feedstocks are produced sustainably (i.e. not impacting on food production or causing deforestation). However, only one-third of the bioenergy crops are grown in parts of the world associated with more developed governance frameworks. Scenario planning of future CCS deployment rates suggests expanding CCS will likely be very challenging compared to historical rates of fossil, renewable or nuclear technologies and may be entirely dependent on stringent policy action, which the Committee should consider. Modelling suggests half of the biomass resource is derived from agricultural and forestry residues and half from dedicated bioenergy crops grown on abandoned agricultural land and expansion into grasslands (i.e. land for forests and food production is protected). Poor governance of the sustainability of bioenergy crop production can significantly limit the amount of CO₂ removed by BECCS, therefore the estimates of the amount of BECCS that could be delivered are potentially over optimistic and rely on policies and governance structures that do not yet exist. Promoting effective policy and governance structures must be an important part of the UK's internal renewable energy agenda and leadership.

Carbon Capture and Storage Association

The CCC recommend that by 2050 the UK has at least 73 million tonnes (Mt) CO₂ p.a. of net CO₂ removal from the atmosphere or 'negative emissions', using Bioenergy CCS (BECCS) and Direct Air Carbon Capture and Storage (DACCS) as part of a wider series of technologies. To encourage the development of negative emissions technologies along

the same development timeline as current industrial cluster decarbonisation proposals a robust GHG removal policy which covers BECCS and DACCS as well as afforestation and land management will be needed.

Currently there is no GHG removal policy, and there seems to be no coherent strategy within government to address the policy gap. Since the technological breadth of GHG removal technologies is very wide, the remit does not lay within one department, and requires a level of coordination across several departments to adequately address the challenge. As government is currently structured, the approach to meeting GHG reduction targets does not seem well suited to establish and enforce an effective GHG removal policy.

Given the importance of a robust GHG removal policy to achieve 2050 targets, the CCSA recommends that government structure should be prepared in the 2020s so as to be able to prepare and implement a robust GHG removal policy; this policy should encourage initiatives and projects to develop, laying the foundation and investment framework for GHG removal at the scale required for 2050 net zero targets to be met.

Any future inquiry could match well with the Environment Audit Committee Inquiries which recently closed a similar call for topics, with a particular focus on net zero and 'nature-based solutions for climate change'. Given the cross-departmental nature of GHG removal policy a joint inquiry could have greater impact.

Prof. P Ekins, UCL

The UK Government has a legally binding commitment to reduce Greenhouse Gas (GHG) emissions to net zero by 2050. It is essential for UK credibility that we are seen to be on track to achieving this target as it is critical for bringing countries together for COP26 meeting. Therefore, to be taken seriously, the UK needs a clear institute or body with accountability for achieving this goal and alignment across government. Currently these institutional arrangements are not clear.

What might be the implication, both domestically and globally, should the UK fail to achieve net zero by 2050. Or to achieve the fourth carbon budget (2023–2027) or the fifth carbon budget (2028–2032), which were formulated for an 80% GHG reduction target by 2050.

The UK is at risk of not being taken seriously in its target-setting, which will make it much harder to persuade other countries to strengthen their Nationally Determined Contributions to global emissions reduction, but more vitally there are potential legal, moral and scientific consequences of failing to meet the UK net zero target. The ramifications of missing the target, I believe, warrant an inquiry into the institutional arrangements currently in place.

Achieving net zero will require action across all government policy areas when it comes to consideration of all GHG-emitting sectors: power generation, industry, transport, buildings and agriculture. At present government is not institutionally aligned on this legally binding commitment, and a BEIS inquiry would be in a strong position to both scrutinise the current institutional arrangements as well as interrogate if and how alternative arrangements might be formed.

An inquiry may seek to consider:

- What current institutional arrangements exist and how they operate.
- What is currently missing and if an alternative arrangement, for example a Delivery Body analogously to the bodies set up for the Olympic Games in 2012, would be more appropriate.
- How to develop and operate an alternative delivery body.
- The roles of and implementation measures offered by various Government departments, for example:
 - i) BEIS' leadership on decarbonisation and engagement with key energy-intensive industrial sectors through and beyond the Industrial Strategy.
 - ii) The Treasury's implementation of an escalating carbon tax.
 - iii) DfT's commitment to supporting the switch to electrified vehicles.
 - iv) How the progress of any institutional arrangements should be monitored and evaluated.

Bristol Green Capital Partnership

Enhancing the relationship between the central and local state for action on climate change.

How can the local state be empowered to implement mitigation, behaviour change or resilience actions?

What new powers and responsibilities do cities/local state actors need to enable them to take concerted local action? What reforms to powers such as land use planning, development control, transport regulations, building control regulations etc might be required to enable the above. How can cities be supported and enable to undertake a test bed function for innovative / trail blazing action and in taking innovative new approaches that won't always have evidenced success / clarity on long term outcomes?

Dr P Dodds, University College London

UK Government support for sustainability strategies and actions by regional and local governments.

UK greenhouse gas emission reductions to date have primarily been in areas for which the UK Government has competence (e.g. electricity generation; gas boiler and car emission standards). As the focus moves to decarbonising transport, heat and local industry, regional and local governments are likely to have increasing roles.

Some local authorities are already developing net zero action plans. It is important that local plans are consistent with, or at least do not contradict wider UK decarbonisation policy, and that they underpin a cost-effective transition. This is difficult in practice because most decarbonisation pathway models work at national or perhaps regional levels and are not designed to examine small regions of the country. This means that local authorities do not

have information specifically for their area that would be necessary to inform a strategy that would be coherent with the national strategy. In turn, information about local areas is not passed up to the UK Government in order to improve the national strategy.

BEIS has yet to publish to full details of the consultation on ‘the future of carbon pricing’. With the UK’s participation in the EU ETS looking increasingly unlikely, and the prospects of a ‘deal’ far from certain, significant focus is needed on the fall-back option which is expected to be a carbon tax.

London Councils

We would strongly support a future BEIS inquiry on the role of local government in supporting the development of the low carbon economy. Local government has a significant role in leading both local decarbonisation and local economic development, including through engagement with Local Economic Partnerships. However, there is currently no consistent strategy for driving local low carbon growth, and without a joined-up approach to policy and funding, we risk failing to meet both local and national decarbonisation targets and missing out on crucial growth in the low carbon sector. We also risk missing the opportunity to showcase these opportunities at COP26, next year.

We propose that the Committee might like to consider the following questions:

- How effectively is BEIS empowering local government to support the green economy and national decarbonisation targets?
- How can local authorities support economic recovery from coronavirus via support to zero and low carbon SMEs?
- How effectively is BEIS working with other departments to support development of the local zero and low carbon economy through e.g. retrofitting and house building, infrastructure, transport, agriculture and climate change adaptation (including flooding)?

Estimates suggest that collectively, local government can influence around 70% of carbon emissions in England thanks to the sector’s local knowledge, ability to bring together the wider community and delivery of relevant services. Councils have real insight into the nature and challenges of their local business community, and are uniquely well placed to support the development of the local and regional low carbon sector, through direct financial support, their convening role, the power of public sector procurement, and their ability to support a pipeline of skills that can support low carbon businesses, for example in retrofitting and decentralised and community energy.

Councils can also support the greening of business operations through energy efficiency grants to SMEs, and the enforcement of standards, for example for local air pollution and the Minimum Energy Efficiency Standards.

As we move away from the peak of the coronavirus crisis, there is an important opportunity to ensure that Government’s economic stimulus supports the transition to the low carbon economy, including funding devolved to local councils to support local and small businesses. Equally important, the post-coronavirus response should not be propping up high carbon industry and sectors.

Currently, the Government does not allocate local authorities the powers or funding they need to ensure their economies operate on a low carbon basis. We would like to see the Committee examine the most effective suite of policies, powers and funding needed to enable local government to catalyse the low carbon economy, including:

- The role of the Shared Prosperity Fund
- The role of Local Industrial Strategies
- The role of Local Enterprise Partnerships
- Effective mechanisms for local authorities to:
 - i) Fund local low carbon growth
 - Support and fund the greening of the wider business community
 - ii) Support the development of green skills for different low carbon sectors
 - iii) Enforce relevant standards
- The role of public sector procurement

Dr Cristina-Steliana Mihailovici

Business and consumers in the context of COVID19 and climate change.

This topic is very actual and is affecting the business environment, the consumers and the entire community.

Business and consumers are the most affected by the COVID19 pandemic.

Studying in deep the science we can conclude that exist a strong link between climate change, business, consumers and health.

Because of climate change the Arctic is melting and various old bacteria's and viruses are coming back to life. Also, all rubbish in the air, water, forest or entire environment is attracting bacterial infections and the quality of life is affected and deteriorating because of this issue.

More than that we have now a pandemic situation because of a virus who is traveling around the world.

Business and consumers, health and wellbeing, all living conditions are suffering from this critical situation.

How we can improve this? First of all, taking care better from our environment. Green should be the key word in all businesses or consumers life. This will attract a better quality of life and an amazing development and growth of our economies.

Green energy, green building's with walls of plants, green spaces. This means the best air quality for everyone.

Online working (where it's possible) is other key element for business and consumers in our times. This is strongly linked with sustainability. We are reducing costs for renting buildings, electricity, cleaning, transport or the other bills and we are more focused on the needs of our consumers, assuring the best conditions and flexibility for the entire business, consumers and entire community. Building a green business, making a stronger and healthier economy and environment, this are the key elements for the most profitable business in our days.

Online business in education and training represents an effective method for our future generations.

I really hope that after all this negative experience all over the world, we will develop a critical thinking about how we will improve in business, industries, education or life.

This is strongly linked with the climate change, with all green methodology which we can use to improve our customers life and experience, and at the end, our lives like businesses, like community.

Being affected by COVID19, the entire world should be focused not only to health and recovery, but on the future. How we will survive after all this critical situation?

It's time to think green in business, education, health, industry and all the other domains.

Grantham Research Institute, London School of Economics (LSE)

Managing the impact of COVID-19 on the UK's efforts to decarbonise. This inquiry would explore what the lasting impact could be of COVID-19 on domestic efforts to decarbonise. Questions could include:

- What risks could COVID-19 pose to domestic efforts to decarbonise the economy?
- What approaches should be taken by BEIS to ensure that decarbonisation policies and regulation do not exacerbate the vulnerability of businesses that have been heavily impacted by COVID-19?
- What approaches should be taken by BEIS to ensure that response measures to COVID-19 align with and contribute towards the commitment to reach net zero emissions of GHGs by 2050?
- Should BEIS's approach to meeting the 4th and 5th carbon budgets be amended in light of the impact of COVID-19? If so, how?
- Are there specific policy levers to help businesses and consumers manage the impact of COVID-19 which present opportunities to accelerate decarbonisation?
- Are there lessons which BEIS should learn from domestic and international responses to tackle COVID-19?

BEIS is responsible for the UK meeting its carbon budgets. COVID-19 is currently having a profound impact on UK economic activities, businesses, consumer behaviours and

emissions. While it is impossible to predict the long-term emissions outcomes resulting from COVID-19, the design of policy in the coming months could play a key role in influencing the extent of its impact.

Decarbonisation pathways for all sectors of the economy must be robust to the impact of COVID-19.

Key policies which seek to deliver this decarbonisation (e.g. carbon pricing instruments and taxes) must be re-evaluated to ensure they a) do not exacerbate the vulnerability of businesses heavily impacted by COVID-19 in the short term and b) are still appropriately designed and sufficient to drive decarbonisation in light of COVID-19 and its impact.

Green Alliance

The coronavirus crisis has triggered a global recession. Unemployment is rising steeply and many companies will likely go out of business. The level of disruption has also revealed the vulnerability of our economy to external shocks and highlighted the need to mitigate the risk of such disruptions occurring again.

In wake of the crisis, a simple focus on returning to business as usual would be a missed opportunity to strengthen our economy, exposing businesses to future shocks, including those triggered by climate change. Instead, the Government should ensure that recovery plans support business investment in solutions that promote long term resilience and scale up solutions that mitigate future climate and environmental risks.

The Government's stimulus plans will have profound implications for our progress towards achieving these goals. We recommend that the Committee investigates how the Government can embed decarbonisation priorities in its recovery plans, including by: identifying what low carbon and nature friendly solutions should be prioritised during the recovery in light of the UK's decarbonisation commitments; the role of public investment and policy in promoting their scale up; and what conditions should be attached to potential support provided to industries that are currently polluting to ensure they take significant steps in line with the net zero target.

The IPCC 1.5C special report emphasised that climate action over the coming decade is of utmost importance and, as highlighted by the International Monetary Fund's call for governments to green their responses to the crisis, "decisions taken now will shape the climate for decades".⁴

The COVID crisis and subsequent economic stimulus could undermine progress at this critical time. The crisis has already hit low carbon sectors globally and led to the temporary rollback of key environmental policy. Failing to embed low carbon priorities in the recovery plan risks supporting polluting industries that exacerbate the climate crisis, and incentivising systems that are not resilient to future economic and environmental shocks. This would also put the UK at a disadvantage compared to countries with more ambitious stimulus packages to promote growth in low carbon industries, undermining our international competitiveness as world economies decarbonise.

Instead, as outlined in a recent study by academics including Nobel laureate Joseph Stiglitz and climate expert Lord Nicholas Stern, the most effective way to revitalise the

4 International Monetary Fund, 2019, Greening the recovery

economy is by accelerating uptake of low carbon and nature friendly solutions.⁵ These would benefit economies across the country, keep businesses at the forefront of global markets and deliver a wealth of benefits to people, including cleaner air, warmer homes and more liveable neighbourhoods.

Government will play crucial role in directing investment to foster clean growth and in setting policy to boost low carbon markets.

The economic stimulus should include a combination of public spending and investment. Previous analysis by a group of NGOs shows that, to put the country on track for net zero, government should invest £42 billion per year, or around 2% of GDP, towards vital low carbon infrastructure (such as transport and energy) and scaling up of business decarbonisation solutions.⁶ This scale of investment is comparable to what the Committee on Climate Change had estimated to be needed to achieve net zero by 2050, and could be targeted to projects with highest growth and employment opportunities. Where corporate rescue schemes are introduced, these should be made conditional on concrete industry action towards decarbonisation.

Policy and regulation will also need to evolve. As emphasised by the Committee on Climate Change, policy is currently failing to drive business investment and, already before the crisis, the UK was not on track to meet its fourth and fifth carbon budgets. In the wake of the crisis, policy change will be vital in stimulating consumer demand for environmentally friendly goods and services, as well as provide the market signals, beyond the initial government stimulus, which will incentivise long term business investment.

Greenpeace UK

Greenpeace UK recommends that the BEIS Committee prioritises a new inquiry on 'Greening the post-Covid Recovery.' We recommend the Committee looks into the following questions:

- Which sectors of the economy would be most suitable for receiving government support, bearing in mind the Government's priorities of stimulating economic growth and recovery, tackling the climate and nature emergencies and 'levelling up' communities across the UK?
- What criteria should the Government apply when determining which recovery measures to support? (Including how projects can build on the UK's existing industrial specialisms; generate employment; offer significant multiplier effects; unlock private investment; level up 'left behind' regions; improve public health; align with the Paris Agreement targets; and support delivery of net zero)
- Which government policies, spending decisions and tax arrangements would be most suitable to deliver the best outcomes in each sector?
- How can lessons be learned from the response to the global financial and economic crisis from 2007–2012 to support a more economically, socially and environmentally resilient society?

5 C Hepburn et al, 2020, 'Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change?', Smith School Working Paper 20–02

6 Green Alliance, Greenpeace et al, 2019, Government investment for a greener, fairer economy

- How can BEIS address gaps in skills and training to support greater skilled employment in low carbon growth industries, and support the workforce to transition from declining polluting industries? How can BEIS fund the green recovery?

To stand the best chance of averting the potentially devastating impacts of both climate catastrophe and the global recession stemming from the coronavirus crisis, the Government must put at the top of its agenda creating jobs, attracting private investment and boosting demand through an economy-wide recovery package. This needs to be compatible with delivering net zero greenhouse gas emissions before 2045.

Done right, many of the investments and policy levers that will be key to tackling the climate and nature emergencies while driving economic recovery will also help to level up communities across the UK, stimulate local economies and improve public health and wellbeing.

A large majority of UK adults think the climate change crisis is as serious as that of coronavirus. The long-term recommendations that the BEIS Committee-supported Climate Assembly provide should shape the UK recovery package so that net zero is delivered with the grain of public support. The Assembly recommendations should form an important lens through which the Committee formulate its recommendations on the green recovery inquiry.

As a member of the G7 and host of COP26, the next global climate change conference, the UK has a unique opportunity to lead the world in the green recovery and demonstrate how climate-proofed infrastructure and high environmental standards can lead to greater prosperity and wellbeing for all.

The Government has started to talk the talk on a green post-Covid recovery. There are also a range of live BEIS policy processes—the Energy White Paper, offshore wind sector deal, National Infrastructure Strategy, Heat Strategy and UK's Nationally Determined Contribution to UNFCCC—which are in the process of being drafted or updated to reflect Government's binding net zero commitment and technological advances. However, there is no joined-up strategy across BEIS and Cabinet to seize the opportunities of a green recovery across multiple sectors, boosting job creation, private investment, raising incomes and tackling the climate emergency altogether. Thus, some of the Government's existing policies undermine the delivery of the green recovery vision. For example, BEIS's current approach to power generation, which fails to account for the failure of nuclear, and the dramatic cost reductions and technological advances of renewables.

BEIS as a department must show leadership in joining up the dots and having a coherent overview of the cross-sectoral priorities for investment and policy support as part of the green recovery, to ensure all levers of government are aligned to allow those industries to thrive.

Greenpeace's climate emergency manifesto and joint NGO net zero spending report sets out a range of measures that would be strong candidates as part of the green stimulus package. <https://www.greenpeace.org.uk/resources/climatemanifesto/> <https://www.greenpeace.org.uk/resources/government-invest-climate-nature-emergency/>

Green Innovation Policy Commission

The pandemic has put the spotlight on the vulnerability of global economies to external shocks and highlighted the need to build greater resilience across all sectors. As the economy recovers, the UK should not ignore the lessons from this crisis and simply seek to return to business as usual. This would expose businesses and communities to future shocks, including those caused by climate change and environmental degradation.

Instead, it is vital that UK businesses fast forward solutions to boost climate change mitigation and adaptation and enhance the environment. The GIPC believes that only by positioning these priorities at the heart of the recovery will the UK succeed in strengthening its economy and enabling businesses to mitigate and better withstand possible future shocks. Therefore, we recommend that the Committee investigates how the Government, through its recovery plans, can promote innovation-led economic growth towards a resilient low carbon future. Importantly, as challenges to green innovation vary across industries, we recommend that the Committee considers a range of tools that government could adopt to promote a resilient recovery, including where public investment is essential to deliver low carbon solutions and where climate and nature friendly business investment can be scaled through policy change.

The IPCC's 1.5C special report has emphasised that action over the next decade is vital to tackle climate change and limit the risk of climate related shocks. Yet, even before the crisis, the UK was not on track to meet its fourth and fifth carbon budgets. Climate and environmental action has also been undermined by the pandemic, which has hit low carbon sectors globally and led to the temporary rollback of key environmental policy.

In the wake of the crisis, government plans for the recovery will be vital in enabling business investment in climate and nature friendly solutions. Decisions regarding infrastructure investments will shape economic activity for decades to come, while policy and regulation will dictate business incentives to develop innovative products and services that will keep them at the forefront of global markets.

By embedding climate and environmental priorities in the recovery plan, government will strengthen the economy by ensuring it is prepared for a net zero future, promoting business solutions that will be in high demand as world economies decarbonise, boosting resilience of local economies and benefiting communities across the country. Failing to do so will instead delay climate action and undermine the resilience and competitiveness of UK industries, threatening jobs and communities.

The GIPC believes that policy plays a vital role in enabling innovative business solutions to promote decarbonisation and environmental restoration. The Government's plan to support the UK's economic recovery will shape businesses' ability to adopt these new solutions through both fiscal stimulus packages and public policy.

Public investment and spend will be crucial to deliver low carbon and green infrastructure, including low carbon transport, housing and energy systems, which will also stimulate further investment and innovation in clean alternatives. The Committee should identify where public investment will be essential to meet our decarbonisation targets and what projects should be prioritised based on multiplier effects and social benefits. Beyond

investment in low carbon projects, stimulus spending decisions should be assessed against the UK's climate and environmental goals to avoid locking in carbon intensive and environmentally damaging activities.

Furthermore, policy change and progressive regulation should address areas where current policy and regulation is failing to encourage green innovation. This can stimulate demand for environmentally friendly alternatives (from electric vehicles to renewable energy technology, from resource efficient products to sustainably produced foods) and is key to set the long-term trajectory to enable business investment in innovative solutions that benefit people and nature.

A Froggatt, Chatham House

Current policies and measures are inadequate, according to the Committee on Climate Change, to meet 2050 net zero carbon commitment and shorter-term carbon budget objectives. It is, therefore, clear that additional legislation is required, but this will require long-term clarity about how the UK economy and energy sector should operate. Transforming the energy sector in order to meet the net zero target was already complex, now HMG will be doing so under increasingly uncertain conditions of Brexit and Covid-19 and the impact on energy prices. Both are significant events with considerable implications for energy demand, investment, policy capacity, and public finances.

The Committee should look at the positive role(s) that the net zero target, and associated policies, can play in providing greater stability and certainty for markets, companies and consumers. Key issues could include:

- Policy capacity implications of Brexit, the oil price crash and Covid-19.
- Opportunities to use the zero-carbon target to underpin an explicitly low carbon stimulus package, which given the UK's push for a low carbon export industry in delivering Brexit trade policy, is a win-win.
- The lessons from recent declines in oil and industrial electricity: impact on clear air and GHG targets and on incumbent power generators and energy suppliers, and the role increased support for EVs could have in maintaining the recent improvements in air quality.

The UK has made an ambitious commitment domestically to net zero by 2050 and, as the UK is co-chair of COP 26, it is critical HMG continues to demonstrate its ambition internationally. This is more challenging given the changing policy environment, as a result of Brexit, and as energy demand and investment remain uncertain due to the pandemic. For example:

- Leaving the EU requires the UK to put forward its own National Determined Contribution as part of the UNFCCC process; establish a new method of putting a price on carbon; and re-think its trading relationships. These are all processes requiring significant energy policy knowledge and committed civil service capacity.

- National governments and multilateral institutions are preparing economic stimulus packages to respond to the impact of the Covid-10 pandemic. Their alignment with climate ambition will be essential in meeting carbon targets, building domestic low carbon industry capacity, and encouraging job growth.
- Reduced energy consumption in recent weeks has had an evidential improvement on air quality. This could be used to encourage the implementation of measures to reduce pollution over the long-term.
- Ensure the implementation of the UK wide Emissions Trading System that is linked to the EU ETS or that a carbon tax can be designed to ensure longevity and provide market assurances;
- Demand side policy is updated to allow for consistent, longer-term demand reduction and for greater behind-the-meter demand flexibility and system balancing.
- If the UK cannot remain aligned with the EU then measures should be put in place to maintain operational efficiency of interconnectors as they are considered particularly important for both low carbon transition and energy security reasons; and that any reshaping of energy policies as a result of Brexit are done so with zero carbon targets clearly in mind.
- The Government should ensure that any company bailouts, infrastructure investment or global stimulus financing (through the UK's engagement with G-20 and financial institutions) is aligned to low carbon energy and industrial strategies including that for the UK Continental Shelf. (UKCS)
- There should be significant and dedicated civil service capacity for meeting 2050 zero carbon targets.

Grantham Research Institute, London School of Economics (LSE)

UK decarbonisation and the future of the Industrial Strategy'. This issue will cut across a number of key themes which BEIS works on. This will cover interactions between the UK's Industrial Strategy, its supporting policies and the UK's legal commitment to reach net zero annual emissions of greenhouse gases by 2050. These interactions could be conflicting / reinforcing policies, sectors of critical importance or governance processes across departments. Key questions could include:

- How should the Industrial Strategy and Clean Growth Strategy be developed to put the UK on track to meet the 4th and 5th carbon budgets, and the net zero target, and in producing the goods and services needed to achieve the goal?
- How should the UK approach future industrial policymaking, either from a technical or governance perspective?
- In which sectors could demand-side policies to reduce domestic emissions spur the most promising opportunities for UK businesses? Why is this?
- To what extent should the UK's Industrial Strategy direct support towards production of specific zero-carbon technologies as opposed to being agnostic?

- How can the Government ensure that the UK has the innovation and skills which it needs to be globally competitive in zero-carbon goods and services?

BEIS has a number of policies and strategies in place seeking to drive growth in the UK, including the Industrial Strategy, the local Industrial Strategies and the Clean Growth Strategy. Most of these documents have remained broadly unchanged since the introduction of the net zero emissions target. There is an opportunity to refresh BEIS's industrial policy documents to directly tie growth plans to the markets for zero-carbon goods and services, which are growing around the world as decarbonisation gets under way.

The UK's Industrial Strategy documents and supporting policies should be revisited and either confirmed to be appropriate, revised or replaced to ensure that they are harmonised with the UK's demand-side policies to reach net zero emissions of GHGs by 2050. This can enable decarbonisation policies to act as direct drivers of opportunities for UK businesses, and to ensure that industrial policies contribute towards meeting net zero. For instance, all Sector Deals should have a clear focus on achieving net zero (as suggested by CBI).

Aldersgate Group

The Business, Energy and Industrial Strategy Select Committee should consider running an inquiry jointly with the Education Select Committee to examine the jobs and skills that are needed to build a low carbon economy.

As the UK economy transforms to meet the target of net zero emissions by 2050, it will be important to deliver a just transition and ensure that those currently in the education system are adequately prepared for jobs compatible with a net zero economy. This can be done by directing low carbon investment in areas most likely to be impacted by the transition and investing in a national skills strategy to embed sustainability training at all levels of the educational system.

The inquiry should consider as part of its remit:

- Current and future skills requirement
- The impact of decarbonisation in high carbon sectors, focusing particularly on jobs
- Opportunities of the transition towards decarbonisation
- Vocational training and further learning
- The role of higher education
- Apprenticeships

Institute and Faculty of Actuaries

There is a need to address longer term under-investment in infrastructure and the soon to be published National Infrastructure Strategy presents an opportunity for the Committee to look at how far it goes in addressing the institutional investment gap. Barriers to investment need to be removed if the UK is to meet the shortfall in infrastructure. The

Strategy should seek to do this by giving greater focus on sustainability considerations and providing greater resilience in infrastructure assets, to mitigate risks such as climate change, extreme weather events, and obsolescence due to rapid technological and social progress.

In his first Budget statement last month, the Chancellor Rishi Sunak announced the biggest programme of public investment in infrastructure for many years, with £600bn to be spent over this Parliament on housing, transport and broadband. This decision reflected the removal of some of the uncertainty around Brexit, but more importantly a recognition of the need to address longer term under-investment in infrastructure.

More detail will be provided in the coming months when the Government unveils its National Infrastructure Strategy. The launch of the Strategy, delayed because of the coronavirus outbreak, will present an opportunity for the Committee to assess its position on addressing the barriers to the development of the UK's infrastructure needs, with a particular focus on identifying reasons why such projects have failed in the past, and what can be reasonably done to help them succeed in the future.

One of the biggest barriers to infrastructure is the insufficient allocation of capital from business. Insufficient private investment is being committed to support priorities for new projects or for improvements to existing infrastructure. UK institutional investors face challenges if they wish to invest in infrastructure. Pension funds often lack the resources to research projects in depth, and defined contribution funds must also meet requirements for daily liquidity. Insurance companies need to reassure regulators that investments meet stringent solvency requirements.

In the long-term, a greater focus on sustainability considerations could change investment priorities and help to reduce the infrastructure investment shortfall. The UK has made domestic and international commitments to achieve environmental and sustainability targets, such as the Paris Agreement limiting carbon emissions, and the UN Sustainable Development Goals. To meet these targets, a considerable amount of new and resilient infrastructure will be needed, requiring significant capital investment. We have noted that if the externalities of all investments were incorporated into the risk assessment, this could level the playing field and bolster the fundamentally strong case for investment in infrastructure. In addition, a lifecycle approach should be used to value projects from inception to decommissioning. As these kind of approaches focusing on sustainability become more integrated into mainstream investment thinking, this could help to increase the overall allocation of investment to infrastructure projects with the right characteristics.

Part of solving the funding gap also lies in providing greater resilience in infrastructure assets, to mitigate risks such as climate change, extreme weather events, and obsolescence due to rapid technological and social progress. In a recent policy briefing we have argued that:

- The Government or the National Infrastructure Commission (NIC) should issue guidance on how resilience options should be identified, how to analyse them, and how the work should be aligned with the procurement process to ensure that 'best value' is obtained.
- In developing solutions, there should be a focus on balancing 'quality of life' impacts against costs.

- The NIC has observed that resilience analysis is only currently used for larger public sector projects, but one reason for extending resilience analysis to smaller projects is the trend towards increasingly interconnected infrastructure
- If the resilience analysis is fully disclosed to the investors, they will be better able to decide whether the degree of resilience adopted is sufficient for investment purposes.

Institute and Faculty of Actuaries

Every sector has a role to play in helping the UK reach net zero by 2050. Green Finance will play an essential role in funding the transition to a net zero economy and to bring the ambition of the Industrial Strategy to life. The Committee should consider how it can work in collaboration with other committees in the Green Finance area. This would have the added effect of providing consistency in the recommendations provided to Government, in a strong, collective voice.

The Government's Industrial Strategy will be essential in creating jobs, boosting productivity and encouraging investment across the UK. Green Finance will play an essential role in funding the transition to a net zero economy and to bring the ambition of the Industrial Strategy to life. Actuaries' expertise allows them to identify and manage long-term risk. They play an important role in promoting the understanding of climate risk, providing advice on investment portfolios, to promote stewardship and to allocate capital.

There are a number of barriers that exist to growing Green Finance in the UK. Failure on the part of decision makers within firms to recognise responding to climate risk as a shared responsibility is perhaps one of the greatest barriers. A shift is required to align the objectives of the financial system with net zero commitments. This will require a collaborative effort from policy makers, regulators and industry to create incentives to organise and direct capital towards green products.

Effective and thoughtful disclosure is essential to understanding the financial risks of climate change and for the purpose of enabling investors to make adequately informed decisions. The Government has recently taken steps to articulate that Green Finance is an important priority, particularly through the publication of the Green Finance Strategy in July last year. We welcomed the Strategy's expectation for all listed companies and large asset owners to disclose in line with the Task Force on Climate-related Financial Disclosures (TCFD) recommendations by 2022. Actuaries can use their unique skills to play a vital role in driving the TCFD's recommendations by conducting scenarios analyses that identify risk exposure and the potential effects of various mitigation measures.

We also welcomed the Strategy's commitment to establish a joint taskforce with UK regulators, chaired by Government, which will examine the most effective way to approach disclosure, including exploring the appropriateness of mandatory reporting. We would encourage the Committee to take forward this exploration if it is not progressed by a joint taskforce.

A focus on this topic is timely given the commitments made in the recent Budget announcement around the Government's promise to 'deliver green growth and protect the

environment', in particular the commitment of £10 m to support the design and delivery of net zero policies and programmes. This inquiry could support the Government in making decisions about where this funding goes and then provide this clarity to investors.

Finally, the Committee should consider how it can work in collaboration with other committees in the Green Finance area. This would have the added effect of providing consistency in the recommendations provided to Government, in a strong, collective voice. We note it would naturally fit with the Environmental Audit Committee's prior Green Finance inquiry, and the Treasury Committee's current inquiry into decarbonisation of the UK economy and Green Finance.

Carbon Watchdog

Carbon rationing is a policy that can be implemented both locally in communities and nationally.

Locally it could allow citizens to reduce their carbon footprints by bringing together carbon emissions information from local transport, energy providers, business groups and similar. There are technical tools that could be implemented quite cheaply following various prototypes.

On a national scale, if the BoE deployed a CBDC based on carbon, citizens could be allocated a per capita carbon ration. Oil, coal and gas producers could collect and pay back the rations against all fossil fuels extracted. As a second currency, carbon rations would flow through the supply chain from citizen to fossil fuel producer, enabling the real-time calculation of carbon emissions by every business: their carbon emissions would be visible as the total of the carbon rations each business requires. Those required rations would be obtained by each business from their normal customers. Government oversight would only be required for the smooth functioning of the carbon ration market and payments system, and for auditing the oil, coal and gas producers as they offer up carbon rations obtained when selling their products.

Net zero goals could be targeted by regular reduction of allocated rations.

Carbon rationing has had very little attention since it was dropped by the Labour government in 2008 after its unpopularity in the press. The plan was to introduce rationing only for citizens. Research results show rationing would have definite benefits, which could already be realised in local community schemes. However, changing one simple but major facet of the rationing mechanism could leverage those benefits ten-fold across the economy. In simple rationing as during the war, rations are surrendered to the Government by retailers who collect them from retail customers. Changing this so that all of business and the economy becomes subject to the rationing would occur if the oil, gas and coal producers were made the ultimate collectors of the rations at the end of every supply chain. They would surrender the collected rations under audit weight-for-weight against the quantity of fossil fuels extracted.

This rationing mechanism would be a more direct stimulus to the decarbonisation of UK business and industry than any other carbon policy. Similarly, it is the only policy allowing direct control of emissions quantities. And along with several other key benefits, it would radically simplify the emissions data monitoring process.

The implementation of rationing would require central bank oversight and imposition of controls via the HMRC at trade borders. The impact on the UK population and its businesses would be extensive but readily determinable, and it is increasingly apparent that the public possesses the appetite for such a move, especially since the policy is fundamentally fair, being based on an equal per capita ration allocation. Rationing has multiple benefits compared to carbon taxes or other pricing schemes, firstly in its effectiveness in creating the desired emissions reductions across the economy, but also because its management would not necessarily have to fall under control of the Treasury which tends to treat climate targets as secondary concerns to economic goals. The management of carbon ration supply would fall to an independent body which would increase or decrease rationing to balance CO2 emissions reduction against the economic impacts that it causes, to find the optimal path to decarbonising the economy.

K Rigby

I would like the Committee to consider the advantages of ditching the 'net zero carbon emission' target now—instead of waiting until it becomes obvious that it can never realistically be achieved.

CO2 makes up 0.04% of the atmosphere; fossil fuel combustion contributes just 3% of that 0.04%. The UK's portion of that 3% is less than 2%. That's 2%... of 3%... of 0.04%. Even if it could be achieved, a zero carbon UK would reduce the CO2 in the atmosphere by 0.000024%

Drop it: it's pie in the sky. Attempting to achieve it will wreck the economy.

Global Warming Policy Foundation

There is an urgent need to address the costs of achieving the net zero CO2 emissions target. While Parliament has accepted the net zero target, the Committee on Climate Change has admitted that it has not prepared any costing for the project, and many of the claims in its report on the subject are either debatable or wrong. It is therefore likely that MPs were misled into voting for a measure that will be much more expensive than they thought.

Net zero is an extraordinarily ambitious target in its own right. In the wake of Covid-19 it is simply unaffordable. GWPF's attempt to estimate the cost is ongoing, but has reached a running total close to £3 trillion, or approximately £100,000 per household. There is now hard evidence that offshore wind prices are barely falling, thus undermining one of the key pillars of the CCC's assumption that net zero could be achieved at modest cost. Electricity prices have doubled since 2002. The Committee could ask whether prices rises will continue for the next ten years too, and what the effect on the recovery will be. Can consumers be asked to pay thousands of pounds per year in net zero costs when they are trying to recover from the pandemic? Can businesses afford months of lockdown and years of net zero?

The net zero target should be abandoned.

Scottish Carbon Capture & Storage

Decommissioning of oil and gas assets: The UKCS is a mature basin, where many fields are reaching, or have reached, the end of their productive life.

It is almost certain that other North Sea uses – such as CO₂ storage, hydrogen transport and storage, offshore renewable energy generation and nature conservation – could make some use of both the physical infrastructure and the data and modelling that has been accrued through the lifetime of an operation.

However, decommissioning of oil and gas assets has begun without a clear requirement to preserve assets that may be re-used, unless there is a defined project at the time of decommissioning. Since CCS is an emerging industry in the UK – but one which will be required by the middle of this decade – assets that could potentially be re-used for CO₂ transport and storage risk being removed or otherwise sterilised because of a lack of a firm project.

There are questions about whether the current approach to decommissioning is fit for purpose in an economy moving towards net zero greenhouse gas emissions, and whether there is flexibility within existing legislation and international agreements to deactivate assets in a way which would enable them to be re-used in future.

The UK Government consulted on the re-use of oil and gas assets for CCS in 2019. However, the consultation was very limited in its scope, and missed the opportunity to consider uses of oil and gas infrastructure outside of CCS. It also considered a much narrower range of assets than actually have potential for reuse, and continued to advocate a reactive, case-by-case approach, rather than a strategic and proactive assessment of the decarbonisation and nature conservation potential of existing North Sea assets.

Furthermore, although the Government's response to the consultation was due at the end of 2019, it still has not been published.

Government policy in this area would be improved by a strategic and proactive approach to oil and gas decommissioning, ensuring that the best use is made of all assets.

In addition, Government should consider taking on liability for assets that have been deactivated (and have met the decommissioning requirements) and keep them available for future re-use for CO₂ transport and storage.

Scottish Carbon Capture & Storage

Maximising decarbonisation in the North Sea. The North Sea is home to the UK's oil and gas industry, but also, increasingly to offshore wind generation, and other forms of renewable electricity. At the same time, it supports a wealth of biodiversity, including carbon-sequestering kelp forests and internationally important seabirds, and supports tourism and fishing industries.

The UK Continental Shelf (UKCS), particularly in North Sea, also holds around 40% of Europe's known CO₂ storage resource: a resource that will become increasingly valuable as the world drastically reduces its greenhouse gas emissions in line with the Paris Agreement.

It is clear that there is huge potential for the North Sea to contribute to the UK's greenhouse gas emissions targets and, through providing a CO₂ storage service, to other countries' targets too.

However, it is unclear whether the governments of the UK have a clear understanding of the decarbonisation potential of the North Sea, and how the different sets of technology and infrastructure could, or should, interact.

The UK and devolved administrations have enacted net zero greenhouse gas emissions targets, which will require a step change in effort across the economy, compared to the 2008 Climate Change Act.

It is clear that decisions must be made now which will enable future decarbonisation; it is also clear that there is no single technology or approach that will bring the UK to net zero emissions. For this reason, there is a need to ensure that approaches to decarbonisation, particularly in the North Sea, where much of the UK's unique resources (for wind power, and for CO₂ storage, as well as oil and gas reserves) is located, are coherent and complementary, and maximise the decarbonisation potential.

At the same time, the significant biodiversity in the North Sea must also be protected and enhanced.

The UKCS is a mature basin, which provides the UK with the opportunity to show global leadership in the transition to a net zero economy. This is particularly salient as the UK prepares to host the next round of UN climate negotiations.

How can policy in this area be improved?

A realignment of the role public bodies with interest in the North Sea towards a clear goal of maximising decarbonisation, within the context of the sustainable development goals (SDGs).

An assessment of the role and importance of the North Sea in decarbonising the UK, including an understanding of conflicts and synergies between approaches, technologies and infrastructure.

Spatial planning of North Sea uses, including the subsurface, i.e. taking a three-dimensional approach, with a clear aim of maximising decarbonisation within the context of the SDGs.

These changes would require inter-government cooperation, where issues are devolved to the Scottish Parliament.

Prof M Bradshaw, UK Energy Research Centre (UKERC)

Natural gas is the most important element in the UK's energy system and will soon be the most carbon-intensive source in the energy mix. Thus, a critical question going forward is: what will be the future role of natural gas? Gas consumption is split between: power generation, households where it provides 80%+ of heating, and industry where it is a source of heat and a raw material. The role of gas is significant, providing the largest share of our energy needs in the winter and is a critical source of storage and flexibility. Today, half of the gas consumed in the UK comes from domestic sources, but offshore production is declining and onshore shale gas is stalled; consequently the UK will have

to increase imports, depending on the scale of demand. There are pathways that see natural gas demand in 2050 at 70% of current levels as it becomes the raw material for a hydrogen economy, while other pathways that rely on electrification could see the current gas infrastructure rendered redundant with significant economic costs. Between the two visions there is a need to manage a changing and declining role for natural gas in the UK's energy system.

While natural gas is currently a critical component of the UK's energy system, there is considerable uncertainty about its future role. The current midstream infrastructure that links sources of production to points of consumption represents a significant national asset. Thus, there is need to develop a clear strategy for the future role of natural gas in the ongoing transition to net-zero energy system by 2050. Furthermore, modelling suggests that a pathway that includes a continued role for natural gas, but with CCUS, represents the most cost-effective route to decarbonisation. These cost considerations are likely to be paramount once the economic impact of the coronavirus pandemic becomes clear. The commercial deployment of CCUS and the development of a hydrogen infrastructure requires clear policy guidance and government support. Equally, the incumbent natural gas industry requires a clear road map for its future as it will need to make significant investments to adjust the current infrastructure to it meet its zero-carbon future. All of this requires careful analysis of the potential future role(s) of natural gas to ensure that energy security is not compromised during the transition and that the necessary investment is made when and where it is needed.

Researchers at UKERC have argued that the Government needs to come forward with a clear strategy for natural gas in the low carbon energy transition. We characterised the current situation as 'gas by default' whereby there is the simple expectation that secure and affordable natural gas will be available to consumers when needed. This proposition was tested to the full by the 'Beast from the East' in the Spring of 2018. It is also likely to be tested as the UK ends its transition period after exiting the EU at the end of 2019. On the current timetable, at the beginning of 2021 the UK will be outside the EU's single energy market and, depending on the nature of any future agreement, this may have implications for gas security. This challenge, in addition to those raised above, requires a 'gas by design' approach that is underpinned by a coherent 'Gas Strategy' that both ensures energy security in the short-term, when gas remains the most important element in the UK's energy system; and charts a clear pathway—or options—to support the changing role of natural gas in the transition to a net-zero energy system.

Oil Change International

As a COP26 host, it is crucial that the UK commits to a managed and just decline of oil and gas production in the North Sea with targeted support for affected workers and communities. Maximizing fossil fuel extraction under the Maximizing Economic Recovery (MER) policy is clearly incompatible with the goals of the Paris Agreement and, considering the recent collapse of oil prices and all-time volatility of oil markets, also with economic stability. The 2015 Infrastructure Act with the objective of maximizing economic recovery and the role of the Oil and Gas Authority in this therefore deserves attention from the BEIS Committee.

The IPCC Special Report on Global Warming of 1.5°C is clear: to have the best chance of limiting warming to 1.5°C, greenhouse gas emissions must decline rapidly, falling 45%

from 2010 levels by 2030, and reaching net zero by 2050. IPCC analysis shows that, in a pathway without CCS or BECCS, oil, gas, and coal peak by 2020, decline significantly by 2030, and are nearly phased out of the energy system by mid-century (see figure below).

Our own research (http://priceofoil.org/content/uploads/2016/09/OCI_the_skys_limit_2016_FINAL_2.pdf) shows that expanding fossil fuel production is incompatible with climate goals. The MER strategy is causing further extraction of fossil fuel reserves. When burned, this will increase emissions substantially (four times that saved by the Government's coal phase-out policy). Over the past few years the UK has managed to significantly reduce its coal-related emissions, but not its oil and gas-related emissions.

Our UK focused research (<http://priceofoil.org/content/uploads/2019/05/SeaChange-final-r3.pdf>) shows that if all countries were to follow the UK's approach of slashing coal emissions, whilst maximising oil and gas extraction, this would lead to a significant increase in global emissions relative to current emission levels.

Importantly, our research shows that:

- (1) The UK's 5.7 billion barrels of oil and gas in already-operating oil and gas fields will exceed the UK's share in relation to Paris climate goals—whereas industry and government aim to extract 20 billion barrels;
- (2) Recent subsidies for oil and gas extraction will add twice as much carbon to the atmosphere as the phase-out of coal power saves;
- (3) Given the right policies, job creation in clean energy industries will exceed affected oil and gas jobs more than threefold.

As a COP26 host, it is crucial that the UK commits to a managed and just decline of oil and gas production in the North Sea with targeted support for affected workers and communities. Maximising fossil fuel extraction via the MER is clearly incompatible with the goals of the Paris Agreement and, considering the recent collapse of oil prices and all-time volatility of oil markets, economic stability. The 2015 Infrastructure Act with the objective of maximizing economic recovery and the role of the Oil and Gas Authority in this therefore deserves attention from the BEIS Committee.

We recommend the UK and Scottish government to:

- Stop issuing licenses and permits for new oil and gas exploration and development, and revoke undeveloped licenses;
- Rapidly phase out all subsidies for oil and gas extraction, including tax breaks, and redirect them to fund a Just Transition;
- Enable rapid building of the clean energy industry through fiscal and policy support to at least the extent they have provided to the oil industry, including inward investment in affected regions and communities;
- Open formal consultations with trade unions to develop and implement a Just Transition strategy for oil-dependent regions and communities;
- Cancel any future planned onshore or offshore licensing rounds.

- Revoke all existing oil and gas licenses on which no work has yet been carried out and negotiate the cancellation of all other licenses which have not yet been developed;
- Conduct a review of how fast existing oil and gas extraction facilities need to be phased down in order to limit warming to 1.5°C, bearing in mind the UK's greater capacity to finance a Just Transition relative to other countries, and taking a precautionary approach to unproven “negative emissions” technologies;
- Publish a plan for a managed phaseout of UK fossil fuel extraction and Just Transition in line with the Paris goals.

And the UK parliament to:

- Pass legislation banning future licensing of all offshore fossil fuel exploration and development, and onshore exploration and development in England;
- Amend the Petroleum Act 1998 and the Infrastructure Act 2015 to remove the duty to “maximise economic recovery” and replace it with a duty to align fossil fuel extraction with the UK's fair share of delivering the Paris goals.

Global Witness

The 2015 Infrastructure Act places a duty on the Secretary of State at BEIS to produce one or more strategies for enabling the principal objective of “maximising the economic recovery (MER) of UK petroleum”. In practice, BEIS has devolved this obligation to the Oil and Gas Authority (OGA), the executive agency (now a government company with the Secretary of State the sole shareholder) established in 2015, following the 2014 Wood Review on the UK Continental Shelf (UKCS).

The OGA is explicit on its website about its MER obligations: that its role “is to regulate, influence and promote the UK oil and gas industry in order to maximise the economic recovery of the UK's oil and gas resources”.

While we appreciate the contribution that the UKCS, and domestic oil and gas production has made to the British economy, and to jobs, prosperity and communities, we believe that—in the light of the UK's ambitious domestic climate change targets and the fact that it will host COP26 in 2021—the BEIS Select Committee should investigate whether MER is consistent with UK climate policy and the goals of the Paris Climate Agreement.

The MER strategy is causing further extraction of fossil fuel reserves. When burned, this will increase emissions substantially (four times that saved by the Government's coal phase-out policy). Scientific evidence demonstrates that, to meet IPCC and Paris goals, as well as reducing fossil fuel consumption, governments should reduce oil and gas extraction; this is the principal message of the ground-breaking Production Gap report by UNEP and other leading research institutes (November 2019).

Our argument has been strengthened by important developments over the last 12 months. Revising the Climate Change Act for a net-zero 2050 goal, endorsed by all political parties,

was further evidence of UK climate policy ambition. The UK has consistently exhibited European and global climate change leadership—hosting COP26 confirms its intention to continue this leadership post-Brexit.

COP26 will be the most important gathering on climate change since Paris in 2015, because of the five-year ratchet mechanism for national emissions reductions targets (NDCs). It would therefore be ironic if the BEIS Secretary of State—recently appointed COP26 President—should adhere to maximising fossil fuel extraction and associated emissions via MER, when he is inviting the world to enhance emissions reductions targets in line with Paris and 1.5°C. The Government should commit to amend or introduce new legislation requiring it to recover a far lower proportion of remaining oil and gas assets, to restrict recovery to levels of alignment with 1.5°C. A principal action to achieve this would be a moratorium or ban on the annual issuing of licences to explore for new oil and gas fields, or further develop existing ones. The UK could also phase out fiscal support for oil and gas extraction, redirecting support to industries that will be essential to decarbonising the UK economy. These also offer far more growth potential than the oil and gas sector.

We appreciate the impact a phase-out could have on jobs, in an industry subject to intense market volatility. This is why the phase-out needs to be managed and just (as set out in the Paris Agreement). There would need to be a clear process for the participation in the design and implementation of a just transition by affected workers and their representatives, communities and local authorities. This should include a major scaling-up of education, retraining and re-skilling – this will help workers succeed in low or zero-carbon industries, which can be major contributors to a post-Coronavirus-crisis economic recovery.

Scottish Carbon Capture & Storage

The role of the Oil and Gas Authority (OGA). The OGA was established in 2015 to regulate, influence and promote the UK oil and gas sector. Its guiding principle is “maximising economy recovery” (MER).

However, the OGA is not just involved in fossil fuel production: it also licenses carbon dioxide (CO₂) storage in the geological subsurface. These are two very different sectors, albeit that they use many of the same skills, knowledge and areas of the subsurface.

The aim of carbon capture and storage (CCS) is to prevent CO₂ (e.g. from industrial plants) reaching the atmosphere and exacerbating climate change. It is possible to use CO₂ for enhanced oil recovery (CO₂-EOR), but this would need to be optimised for CO₂ storage to have an impact on reducing emissions.

There are a number of issues relating to the role of the OGA in an economy that is working towards net zero greenhouse gas emissions:

- A focus on MER could be in conflict with the need to phase out fossil fuel use.
- Optimising CO₂-EOR for CO₂ storage could be in conflict with the principle of MER.
- Although it has a remit to license CO₂ storage, the OGA has no formal remit to promote, encourage or enable CCS deployment.

It is clear that, in order to achieve the ambition of the Paris Agreement, the UK will need to reach net-zero greenhouse gas emissions by 2050. This step change in ambition from the 2008 Climate Change Act now implies that all areas of the economy will need to decarbonise as far as possible, with greenhouse gas removals needed to offset remaining emissions. Both parts of this will require CCS.

As part of this decarbonisation effort, use of fossil fuels will need to be phased out, and it is hard to see how a policy of MER would be consistent with this. The OGA has expressed an intention to be part of the net zero transition, but it is likely that the principle of MER would prevent it doing all that it could.

There is a huge amount of expertise, knowledge, data and infrastructure from the North Sea oil and gas industry, and in the OGA itself, that could be repurposed towards supporting decarbonisation through CCS and other means, but the question is whether the current role and purpose of the OGA would allow this.

The goal of MER is unlikely to be compatible with climate change targets. This is not to say that fossil fuels will not be necessary in the move to net zero, but business as usual cannot continue. One option would be to repurpose the OGA towards maximising decarbonisation—this would allow it to give equal weight to CO₂ storage as to oil and gas production, and to assess new proposals for oil and gas extraction against the potential for alternative uses of the seabed and subsurface.

An alternative to this, if maximising recovery is considered to still be an important ambition would be to reword the purpose as “maximising sustainable recovery”: this would then place oil and gas recovery in the context of the sustainable development goals, and allow a more holistic approach to oil and gas activity.

It may be that in addition to repurposing the OGA, it would make sense to create a new body to oversee and facilitate the deployment of CCS, both onshore and offshore, including taking on the relevant regulatory functions.

Platform

The 2015 Infrastructure Act places a duty on the Secretary of State at BEIS to produce one or more strategies for enabling the principal objective of “maximising the economic recovery (MER) of UK petroleum”. In practice, BEIS has devolved this obligation to the Oil and Gas Authority (OGA), the executive agency (now a government company with the Secretary of State the sole shareholder) established in 2015, following the 2014 Wood Review on the UK Continental Shelf (UKCS).

The OGA is explicit on its website about its MER obligations: that its role “is to regulate, influence and promote the UK oil and gas industry in order to maximise the economic recovery of the UK’s oil and gas resources”.

We believe that – in the light of the imminent threat of climate change, the UK’s ambitious domestic climate change targets and the fact that it will host COP26 in 2021 – the BEIS Select Committee should investigate whether MER is consistent with UK climate policy and the goals of the Paris Climate Agreement.

The MER strategy is causing further extraction of fossil fuel reserves. When burned, this will increase emissions substantially (four times that saved by the Government's coal phase-out policy). Scientific evidence demonstrates that, to meet IPCC and Paris goals, as well as reducing fossil fuel consumption, governments should reduce oil and gas extraction; this is the principal message of the ground-breaking Production Gap report by UNEP and other leading research institutes (November 2019).

Our argument has been strengthened by important developments over the last 12 months. Revising the Climate Change Act for a net-zero 2050 goal, endorsed by all political parties, was further evidence of UK climate policy ambition. The UK has consistently exhibited European and global climate change leadership—hosting COP26 confirms its intention to continue this leadership post-Brexit.

COP26 will be the most important gathering on climate change since Paris in 2015, because of the five-year ratchet mechanism for national emissions reductions targets (NDCs). It would therefore be ironic if the BEIS Secretary of State—recently appointed COP26 President—should adhere to maximising fossil fuel extraction and associated emissions via MER, when he is inviting the world to enhance emissions reductions targets in line with Paris and 1.5°C. The Government should commit to amend or introduce new legislation requiring it to recover a far lower proportion of remaining oil and gas assets, to restrict recovery to levels of alignment with 1.5°C. A principal action to achieve this would be a moratorium or ban on the annual issuing of licences to explore for new oil and gas fields, or further develop existing ones. The UK could also phase out fiscal support for oil and gas extraction, redirecting support to industries that will be essential to decarbonising the UK economy. These also offer far more growth potential than the oil and gas sector.

We appreciate the impact a phase-out could have on jobs, in an industry subject to intense market volatility. But this volatility is part of the reason a phase-out is required. The phase-out needs to be managed and just (as set out in the Paris Agreement). There would need to be a clear process for the participation in the design and implementation of a just transition by affected workers and their representatives, communities and local authorities. This should include a major scaling-up of education, retraining and re-skilling – with input from workers on the content of training offered, community investment and the option of job-guarantee programmes post-Coronavirus-crisis explored.

N Hargreaves

Community energy (CE) flourished and made a positive impact on clean energy, local resilience, social capital and clean air when it was supported through various schemes which have all but disappeared in the last 5 years. CE is recognised as an important element of public engagement in the clean energy transition but has suffered dramatically since support was removed and subsequent policy neglect.

How can policy in this area be improved?

- (1) Re-introduce financial guarantees that remove or decrease the risk of starting-up community energy projects. The SEG is inadequate for this purpose, as is RCEF on its own.

- (2) Mandate community energy organisation engagement in local and regional planning as well as new housing and industrial developments, so that collaborative community energy schemes can be given the opportunity to flourish.
- (3) Mandate community engagement in new on and off-shore energy generation or storage initiatives by the private sector—as is found in countries like Denmark where communities become shareholders in these initiatives.
- (4) Remove the legal barriers to roof-top solar such that local authorities have powers to enable community energy organisations to install rooftop solar arrays even on tenanted premises to supplement the supply to the building.
- (5) Remove the business rate penalty for installing clean energy generation technology (such as rooftop PV) incumbent currently upon building owners and tenants.
- (6) Facilitate better rates than afforded under the SEG to pay community energy organisations for surplus energy exported to the electricity grid.
- (7) Reverse the regulatory penalty to small generators, recently introduced under the Targeted Charging Review by Ofgem.
- (8) Limit Ofgem’s remit to seeking only to regulate pricing for electricity and gas and establish a separate body that champions the role in the clean energy transition of community organisations working on energy generation, conservation, efficiency and clean transport.
- (9) Accelerate the introduction of local energy markets and peer-to-peer trading as a supplement to existing market frameworks. This might involve the mandatory engagement of energy suppliers to act as clearing houses for small scale energy producers.
- (10) Mandate network operators to facilitate community energy connections in areas of network constraint as a substitute for network reinforcement—providing financial assistance where required.

Community Energy England

Community energy is people acting together locally to create replicable climate solutions—building and owning renewable generation, tackling fuel-poverty, energy education... As a motivated, knowledgeable and trusted intermediary, community energy is essential to advocating for and delivering the energy transition.

“The future of energy is local” Chris Skidmore/Claire Perry. “Community energy is a key cornerstone of the Government’s transition to a smart, low-carbon energy system” Claire Perry.

Yet for the last 5 years, community energy has suffered policy setbacks that leave it frustrated and stalled. These include removing the Feed-in Tariff, Export Tariff, Urban Community Energy Fund and Tax Relief, punitive business rates on roof-top solar, planning constraints on on-shore wind and increasing VAT on solar panels, batteries and ‘energy saving measures’ from 5% to 20%.

Community energy can be a huge powerhouse of the energy transition but only if supported to get active.

Key issues include the lack of:

- formal recognition of the importance of people and community energy in policy.
- strategy to involve the public in the urgent net-zero transition.
- any practical or financial support for community energy despite supportive words from ministers
- progress on ‘Local Area Energy Planning.’
- central support or coordination for local Climate Emergency Planning.

The future of energy is zero-carbon, flexible, smart and local. People and community energy must be at the heart of energy policy and climate emergency planning. The Committee on Climate Change says the net-zero transition cannot happen without the consent and participation of the public, that 62% of necessary measures are dependent on behaviour change and that the Government currently has no strategy of engagement.

Community energy is key to this engagement, harnessing the passion, knowledge, skills and capital in the community to create replicable local climate solutions and ensure that no-one is left behind. Community energy delivers 12–13 times the community benefit of commercial installations.

However, this potential powerhouse for transformation needs some minimal support. Since the Community Energy Strategy 2014, which envisioned one million homes powered by community energy in 2020, we have experienced little but policy setbacks (outlined above). The consequence is less than 10% of that potential realised and a highly motivated and well-connected resource is going to waste at a crucial time.

How could policy in this area be improved?

- Prominent statements in the Energy White Paper and Net-Zero Plan that People and community energy are central to energy policy and the net-zero transition.
- Community energy supported by a new Community Energy Strategy, a community energy team at BEIS and a good cross-departmental working group receiving input from the sector itself. Support knowledge sharing e.g. via the Community Energy Hub.
- Government, together with Ofgem, the energy networks and community energy should identify and fully resource an approach to ‘Local Area Energy Planning’ that sets out a core role for community energy groups and informs national policy.
- Reinstate Social Investment Tax Relief (SITR) for community energy.
- Create a new Urban Community Energy Fund to complement the Rural Community Energy Fund.

- Create a new grant programme to bring Local Authorities and community energy together to do projects (as part of Public Sector Decarbonisation Roadmap).
- Ofgem to have decarbonisation and social benefit in their official mandate.

***T Braunholtz-Speight, Tyndall Centre for Climate Change Research,
Department of Mechanical Aerospace and Civil Engineering, Faculty of
Science and Engineering, University of Manchester***

Energy systems are changing, with the ‘three Ds’ of decarbonisation, decentralisation, and digitisation characterising the transition. Developments such as the rise of distributed renewable electricity generation, smart local electricity grids, and new technologies for electrifying transport and heat promise a future where energy ‘consumers’—or simply ‘people’ or ‘citizens’ – are centre stage.

Community energy initiatives suggest that a fourth D, democratisation, should be part of this future. Currently mostly associated with supplying small-to-medium scale renewable electricity generation, many community energy organisations are eager to embrace the possibilities that new technologies and structures offer to work more on the demand side of energy. This could mean running local energy companies that supply households—potentially offering better tariffs to more vulnerable consumers, and that aggregate domestic demand and flexibility—helping everyone get the most out of the smart grid.

However, this vision of the future of community energy will not emerge from technological change alone: market and system structure and regulation will be critical. While devolved and local authorities have some scope to take the initiative, central government decision-making will shape the future of some key areas. Among these are the regulation of smart grids and local energy markets.

The policies and structures that will govern the future energy technologies have not yet been set. But with technology developing rapidly, and flexibility and other markets emerging in the UK (and elsewhere), important policy steps will need to be taken soon.

Smart grid technologies are currently emerging in an energy system that is still, despite liberalisation and market reform, relatively centralised and dominated by large actors. Rather than a decentralised people-centred energy future, there is the risk of new infrastructure monopolies emerging in the fields of smart grids and energy data.

The UK community energy sector, in contrast, is composed of hundreds of organisations owned by local residents or cooperative members. Local engagement, and long-term commitment to place, is at their core. Their ‘on-the-ground’ presence and face-to-face engagement could be invaluable in helping those who might otherwise struggle to manage digitisation and smart energy contracts, and therefore may not easily be reached by online and call centre-based support services. Our previous research shows that community projects are able to raise cheap citizen finance, particularly from local investors. This suggests that local energy can tap into trust and people’s appetite for achieving social and environmental goals.

Policy and regulation of the energy transition could ensure space for smaller actors. This requires a mix of regulatory change to encourage local electricity supply and energy markets and acting to ensure regulation and technical standards keep energy data systems accessible, perhaps by using open-source software.

Concerning local energy markets and supply, current regulations place a heavy burden on smaller would-be suppliers, and locality or region-specific supply is not permitted. Community energy companies are thus effectively unable to enter the market, limiting their ability to e.g. address fuel poverty through better tariffs for vulnerable customers. However, in other OECD countries, different regulations mean smaller and local energy suppliers are well-established. Inquiry into this international experience could help the Committee understand how local energy markets may improve the diversity and customer offer of the UK sector.

Concerning smart energy regulation, the Committee could inquire into how local energy markets can be designed to improve accessibility to new entrants/smaller actors; and fair inclusion/protection of consumers. Particular topics could include flexibility markets/ decentralised energy trading; regulation and standards for data systems and management; and the impact of democratic governance on consumer engagement and fairness.

Prof K Chalvatzis, University of East Anglia (UEA)

The Committee should evaluate ease of access to the national grid and consider the merit of improved access to the national grid for smaller and start-up suppliers to facilitate greater investment in the renewable energy sector.

My research shows that improving supplier access to the national grid is clearly one of a portfolio of policy tools that can more effectively facilitate investments in the renewable energy sector, although a ‘one size fits all’ approach does not work in encouraging innovation in renewable energy. This is an objective in line with the Committee’s own recommendations in its 2018 Green Finance report. Compared to other OECD countries, the UK is able to make more progress on this. To deliver the UK’s renewable energy commitments, the Committee should explore opportunities for public policy to better support investment in and growth of renewable community energy suppliers. Within this context, community energy can be operationalised by commercial suppliers who and introduce an active role for community stakeholders. International success stories can be used to draw lessons on community energy schemes.

The UK’s Integrated National Energy and Climate Plan commits the UK to being “a lead actor in the transformation of energy markets. developing liberalised markets and embracing the opportunity to increase renewable generation, decarbonise the economy and maintain affordability.” In particular, the Plan aims to “move towards a more dynamic market, empowering the consumer and realising the potential of renewables [and] small scale generation.” However, many innovative and renewable suppliers face barriers to entry, which hamper the supply of renewable energy to consumers and restricts investment in renewable energy, investment which is essential to the UK’s aim to achieve net zero emissions.

Beyond community-run energy schemes, the role of the community in energy supply can be enhanced by policies that remove barriers for consumer engagement in the energy

market. Enabling widespread digitalisation of the energy supply and consumption and the emergence of individual prosumers can be a first key step in mass adoption of community energy platforms. Thereby prosumers become members of schemes where they commit their energy resources (production, storage, flexibility) to schemes that can commercialise them.

Dr C Wilson, University of East Anglia (UEA)

The Committee should examine the relative merits of large-scale energy projects, versus smaller scale but broadly used localised solutions to advance decarbonisation. When seeking to achieve net zero, finding alternatives to how energy is consumed at home (i.e. using smart technology) can often be more beneficial, and result in quicker change, than large and expensive projects. I believe an investigation into how the potential use of smaller-scale and household-size green changes impact on achieving net zero, and how there are benefits to encouraging the utilisation of a portfolio of small scale technologies (e.g. E-bikes, smart meters, solar panels), to result in large overall change. Favouring smaller scale initiatives should be a criterion for designing public policy and targeting public R&D funding to reduce carbon emissions.

I would encourage the Committee to examine the future of UK energy supply, as there are many issues around storage, creation and trading that remain unaddressed, in particular examining the drivers of take-up of emission lowering schemes which contribute to a general reduction in emissions.

In June 2019, Parliament legislated a target for a net zero greenhouse gas emissions target by 2050. As part of the UK's efforts to reduce carbon emissions, the Government's Clean Growth Strategy has pledged to foster greater competition, coordination and innovation across the energy sector. Ofgem has stated that achieving "net zero will require a huge increase in renewable and low carbon electricity. build[ing] an energy system that is as efficient as possible." Recent government-backed projects to advance decarbonisation have tended to favour large-scale, high-profile initiatives.

Achieving net zero will not be possible without a radical change in the creation and usage of energy across the UK. While there has been a tendency to look for big, catch-all solutions, it is often the smaller changes that, when adopted widely, can have the fastest and biggest impact. The Committee will have the opportunity to shine a light on this phenomenon and make a real impact on achieving net zero via its findings. Changing the emphasis of public policy and funding to support more granular decarbonisation projects is both economically and socially rational, aligning with broader public policy goal.

For public policy, a greater number of smaller scale decarbonisation projects is more favourable to focusing a smaller number of large, high profile projects which tend to be more politically attractive. Research shows that small scale, more granular projects can be completed more rapidly, accelerating generation of renewable energy or decreasing energy consumption. Additionally, they usually have a lower capital over-run cost, posing a lower risk investment which improves capital flow and advance the 'green finance' agenda. A greater number of smaller projects can also be geographically dispersed, spreading associated new jobs across the country and supporting the Government's "levelling up" agenda—creating a higher total number of new jobs whilst being more economically

efficient. Favouring smaller scale initiatives should be a priority for designing public policy and targeting public R&D funding to reduce carbon emissions: granularity should therefore be a criterion for policy design and public funding.

Such smaller scale projects go beyond simply energy generation. Possible policy recommendations would be to allow innovation in this area, particularly with regard to new technologies, and allowing market disruptors to demonstrate the value of their products. For example, by integrating all transport networks through a single payment app to reduce the number of car journeys.

Power to Change

Community energy forms a key part of achieving net zero emissions by 2050. This is a core issue within the Industrial Strategy as part of the Industrial Decarbonisation challenge. It also forms part of a necessary global effort to improve economic sustainability (see, for example, the Sustainable Development Goals). Additionally, not only do community energy schemes allow communities to own a revenue-generating asset, they provide many positive spill overs including tackling fuel poverty.

BEIS ministers have stated that “community energy (is) a key cornerstone of government’s ambition for transition to a low-carbon, smart energy system”. However, the UK lags behind comparable economies, such as Germany, where citizens’ energy ownership stands at 42 percent of total installed renewable energy capacity.

Recent statements from BEIS ministers have not been matched by policy support from the Department.

Government needs to provide a framework for ensuring local and regional action is consistent and commensurate with national plans and targets to meet very ambitious and difficult decarbonisation targets. With policy support, community energy can play a role in achieving these.

We urge the Committee to examine the discrepancy between the Government’s ambition to grow the community energy sector and policy from the Department in recent years.

Community owned assets generate income for communities and build resilience. To date during the Covid pandemic, six community-run solar farms advanced £195,000 for their parishes, exclusively for community use during the crisis.

Furthermore, the Committee has not yet examined this issue as a standalone topic to date although it fits well with previous inquiries such as the energy efficiency inquiry. It also aligns with your use of citizens’ assemblies and increased calls for democratic engagement in solutions to climate change. It will also complement your ongoing inquiry into Net zero and UN climate summits.

Thirdly, in the face of public protest around climate change and increasing division within society on energy infrastructure and policy, community energy is an exemplar in delivering climate co-benefits that can bring communities together.

Fourthly, community ownership models increase local acceptance of infrastructure because such assets support the delivery of valued local services, build community wealth, support bottom-up regeneration, and give local people a greater sense of control of the things that matter to them.

So, at this time, we invite the Committee to review the success of these corporate models in mobilising community action and the opportunities for greater legislative alignment.

The current community energy sector supplies enough electricity for 64,000 homes. The 2014 Community Energy Strategy had envisaged present equivalence of 1 million homes. We invite the Committee to examine why less than a tenth of anticipated growth has been realised.

Since the last community energy strategy from government in 2014, our trajectory towards climate crisis has increased. Therefore, that strategy needs to be revisited and refreshed for the challenges of the 2020s. Government should also create a new Urban Community Energy Fund to complement the Rural Community Energy Fund.

Recently, community energy has not seen support from the Department. The retraction of helpful policy initiatives such as Feed-in Tariffs (FiTs) and Export Tariffs removed the business case for many energy generation projects and only 72% of community energy organisations stated they planned to continue with their energy activities after their removal. The lack of a renewed Urban Community Energy Fund and the ineligibility for Social Investment Tax Relief have also jeopardised future projects.

However, a recent positive change has been allowing onshore wind and solar to compete for Contracts for Difference and moves to ensuring communities have an “effective voice” on energy infrastructure which could be developed further.

BEAMA

The UK has ambitious plans to de-carbonise the energy system by 2050. BEAMA fully supports this ambition – but the UK can only achieve this aim if we transform our ageing electricity transmission and distribution infrastructure into a smart, low carbon and flexible electricity system. However, the current regulatory framework, the intricacies of RIIO-2 (the next round of network price controls designed by Ofgem) and lack of more enhanced and detailed supply chain planning and support do not facilitate what is needed for the energy transformation.

We have seen huge successes for the offshore wind sector driving investment into the UK, underpinned by an effective sector strategy resulting in dramatic reductions in cost per kWh for offshore wind. Likewise, we see significant innovation and investment proposals for the EV charging infrastructure. The challenge is to bring these principles to bear on the electricity transmission and distribution system, a key enabler for meeting net-zero. This sector will require a huge injection of investment in the UK and, similarly to the offshore wind sector, this must be driven by a clear sector strategy with the supply chain a key participant.

It will not be possible for the UK to deliver net zero by 2050 if a robust supply chain strategy for energy networks is not put in place. This was clearly highlighted by the recent Imperial College modelling for the Committee on Climate Change Net-Zero report which showed the scale of investment that is needed.

Imperial College places the range of distribution network investment alone at between £1.83 and £5.88 billion a year by 2050 to facilitate the decarbonisation of heat. Even at its lowest estimate this is a huge requirement for network investment and minimising this is justification alone for a more robust supply chain strategy that aids UK manufacturers to tool up for the anticipated investment. These figures only consider the cost implications of heat and, when you factor in the addition of electrification of transport and transition costs as well, the need for investment planning is apparent. This level of investment is not achievable under the existing regulatory landscape.

We are about to enter into a new Price Control under RIIO (RIIO2). It is our understanding that this will represent a significant moment of opportunity in terms of the actions necessary to meet net-zero.

A Select Committee inquiry could play an important role in improving Government policy by determining the best regulatory and market framework to encourage innovation and cost reductions as the network is rebuilt. This would give the UK supply chain the confidence to invest, making sure we have the products, capacity and skills needed during the energy system transition. This could be the difference to the UK achieving its net-zero 2050 target or failing to meet it.

BEAMA has been running a campaign recently, speaking to MPs, Ministers and Government officials to explain this issue. The barrier we come up against is 'this is the responsibility of Ofgem, not Government'. We would argue differently. Government has taken responsibility for decarbonising the energy system and it is our view that the existing regulatory framework, despite Ofgem's best efforts and recent net-zero action plan, is not facilitating this. In many cases the framework is hindering effective private sector investment in the UK for skilled jobs and markets associated with the low carbon energy transition. We believe the only way to facilitate change is through Government improving existing policy to create a sector strategy for energy networks.

Enertechnos

A key objective of the new pricing mechanism must be that it ensures that grid capacity is increased to accommodate growing energy demand. The present price controls are not focused in this direction. The Committee should consider the effectiveness of the approach taken by government, Ofgem and industry to ensure measures are in place to deliver enough power to where the consumer needs it across the UK's energy network as we transition to a net zero economy. In particular, the Committee must examine whether networks are being encouraged to invest in line with government's decarbonisation commitments. At present there appears to be a greater fear of the risk of 'stranded assets' than there is of the grid's inability to deliver the energy required for a decarbonising economy.

RIIO-ED2 is an excellent opportunity to ensure network operators are adequately equipped and playing their role in delivering enough power across their networks to

support the Government's legally binding decarbonisation commitments. Electrification of heat and transport, for example, will place huge demands on electricity networks and failure to prepare for this could see networks unable to deliver power to where it is needed. Now more than ever it is crucial the UK develops a regulatory framework which supports operators to invest in their networks in line with government commitments.

At present, the network isn't properly equipped to deal with the extra demand that will come with decarbonisation. Networks will need to invest ahead of demand to ensure the capacity needed to reach net zero is available. One issue undermining the decarbonisation effort is electricity losses. In 2018, power lost in the transmission and distribution system totalled an enormous 26,663 GWh. In real terms, this represents enough energy to power almost seven million typical UK homes or charge 6.5 million electric cars for a year and makes up 1.5% of the UK's carbon emissions. This is an enormous amount of energy which is generated but not delivered. Some losses (notably because of electrical resistance) are inevitable. There are other losses that can be mitigated.

In order to deliver a resilient, environmentally sustainable network and enable the transition to a smart, flexible, low cost and low carbon energy system, the UK's cable infrastructure must be made fit for the needs of the 21st century. Any such approach must include addressing losses. As more and more power is demanded from the network, losses using conventional cable systems will increase. There needs to be a focus on implementing innovative solutions that avoid the increases in losses. By doing this, we will stop unnecessarily wasting energy – cutting our carbon emissions and ensuring more power is available to service rising demand.

To reach the 2050 net zero target and deliver the positive outcomes government is determined to achieve, the UK needs fundamentally to change its approach on how it delivers power across the network. At present, its approach to regulating the future of the network risks undermining these efforts.

If we are to make net zero a reality, Ofgem must prioritise its approach to losses and enable distribution network operators (DNOs) to invest in their networks to the benefit of consumers of tomorrow as well as today, in line with government's ambitious decarbonisation targets. Under the current price control, investment frameworks are too focused on short-term, immediate costs rather than the long-term environmental impact of the infrastructure installed and its ability to support increased demand. At present there appears to be a greater fear of the risk of 'stranded assets' than there is of the grid's inability to deliver the energy required for a decarbonising economy. The next set of price controls should ensure networks accurately monitor and record losses and incentivise DNOs to reduce them through investment in loss-reducing technologies. Furthermore, changes to cost benefit analysis should be made so the benefit of reducing losses can be factored into networks' investment decisions to ensure that the technology installed enables more power to be delivered where needed.

We believe there is a valuable opportunity for the Committee to analyse the ongoing RIIO-ED2 price control process to hold government and Ofgem to account, thereby ensuring that our energy system is adequately equipped for the transition to net zero.

S A Swan

In view of dramatic changes since the Government's NPS 'current energy policies' published in 2011 (but still used to justify present strategies) a thorough review & update is now urgently needed to take account of current data.

Data informing current energy strategies is very out of date. The now better understood effects of climate change, developments in energy use & demand management, renewable electricity generation & storage capabilities, realistic costings of different options & safety issues, etc are long overdue to be used to inform proper energy strategies for our future.

Energy policy should follow the best & most current information available. Government policy on energy is based on seriously out-dated information.

R Pumfrey

The BEIS (and therefore Governmental) national strategy for electricity generation.

The strategy is out of date and takes little account of recent rapid changes in methods of generating electricity in a manner that is both cost-effective and less likely to contribute to global warming.

BEIS should be investigating with an open mind and advising Government to urgently reconsider whether new nuclear-powered generation has any place in the future electricity generation mix. Any claims that nuclear has a place in future generation ignore the excessive cost of nuclear electricity, the time taken from initiation to completion of construction and the risk that the new reactors simply won't work. Whilst coal is 'history' and gas cannot be far behind, the 'pump priming' financial encouragement that wave and tidal powered generation and other innovative strategies require is not being provided. The push for electric vehicles will be both futile and a contributor to greater emissions unless the electricity that fuels them is truly renewable. A new national strategy that brings the UK up to date and offers some hope to future generations that the worst effects of global warming can be prevented is urgently required.

Prof. L Sansom, Cranfield University

The intermittent nature of renewable energy (wind/solar PV especially) requires energy storage to match supply to demand. At large scale, battery technology is not going to provide GWh of storage. This issue has to be faced up to if UK Government is to meet its carbon reduction targets.

UK Government cannot meet its carbon reduction targets unless renewable power is dispatchable i.e. supply matches the demand. This requires a new approach to large energy storage. This can utilise old fossil fuel power stations, providing them with a new lease of life and regenerating those communities.

The Government needs to utilise existing molten salt heat storage from CSP plants in hot countries, where GWh heat storage is relatively simple. Heat pump technology or electrical heating converts the electricity to heat. This can happen in old fossil fuel power stations, which already have the steam generators and turbines to convert the heat back to electricity.

Nuclear Industry Association

Nuclear provides safe, low carbon, non-weather dependent, constantly available electricity which can support a decarbonised electricity mix in the UK, alongside the expansion of intermittent and variable low carbon sources, such as wind and solar. With the technologies available, it is not possible to achieve net zero by 2050.

The Committee on Climate Change states that “power sector decarbonisation does not rely on variable renewables alone, but a portfolio of technologies including nuclear power”, and that 38% of our electricity should come from ‘firm’ low carbon sources. Nuclear has also been supported by multiple other reputable institutions, including the Government’s Energy Systems Catapult (2020), OECD, IEA (2019), EIB (2019), IPCC (2018), MIT (2018).

However, for nuclear to play this essential role in a future energy mix we need to replace the current fleet—most of which are set to go offline over the next decade. The electricity gap caused by outages from the nuclear sector will be significant and will negatively impact the UK Government’s plans to reach net zero.

Change is happening but not fast enough, and the lack of Government plans on the whole for nuclear and the wider energy sector are delaying the transition further. We therefore ask the Business, Energy & Industrial Strategy Committee to investigate how we can get the UK electricity market to net zero.

Last year, National Grid announced that for the first time, low-carbon technologies had produced more electricity than fossil fuels. This is a huge milestone in the journey to net zero, but there is still more to be done. In the Government’s 2019 Digest of UK Energy Statistics, however, fossil fuels remained the dominant source of energy for the year, despite renewables reaching a record high of 33%. Growth in low-carbon technologies overall however was stalled—totalling 54% but barely moving from the year before.

For nuclear—the only commercially-viable and low-carbon firm source of power that can replace fossil fuels—generation dropped by 7% due to the expected closures of Dungeness B and Hunterston B. Still, nuclear provides over a third of the UK’s clean electricity but with more outages expected, and only one new reactor built by 2030, this is set to leave a significant electricity gap that will leave the net zero mission much harder to achieve.

The above is true for the UK’s electricity consumption today. The issue becomes more concerning when we consider that electricity demand is set to double, not only as a result of higher energy usage by consumers in a larger population, but through electric vehicles and heating. This will require quadrupling of clean energy capacity.

The UK should be working to support growth in all low-carbon technologies as part of the balanced energy mix essential to meeting net zero.

Paramount to the development of a full low-carbon, clean energy system is an understanding on the Government’s outlook and plans to get the UK net zero. The release of the Energy White Paper and National Infrastructure Strategy are vital to this understanding and should be released as soon as possible.

Stop Sizewell C

We request the Committee to reassess the UK's short, medium and longer-range energy forecasts, reviewing the assumptions on which current government policy—in the absence of a White Paper—is based, in light of changes Covid has had on business and on domestic lifestyles, plus rapid technological advances and public support for building back better.

As the UK emerges from lockdown (recognising that restrictions could be re-imposed) there is growing public support for a renewed and more radical push to tackle climate change and ditch outdated, troubled and expensive technology like “big” nuclear. Although energy consumption is assumed to grow with the transition to electric vehicles, real consumption has dropped in recent years and some beneficial Covid-imposed lifestyle changes could—if encouraged—contribute to reducing consumption longer-term.

The impact of Covid on the economy and government spending means that value for money assessments of energy infrastructure will be even more critical in a post Brexit world. Other critical themes include flexibility and sovereign energy security; the latter much discussed at present regarding China's role (as France's partner).

A comprehensive look at the options available when viewed through the post-covid lens could lead to significant changes in UK energy strategy.

It is urgent and topical. Government strategy papers on Energy and National Infrastructure have been delayed by Covid, offering an opportunity to broaden the policy debate. There is greater public support for changing a “business as usual” approach. The question of sovereign energy security and in particular China's role (and to some extent France's) in Britain's nuclear infrastructure has become deeply controversial.

Covid's financial impact makes value for money and impact on consumers more critical. Some energy sources are able to be commercially developed and are rapidly falling in price. Conventional nuclear is failing the commercial development test and is requesting a new funding model, the Regulated Asset Base transferring cost and risk to the UK consumer and taxpayer. Despite four European based reactors in development, EDF could not say how much it will cost, but admitted 30% of spend 50% of ownership could be overseas. This cannot be good for the UK economy.

As electrification grows, Covid-enforced lifestyle changes that “stick” could affect the volume and pattern of energy consumption, helped by increased energy efficiency, smart charging and enhanced grid flexibility. Rapid technological advancements offer new opportunities to address climate change with reduced risk.

A fresh and credible post-Covid reassessment of the assumptions on which current energy policy is based could lead to significant changes to government's existing energy strategy, including:

- Proposals that incentivise people and companies to continue working from home and walking/cycling more would reduce stress on the transport network and the need to spend significant sums on improving road infrastructure. E.g. Lord Deben recently suggested diverting Budget funds for roads to broadband.

- Move the Government away from approval of the Regulated Asset Base for new nuclear as too risky, too expensive and too slow to deliver climate change objectives and imposing a tax on consumers. Like Hinkley C we contend Sizewell C will not offer value for money.
- A better fit and greater coordination between Nationally Significant Infrastructure Projects and the Environment Bill/DEFRA's 25-year plan by establishing the right locations for infrastructure.
- Greater levelling up of the country focusing on areas where unemployment is higher, and skills exist.
- Addressing the doubts of the National Infrastructure Commission which in March said, "Policy decisions that lock the UK consumer into paying for large scale programmes with long construction times risk missing opportunities that may emerge". <https://www.nic.org.uk/news/new-technologies-could-offer-cheapest-route-to-a-net-zero-electricity-system/>

PCAH (Parents Concerned About Hinkley)

NUCLEAR POWER URGENT ACTION LIST APRIL 2020

- NHS to train staff to practise integrated medicine currently only available to private patients at The Dove Clinic for Integrated Medicine. NICE to reverse their rejection of the Russian scheme for integrated medicine using the Oberon Device. See Dove Clinic website.
- Halt current plans to demolish Magnox reactors. Shutter all defueled Magnox reactors for at least 30 years in care and maintenance, following Bradwell lead site. France is now shuttering its decommissioned Magnox reactors.
- Rule out any new nuclear build including Hinkley C.
- Shut down all the UK operational AGR reactors to prevent core meltdown due to progressive age-related structural degradation. Revoke Site License extension. Defuel and shutter all the UK AGR reactors. Do not restart Hunterston, or Dungeness.
- RIFE 16 recorded a tenfold increase in Caesium 137 in Somerset. Spreadsheet data deleted from RIFE 16 in January 2020. Caesium 137 embeds in human muscle with an affinity for the heart muscle. It causes heart attacks, strokes, brain tumours and sudden premature deaths. Coroners must refer victims to the Francis Crick Institute to test for Caesium 137.
- ONR to commission routine use of the AARM drone mounted nuclear radiation air pollution monitor developed and tested by Bristol University.
- Enforce the 2012 Health and Social Care Act requirement to protect the public from exposure to nuclear radiation.

- Enforce Public Health England policy of screening Somerset residents for radionuclides listed on the US Environmental Protection Agency paper (www.epa.gov/radiation/radionuclides). PHE are based at Harwell. (Dr Sarah Harrison is SW PHE lead based in Bristol.)
- Enclose all cooling and storage ponds and refill with water. Enforce a zero emissions policy on all decommissioning and waste contracts.
- Immobilise Sellafield plutonium stockpile for near surface storage.
- Rule out a UK Geological Disposal Facility.
- Enforce the 2012 Health and Social Care Act specific requirement to protect the public from exposure to nuclear radiation. Enforce a zero emissions policy on all decommissioning and waste contracts.
- Reverse decision to open up Hinkley A Intermediate Level Waste Vaults.
- Test Somerset milk for Tritium and Strontium 90 which displaces calcium, causing tooth decay and loss through all ages.
- Rule out on site reprocessing and on-site storage.
- Rule out any Hinkley Point co-location storage of nuclear waste from any other site including waste from nuclear submarines and Sellafield radioactive skips.

Actions to be carried out by:

- BEIS
- Public Health England
- NHS England
- NDA (Nuclear Decommissioning Agency)
- ONR (Office for Nuclear Regulation)
- OND (Office for Nuclear Development)
- EA (Environment Agency) FSA (Food Standards Agency)

To prevent imminent core meltdown at all operational UK AGR nuclear reactors due to age related progressive structural degradation including cracked graphite bricks.

Comply with the 2012 Health and Social Care Act requirement to protect the public from exposure to nuclear radiation sea, land and air pollution.

Nuclear Industry Association

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The Committee on Climate Change states that “power sector decarbonisation does not rely on variable renewables alone, but a portfolio of technologies including nuclear power”, and that 38% of our electricity should come from ‘firm’ low carbon sources. Nuclear has also been supported by multiple other reputable institutions, including the Government’s Energy Systems Catapult (2020), OECD, IEA (2019), EIB (2019), IPCC (2018), MIT (2018).

However, for nuclear to play this essential role in a future energy mix we need to replace the current fleet – most of which are set to go offline over the next decade. The current mechanisms to support the financing of new large-scale nuclear projects are not suitable so new policies and mechanisms need to be put in place for the nuclear industry to flourish in the transition to net zero. This is also not an issue that is exclusive to the nuclear industry, which is why the NIA is asking that the Business, Energy & Industrial Strategy Committee investigate financing large-scale infrastructure in the energy sector.

By 2030, all but one of the UK’s nuclear power plants will have retired and the current Contract for Difference (CfD) model has only delivered one new nuclear project, Hinkley Point C. Thirteen coal and oil, and 32 gas powered stations will also close by 2035. To reach net zero, we need to replace this significant capacity gap with clean sources of electricity.

This future electricity supply must consist of a mix of technologies which can collectively provide a clean, stable and cost-optimal source of electricity, but the scale of energy infrastructure we currently have currently and in progress is not enough to reach net zero. Many of the issues with building large-scale energy infrastructure link to the difficulty in financing such projects.

As we have seen over the past few years, the CfD model has major limitations as a financing method for new nuclear projects, as evidenced by Horizon Nuclear Power suspending its nuclear development programme after years of significant investment and progress in its new nuclear projects and Wylfa and Oldbury.

With 2050 only 30 years away, and the majority of large energy infrastructure taking years to plan and build, the solution to financing these projects needs to be investigated immediately so that the nuclear industry and the wider energy sector can continue to work to reduce carbon emissions in the UK to zero.

To enable the investment required for large-scale electricity infrastructure, there is an urgent need for the introduction of a new, robust financing mechanism which ensures investor confidence, reduces the cost of capital, and provides very significant value to the consumer. The timing of the implementation of such a financing model is critical in ensuring the stability of the UK nuclear supply chain and workforce, and in delivering value for money to the national economy.

The business case for the Sizewell C project, for example, is dependent on the transfer of operations in a timely fashion from Hinkley Point C. The Horizon site Wylfa Newydd, which was suspended in January 2019, also depends on a more favourable financial model than the CfD arrangements if it is to restart, for which it has retained capacity.

The successful continuation of such projects depends on the willingness of Government to facilitate a new financing arrangement. Maintaining nuclear supply chain confidence and stability is also essential for the future of a UK fleet.

The Government recently consulted on the suitability of a Regulated Asset Base (RAB) model, which closed in October 2019, and the nuclear industry is awaiting a response.

R Fulcher

Energy policy needs to be looked into urgently with regard to nuclear power generation. We responded to a consultation last year and an updated version of EN6 was supposed to be made public last autumn, but no one has seen it.

Both EN1 and EN6 are now seriously out of date with regard to nuclear power generation. In the last few years costs of nuclear new build have sky-rocketed, while those of renewables have fallen sharply. It is no longer in customers' interest to be offered such expensive electricity. Moreover, how is it to be funded? Here again we responded to a consultation on the RAB model, but again no conclusion. The majority seem to be utterly opposed. It is unfair to expect the public not only to fund new nuclear, but also to take all the risk. Most particularly older people will be paying out, but will never receive the benefit of the electricity, as nuclear power stations take so long to build.

Energy policy needs to be brought up to date. There is no place for new nuclear power stations in the modern world. As far as the climate is concerned, by the time new stations are brought on stream, it will be far too late. Greenhouse gases need to be reduced now, not in 10 or more years' time. Nuclear power is so expensive, that it gobbles up all the available money, which should otherwise go towards research into renewables.

C Wilson

The energy policy adopted by the UK with particular reference to the need for new nuclear power stations.

The current energy policy is completely outdated having been put together in the 2000–2010 decade. EN1 & EN6 are not fit for purpose. EN6 includes potential nuclear sites which are on eroding coastlines in flood zones 2 & 3 which are in danger from the impacts of climate change: rising sea levels; increased risk of flooding from storm surges and from more extreme weather events. Also, EN6 does not include assessment of impact of nuclear on town water supplies given predicted extreme water shortages. EN6 does not support sustainable electricity production.

An energy policy fit for the future is required to establish a sustainable, flexible, cost effective, low carbon/pollution framework using the likes of: smart systems; energy efficiency; demand management; storage(pumped/batteries/ammonia etc);green hydrogen (heating & transport?); wind; solar etc. An independent assessment of new nuclear power generation should be conducted to assess the suitability of baseload supply in a flexible future, as well as the problems of radioactive waste.

C Megson

GE Hitachi's BWRX-300 SMR is a uniquely cost-effective nuclear power plant. The first will be operational in 2027; it will be available in the UK in 2030 at a capital cost of £522 million. The UK can reach zero carbon by electricity generation using heat pumps to replace natural gas for heating and hot water, and replace petroleum use by manufacturing green

hydrogen. The BWRX-300 could generate the 4,029 TWh of low carbon electricity needed every year, for their 60 year lifespan at a capital cost of £889 billion. The BWRX_300 electricity is 24/7/365 and existing conventional and pumped hydro and interconnectors would probably suffice for load following. There is a good chance BWRX-300s could be manufactured in the UK under licence as we have the manufacturing capacity and expertise. The Government is already investing in R-R SMRs, but the BWRX-300 will be under half the capital cost and will out-compete the R-R SMR anywhere else. It might be possible, as the BWRX-300 supplier ‘this side of the pond’, we would supply Europe and even further afield. The boost to the UK’s nuclear power industry, steel-making, engineering and other technologies would be massive. The UK back at the top table.

For the same route to zero carbon, the capital cost of a reasonable combination of biomass-baseload and renewable technologies to generate 4,029 TWh of electricity per year, for 60 years is £4,813 billion. Starting in 2020, that would be investing £160 billion per year for 30 years, to 2050. Starting in 2030, the investment in BWRX-300 npps would be £44.5 billion per year for only 20 years. Not costed into the renewables alternative is rectifying the ‘intermittency-problem’. A P2G2P infrastructure would be needed, along with the storage of enormous volumes of hydrogen in salt caverns, for diurnal and seasonal energy storage. It is reasonable to assume zero carbon by 2050 can be reached with a BWRX-300 network, as easy, if not easier than the renewables alternative. The BWRX-300 sites would occupy 100.5 km²; onshore and offshore wind and solar pv sites would occupy 248,579 km² [UK land area 245,495 km²] and biomass fuel would occupy 114,333 km² somewhere else on Earth. That’s 3,600X greater than BWRX-300 sites. The BEIS will make decisions now on what will be bequeathed to the next three generations of our families. To ignore advanced npps and accept the environmental desecration of renewables would be a sin.

The build programme for the BWRX-300 is just 2 years, the same as biomass, wind and solar. This negates the cost-of-capital burden that has tortured ‘big nuclear’ investment for decades. The £522 million invested in a BWRX-300 would ‘buy’ 469 MW of onshore wind, which is by far, the most cost-effective renewable. The BWRX-300 will generate 142 million MWh of dividend-paying units of electricity; 469 MW of onshore wind would generate 28 million MWh—just 20% of dividend potential. Investment will flood out of renewables and into the BWRX-300. Before then, the Government needs to change its policy so that nuclear power goes alongside renewables as a low-carbon technology and the green-banks and green-funds are given the go-ahead to invest. To allay the fears of the general public and counter the power of the anti-nuclear lobbyists, the Government needs to publicise the passive safety of Gen III+ SMRs and an NRC ruling that the Emergency Planning Zone ends at the tiny site boundaries. Government policies need to ease the pathway to investment in SMRs which, without any doubt, will reduce electricity bills to deliver more spending into the general economy and eliminate the heat-or-eat choices some have to make.

Dr W Bodel, The Dalton Nuclear Institute at The University of Manchester

The role of fission Advanced Modular Reactors (AMRs)

- Existing nuclear reactors are Light Water Reactors (LWRs), with Small Modular Reactors (SMRs) in development.

- LWRs and SMRs are water-cooled and operate at low temperatures with inefficient uranium usage.
- AMRs offer many improvements over LWRs and SMRs, such as increased uranium efficiency by a factor of 50.
- AMRs could offer significant impact in achieving net-zero CO₂ emissions by 2050, using their higher operating temperatures to fulfil a wider role than simply baseload electricity generation.

While LWRs and SMRs can only contribute to electricity generation, AMRs could contribute to energy demands beyond electricity such as heating and transport (currently 20% and 28% of UK greenhouse gas emissions respectively; electricity supply is only 14%).

AMRs incorporate more innovation than SMRs; deployment is therefore further away. Some AMR designs require more development work than others. AMRs likely to be deployable before 2050 are those where previous experience exists, much of it from previous R&D in the UK.

Proper examination of deliverable AMRs now will reveal which features best contribute to decarbonisation. A well-defined role for AMRs in the future of the UK's energy landscape would enable a robust strategy for assessing suitable candidate systems.

The improvements offered by AMRs over LWRs include:

- A role beyond base-load electricity generation—higher operating temperatures, enable heat output for domestic or industrial purposes, or synthesis of hydrogen—vital tools in achieving net-zero as this decarbonises non-electrical sectors.
- Reduced environmental impact.
- Better uranium usage—existing waste has the potential to fuel the UK for 3,000 years with the right system.
- Modularity, reducing capital costs in a similar way to SMRs.
- Smaller reactors could result in most components being made in the UK, this plus a full fuel cycle would provide many high-skilled jobs.
- Successful AMR development could lead to a sizeable export market.

The UK has plenty of talent: The National Nuclear Laboratory, Catapult centres such as the Nuclear Advanced Manufacturing Research Centre, national user facilities, staff at nuclear sites due for closure before 2030 and various centres of excellence at universities around the country. Co-ordinating these institutions and encouraging collaboration with innovative companies and future supply chains is essential to deliver new nuclear projects successfully.

If AMRs are to be a success, it's important that lessons are learned from the UK's previous application of competition in the nuclear field, and the current impasse on the rollout of LWRs.

- Identify roles for AMRs and develop a detailed future energy strategy.

- Develop a regulator-based assessment system to evaluate AMR suitability.
- AMR immaturity allows government to support several designs at this early stage, but a clear process is required for the path towards developing demonstration facilities.
- British taxpayers have underwritten a lot of recent private sector nuclear development; they should benefit from development and implementation of AMRs.

A future energy strategy needs to answer questions such as: How important will hydrogen and/or heat be in the future? What system flexibility is needed?

Generic Design Assessment (GDA) is used by nuclear regulators to assess new designs prior to deployment. Many AMRs are too immature for GDA, but a regulator-based system (perhaps similar to the Canadian system) is needed to separate realistic candidates from those which are impractical or whose benefits are delivered beyond 2050.

AMRs are future technology. It is not necessary to “pick a winner” yet, but processes to ask the right questions of potential vendors will be crucial to their development. For this to happen, government must more actively champion an assessment process and identify clear roles for AMRs in the future UK energy market, and the anticipated market size.

Prof. F Livens, The Dalton Nuclear Institute at The University of Manchester

The delivery of Small Modular Reactors (SMRs)

- New nuclear power is necessary to achieve net-zero CO₂ emissions by 2050.
- Large nuclear plants (≥ 1 GW) are costly and difficult to build.
- SMRs would be easier to build and finance.
- Widespread agreement among experts that to be cost effective, many SMR units would need to be built.

To reduce costs, power stations require economies of scale (“bigger” reduces costs) or economies of number (“more” reduces costs). The large up-front costs and financing are the major barrier to new large nuclear power stations as seen in early 2019. SMRs would avoid such large up-front costs by being factory-built modules (similar to large naval vessels) and not bespoke-built on-site. To be cost effective though, many units would have to be delivered.

A landscape with several vendors competing to deliver SMRs is unlikely to deliver the desired competition benefits; and could make SMRs too expensive to be useful in meeting the UK’s climate change targets.

The UK’s experience introducing competition in the nuclear field has been poor. Many designs in the Magnox and AGR fleets prevented supply chain standardisation. In decommissioning, the artificial “competition” introduced was eventually reversed at significant cost.

- Ignoring this issue could make SMRs too expensive to deliver.

- The UK's existing nuclear AGR fleet is unlikely to be operating beyond 2030, leading to a large drop in low-carbon electricity generation.
- SMRs could potentially be more economic than large reactors in time for the 2050 target.
- Properly supported, there is potential for British-made SMRs to be a major export success.
- New reactors have an expected lifetime of 80 years. The right system could provide electricity for the UK until the end of the century.

A market-driven solution has not materialised for large reactors, and expensive (in the form of Contract for Difference for Hinkley Point C) or untested (the Regulated Asset Base for Sizewell C) financing methods are now being implemented. The UK has missed the opportunity to pick a large reactor system; instead encouraging a multitude of different designs, all but one of which have failed due to high costs.

To be online in time for the retirement of 14 of the 15 reactors in the UK by 2030, an SMR system has to be selected very soon.

- Many competitors with different SMR systems would reduce the numbers of units of each system delivered, reducing cost-effectiveness.
- Government's position in the last half-century has been that of facilitator, leaving the industry to deliver and choose the best technology – this has failed to deliver cost effective new plant.
- Government should take a more active role in directing the development of a strategically important sector.

Government does not have to directly pick a winning reactor system. SMRs are low-risk designs with limited amounts of innovation involved in their delivery, other than scaling down existing reactor designs to be built in factories. A demonstration plant may not even be needed, moving instead to a first-of-a-kind plant to demonstrate functionality. A set of criteria developed by a government-sponsored committee could provide the assessment method by which a system could be selected and supported.

It is important for the UK to not “back too many horses”, as this could be hugely detrimental to cost. Competition has tremendous utility in driving down costs in some sectors, however it should be not be artificially introduced at the expense of sound strategy. The nuclear energy sector must have greater coordination at government level to thrive.

C Parry

There is constant pressure on the UK Government BEIS Committee from the Welsh government to consider financing Swansea tidal lagoon, there is an overwhelming alarm at the environmental impact of landlocked Lagoons would have through various sources, this form of landlocked Lagoons should be totally ignored and dismissed once and for all, advances in new methods of tidal energy is forever changing with new ideas being more environmentally friendly.

Any landlocked Lagoons would cause extreme biodiversity mayhem with unknown consequences.

The cost of a clean-up operation would be immense and not even considered, the damage caused would be unmanageable, with total extinction of certain wild species and decimation of biodiversity of precious areas, again not even considered, there are investors looking to make large sums of money, regardless of any environmental impact.

By making more coastal grounds a protected area, even consider all U.K. coastal grounds protected areas this should not be overlooked for the protection of wildlife and future biodiversity.

This will no doubt become law in future, but the BEIS Committee has the opportunity to realise this now, before any irretrievable environmental damage has occurred.

Marine Energy Council

The provision of revenue support for marine energy (wave and tidal stream energy) for the development of small-scale technology driven projects in the UK during the 2020s, prior to the roll out of pre-commercial and commercial sized projects in the 2030s.

The UK currently has the leadership position in the development of marine energy technology and projects. This lays open the route to a global market of £76b whilst allowing UK technology to be used on projects in the UK, a first for the UK in our move to a low carbon economy. This will create jobs and build the strength of peripheral economies in which there has been a historical under investment and provide an opportunity for exports. The Offshore Renewable Energy Catapult has estimated that the tidal stream sector on its own could secure a net GVA benefit of £23b by 2050 whilst contributing to the Government's 2050 net zero carbon target.

The marine energy sector has in the past proposed to BEIS that it could be supported through two mechanisms. Firstly, via an Innovation Power Purchase Agreement (IPPA), a tax rebate system for smaller 5MW projects by which the purchase of the power pays over the market rate and is then compensated through a tax rebate/credit. Secondly for larger projects through an Innovation CFD (iCFD) whereby new technology does not compete with fixed offshore wind. The iCFD does seem to be being covered by the BEIS consultation on CFDs and therefore we would ask the select committee to support the delivery of an IPPA. Without this marine energy projects in the UK will be dominated by technology developed outside this country. A full paper on the IPPA has developed and can be provided to the Committee.

The European Marine Energy Centre

Tidal stream and wave energy have the potential to positively impact the UK in terms of contributing to regional and national economies and to the UK Government's 2050 Net Zero targets. The UK industry currently boasts 22 tidal stream technology developers and 23 wave developers with an estimated investment to date in excess of £500m of private capital in developing marine energy technologies and £70m in direct public support.

With the right support, the tidal stream industry could generate a net cumulative benefit to the UK by 2030 of £1.4bn, including considerable exports and creation of 4,000 jobs.

Wave energy, which is a newer technology that sits behind tidal stream by perhaps 10 years, could add a net positive contribution to the UK economy, worth a cumulative benefit to the UK by 2040 of £4.0bn and support 8,100 jobs.

Currently the sector must compete for revenue support with offshore wind, which is not suitable for a technology at this early stage of development. A revenue support model like an Innovation Power Purchase Agreement is crucial to enable marine energy to reach commercial viability and play a key role in enabling the UK to meet Net-Zero targets using UK technology, while boosting UK jobs and exports.

Both tidal stream and wave energy have the potential to generate high quality and highly skilled jobs across the UK in distinct and unique maritime and peripheral regions. This includes post-industrial areas in need of regeneration and gas and maritime sectors wishing to diversify and adapt. The UK is uniquely situated because of its marine environment and heritage. This gives the UK, especially the coastal areas of Scotland, Wales and the Solent, the South West with supply chain support from the industrialised North East, strong opportunities to lead the world in this emerging global sector.

The Innovation Power Purchase Agreement (IPPA) would catalyse an explosion of innovation in the UK marine energy sector, allowing it to scale up, reduce costs and achieve commercial viability without impacting consumer bills. It would give the UK Government the opportunity to enable UK businesses to invest in tidal stream and wave energy. It would assist business, which currently accounts for 31% of UK electricity consumption, to buy marine energy to achieve their own Net Zero targets whilst helping new British based technology and manufacturing companies.

The proposed IPPA is designed to support technology developers to reach commercial readiness whilst focusing on and rewarding a rigorously regulated cost reduction trajectory. Under the scheme a developer would sell electricity at a higher than the market price (set by BEIS). The buyer would then be able to reclaim the excess cost against tax in the form of a rebate. The energy would be sold at four levels starting at £290/MWh digressing by 15% every 30MW of industry deployment. Each technology company would have a 5MW allocation at each level. Without delivery and the ability to reduce costs, there would be no progression to the next allocation level. Importantly this means that the IPPA would only reward success and technology that could not reduce costs would not progress.

When paired with the proposed Innovation Contract for Difference (iCfD) that is currently being discussed between BEIS and the Floating Offshore Wind Sector the UK would create a stable support framework to secure an innovative clean energy industry within this Government. The 120MW deployed via the IPPA would reduce the cost from £290/MWh to £151/MWh. This would enable marine technology to enter the iCfD pool and after another 800MW of deployment using this route to market reducing the cost to £90/MWh.

M Powner

We believe that more should be done to investigate alternatives to constructing new roads, which will bring more cars into residential areas and significantly increase air pollution. We'd like the Committee to look at innovative ways to persuade people to get out of their cars and onto public transport or active travel options. We think there are opportunities

to use community transport initiatives to generate demand for public transport and then for CIC organisations to be established to deliver the resulting longer-term services. We can use ideas such as “car-free” days (and, ultimately, “car-free” weeks) to encourage people onto those new transport options (along with active travel for shorter journeys, of course). As part of the scheme, we’d like to explore the possibility of using cycling buses (see this link <https://www.eta.co.uk/2016/11/04/pedal-powered-school-bus/>) for school and community transport and we would like all local public transport journeys to be either free or very low-priced to encourage significant take-up. Extending community and public transport, including on-demand transport options, will support healthier lifestyles, reduce air pollution and provide a variety of local jobs. This initiative will, ultimately, pay for itself with reduced NHS spend, improved productivity and more “in-work” citizens.

You will be aware that 42% of NO₂ emissions are caused by road transport and that 25% of morning rush hour traffic is parents dropping children off at school. We, as a country, are also recognising the increasing number of deaths and reductions in life-expectancy as a direct consequence of air pollution. More than 11% of roads in the UK are breaching agreed limits for NO₂ emissions. With this mind, and especially as Parliament and Local Authorities have now recognised the climate emergency, we should be looking at alternative options, rather than continuing to put the car driver on a pedestal.

The GMSF Natural Environment Topic Paper (<https://www.greatermanchester-ca.gov.uk/media/1744/natural-environment-topic-paper-w-cover-web.pdf>) confirmed that £41m per annum could be saved in GM alone in avoided healthcare costs due to pollutant removal. That is almost £15 per citizen!

In addition, it is clear that building more roads brings new traffic <https://bettertransport.org.uk/roads-nowhere/induced-traffic>, so aims to clean up our air will not be achieved by constructing new highways. We need to get innovative!

Greater priority should be given to public transport, particularly in terms of spend and funding. If, for example, we put the spend related to constructing new roads into building better public transport, giving citizens the reliability and frequency they need, at a cost they can afford, there would be much greater demand for services. Policy should also ensure cleanliness, safety (including no overcrowding) and security on public transport too.

The National Planning Policy Framework should be amended to require contributions to public transport and active travel options as part of all new developments. Why do we need this? A developer can offer a Local Authority money IF (and only if) they secure a relief road, yet limit their public transport contribution to improving a couple of bus stops!

Greater support should be available to community groups to encourage local people to establish community transport initiatives.

The Human Rights Act already gives public bodies responsibility where they make decisions that could affect life-expectancy. This right needs to be strengthened so citizens whose health is being affected by high levels of air pollution can demand action from their Local Authority to improve air quality in their area.

Bristol Green Capital Partnership

What new actions and support are needed by individuals, communities, third sector organisations, businesses, etc. to enable continuity in a future of extreme weather events with long term impacts on the supply and demand for goods and services? How does provision of these actions and support differ from national and local state actors and how can they best work together.

Prof. S Bridle, Department of Physics & Astronomy at The University of Manchester

Food production is one of the largest contributors to greenhouse gas emissions, and it is expected to grow even as other sectors shrink their contribution. In order transform the food system to significantly reduce its impact on the climate, we need to put in place a path to provide quality information and financial incentives that help and reward consumers and food producers who make climate-friendly choices. As a first step, we need mandatory greenhouse gas emissions labelling on every food packet. If this is not sufficient to drive change, then emissions subsidies and taxations can then be implemented based on the labelling. Furthermore, greenhouse gas emissions labelling can be seen as a pilot for environmental impact labelling more generally, including land use, water use, eutrophication and biodiversity.

Food causes about a quarter of all greenhouse gas emissions—primarily from forest clearance from agriculture, methane from animal burps and manure, and nitrous oxide emissions from fertiliser application. A rising population, coupled with a shift towards more emissions-intensive food, means food is expected to account for 70% more greenhouse gas emissions in 2050 than today. If we follow the fossil fuel reduction targets, then food production will be the biggest contributor to climate change in the next decade or two. However, efforts to tackle this problem are often quickly polarised, casting vegans against farmers against supermarkets, and rational analysis of food emissions data often gets left by the wayside.

With the UK aiming to be a world leader in tackling climate change, with a target for net zero greenhouse gas emissions of 2050, it is imperative that the contribution of food production is quantified and addressed.

Traffic light colour coding has helped consumers interpret the nutritional information on packets and has been proposed for emissions. While some consumers may not understand the system, or are overwhelmed by information, labelling incentivises industry to take actions to avoid red labels, as seen when the threshold for a red sugar traffic light was changed.

Carbon foot-printing is now carried out routinely using programmes like Cool Farm Tool. Combining new technology, consumer interest, and the urgency of reducing emissions, the time has come for mandatory food emissions labelling and appropriate support to help food producers to carry this out.

Each food item should be labelled with the amount of greenhouse gases emitted in its production.

Aldersgate Group

Procurement policies have a significant impact on the products and services that are used in public and private sectors, with the public procurement market representing an estimated value of £284bn in 2017/18.⁷ Well-designed procurement frameworks can play a key role in reducing emissions, creating markets for low carbon goods and thereby supporting industries investing and innovating in alternative goods and services.

We therefore suggest that the Business, Energy and Industrial Strategy Select Committee examines the role of procurement and the opportunities of introducing sustainability and resource efficiency criteria in procurement guidelines and enhancing sustainable business practices. Clearer procurement guidelines that embed sustainable criteria throughout the procurement process would for example create a sizeable market for key products like low carbon steel or cement.

The inquiry should consider the following aspects:

- The impact of the Greening Government Commitments and other initiatives
- Incentivisation of low carbon goods and services
- Local government procurement guidelines
- Impact on SMEs
- Role of procurement in resource efficiency and waste

G Elliott-Smith

The continued investment by UK councils in energy-from-waste incineration. In Enfield and 7 other London boroughs, all black bin waste is incinerated without pre-sorting. Less than 30% of waste is currently recycled, meaning that vast quantities of recyclable material is going up in smoke. This is carbon intensive, releases tons of fine and ultra-fine particulates that cannot be captured by filters, is a public health disaster and supports a linear economy.

Burning unsorted waste produces more CO₂ than coal, yet £1.2bn of public money is currently being spent on expanding the Edmonton incinerator. This is in opposition to the UK government's net zero carbon target and stated desire for cleaner air and a circular economy. Edmonton is not a lone example—incineration is heavily relied on throughout the UK to dispose of waste that could be recycled & composted. DEFRA data shows that increased incineration capacity corresponds to reduced recycling rates in almost all cases, putting it in opposition to the UK government's aspirations.

Immediately pause and independently review all proposed incinerator expansions in light of current UK government targets. Require efficient pre-sorting of all domestic waste prior to incineration to maximise recycling rates. Enforce recycling targets on councils which have failed to meet the 50% 2020 target. Joined up sorting and collection regimes and policies across neighbouring boroughs to make recycling more effective and better understood.

7 The Institute for Government & Gowling WLG (December 2018) [Government Procurement: The scale and nature of contracting in the UK](#)

Prof. M Shaver / Dr M Burgess, Both University of Manchester

We would like BEIS to explore of standards and standardisation across the recycled plastics supply chain, with a view to creating new policy that will dramatically improve the profitability of plastic recycling. We believe a step change is required to connect industrial thinking across the recycled plastics supply chain and deliver the laudable aims of the Government's 'Our Waste, Our Resources' Strategy (2018).

The drive from consumers, government and UK Plastics Pact to increase use of recycled plastics has exposed the lack of UK recycling capacity. This is partly because the ease of exporting unsorted plastic waste has led to long term underinvestment in UK plastic sorting and reprocessing facilities.

New investment requires robust returns through creating more volume of more valuable plastic waste. In turn this means creating conditions to deliver purer bales of single-polymer post-consumer plastic to reprocessors; not straightforward. Single use plastics are currently made from diverse material grades, retailed to consumers and imperfectly sorted in kerbside collection systems. Local Materials Recovery Facilities (sorting stations) typically remove bottles for recycling (already relatively standardised) and send the rest unsorted to Energy from Waste plants or landfill. Transforming this needs a consistent guiding hand which only BEIS can provide.

The Government's 2018 'Our Waste, Our Resources: A Strategy for England', authored by DEFRA, set out the need to achieve the UK Plastics Pact goals of all plastic being recyclable, reusable or compostable by 2025 and more generally to avoid waste and reuse or recycle resources whenever possible.

We are concerned that DEFRA's consultation and proposals on Consistency of Collections fundamentally misses the standardisation objective and will prevent achievement of overall strategy objectives. BEIS has responsibility for national Industrial Strategy: DEFRA seems principally concerned with households and Local Authorities transfer of disposed materials to Materials Recovery Facilities. We are concerned that the wider goals of the Strategy will not be achieved without collaborative action across the recycled plastics supply chain (from retailer to household and back through Materials Recovery Facilities to reprocessors).

Standardisation of outputs at every stage of the supply chain is a fundamental requirement to make a circular economy work: one firm's output is another's input. Increasing circularity depends on efficient recycling at scale, itself requiring new levels of standardisation. This needs to be facilitated, if not instigated, by BEIS.

We work with over 50 industrial partners on improving plastics recycling in the UK. They are absolutely clear that standardisation of processing throughout the recycling value chain—to create better quality recyclate and therefore better materials for the plastic industries to work with—is paramount if recycling volumes are to be increased.

Ideally, we all would like to see BEIS intervene with a view to:

- Limit rigid packaging to standard grades of three polymers: PET (polyethyl terephthalate), Polypropylene and HDPE (high density polyethylene);

- Work with DEFRA to mandate a standard arrangement of kerbside bin contents to generate standard processing conditions for Materials Recovery Facilities across the UK;
- Specifying output qualities of output bales from Materials Recovery Facilities, together with banning or limiting their ability to export unsorted plastics to force them to sort;
- Facilitation of markets in these sorted high-specification bales;

Additionally, high quality sorting would be greatly facilitated by a machine-readable marking system, usable by all retailers through a nationally available open system. Oversight from BEIS in establishing such a system would be invaluable.

Standardisation enables quality consistency, markets create multiple supply sources; together facilitating new investment, increasing recycled volumes and circularity.

D Chapman

The energy use and pollution caused by the cruise liner industry.

The cruise liner industry is responsible for enormous emissions of greenhouse gases and dumping of huge amounts of pollutants into the oceans.

Develop an international convention.

Prof. W Holderbaum, University of Reading

Commercial shipping is a major business in the global economy, and like every sector, it will need to address the growing challenge of transitioning to a low carbon economy as climate change still remains one of the biggest threats to our future.

There has been a continuous shift towards the de-carbonisation of major infrastructures such as transport and energy, and an uptake of renewable power generation either via external or internal sources. Terminal port operators are not immune in the UK and the current shipment of containers is 8–10 million units a year. Each time a container is moved to and from a ship, there is a carbon cost for lifting each container.

Even within current technological constraints, there is an opportunity to retrofit or create systems to recover the energy involved in lowering goods containers, which can be stored in an Energy Storage System on the crane for reuse when lifting the next container. There are about 120 commercial ports in the UK. These include major all-purpose ports, such as London and Liverpool; ferry ports such as Dover; specialised container ports, such as Felixstowe, and ports catering for specialised bulk traffic, such as coal or oil.

The majority of CO₂ emissions from port operations originate from diesel-fuelled internal vehicles and yard cranes. The Port of Felixstowe (PoF) is the UK's busiest container port, dealing with 48% of Britain's containerised trade. In 2017, it was ranked as 43rd busiest container port in the world and 8th in Europe, with handled traffic of 4 million twenty-foot equivalent units and 70000 tonnes of Carbon Dioxide equivalent per year.

Therefore, developing a lower-carbon system for shipping can double the energy efficiency of the crane's driveline, reduce the power demand of the Port and reduce the emissions associated with generating electricity by approximately 50%-60% (pilot schemes run at the Port of Felixstowe and Southampton by electrifying all RTG cranes). There is little understanding regarding the substation impact on the crane demands and energy cost. However, by improving our understanding; energy storage systems with optimal energy management controllers have significant potential to contribute to reducing electricity energy costs and peak demand.

Increasing energy efficiency has generally multiple benefits, which include not only saving energy and therefore reducing the economic cost of crane operation, but also reducing carbon emissions and reducing the demand on hydrocarbon resources and electricity supplies.

CO₂ and overall greenhouse emissions from ports around the world account for about 2%-3% of the world's total. Any new potential solutions will include both UK and worldwide and so an overall reduction of the UK emissions can be exported around the world.

Three key actions could help this work be more widely adopted.

First, the highlighting of this work and engagement with relevant authorities and stakeholders will raise awareness of the overall benefit of reducing the environmental and economic cost of commercial port operations.

Second, recommendations from the Select Committee that central government support the evaluation of, and provide financial aid to help companies adopt this technology.

Third, bringing together academics, innovators and technologists will help to promote further competition of all available technologies for commercial port operations to help fight climate change.

Dr C Hoolohan (lead) and Dr A Browne, Tyndall Centre for Climate Change Research, The University of Manchester

Electricity, heat, and transport take centre-stage within emission reductions targets, yet water is estimated to be the UK's fourth most energy-intensive sector, and hot water a substantial contributor to residential energy demand. We wrote a recent blog on this issue:

http://blog.policy.manchester.ac.uk/energy_environment/2019/11/can-we-reduce-water-demand-to-80-litres-a-day-and-what-can-the-government-do-to-support-it/

Water reduction measures typically rely on a technological innovation; tightening building and appliance standards, water efficiency devices and metering. These are complemented by behavioural measures based on an individualised model of consumption; education, targeted messaging and comparative bills. However, water demand management measures reliant on individual behaviour change and technological innovation are insufficient to meet the ambitions of the 2015 Paris Agreement or the UK's Net Zero commitments. If these are to be achieved, alternative approaches are required that account for the role of cultural, material and political developments in shaping everyday water use.

Developing the evidence-base for demand management also requires changes to the planning and evaluation methods. Micro-component approaches are common methods to estimate domestic demand and the impact of intervention. However, micro-component approaches tell us little about how and why water is used, fail to capture the variety of water use associated with personal practices, and provide few insights to enable intervention. Methods that better represent the complexity and diversity of water use are required.

Average daily water consumption in the UK is approximately 140 litres per person; well above that which is sustainable in a changing climate. To reduce demand, we need to change how water is used, or else the benefits of technological innovation and individual behaviour change will be offset by wider socio-material developments (e.g. rising expectations of cleanliness (hyper-cleanliness) and higher flow-rate showers). Addressing water use requires recognition of diverse practices of people throughout the UK, to identify highly intensive practices too address, low-intensity practices to encourage, and circumstances that render certain households and individuals disproportionately impacted by water demand management (e.g. due to physical condition or cultural practice).

Recognising complexity and diversity of everyday routine, and the social and material developments with which they evolve, offers the prospect of deeper, more systemic modes of intervention. It also enables greater recognition of the coalition of actors involved in creating and sustaining water-intensive practices. Normalising and popularising alternative less water-intensive practices will require partnerships with many of these actors (e.g. the home improvement industry, fashion industry etc.), pushing beyond the usual sphere of water demand management. Given the possibility of such initiatives to reduce water demand at scale, they should be pursued.

Government would make better use of research that evidences the diverse ways in which people use water; particularly social science research that demonstrates the complex and interconnected ways water is embedded in routines. Without this understanding, it is difficult to conceive of ways that water might be disconnected from the services it provides, and hard to imagine alternative ways of accessing water services.

There is also need for creative leadership that considers not only how present patterns in water demand might be reduced, but also how alternative practices (that use little or no water) might be established and normalised. Government can facilitate change by influencing design, manufacture, retail and marketing practices and necessitate deeper collaboration between the water sector and less conventional intermediary actors.

There is also the prospect of extending building standards to encourage large-scale reduction in demand. More stringent targets are required to align with the UK's emission reduction targets and to encourage wider experimentation with household infrastructure. Building design can support change in practice and building standards must encourage construction and home improvement industries to examine options beyond water efficiency, for example, to consider how the re-design of bathroom, kitchen and laundry spaces might facilitate alternative behaviours.

CPRE, the countryside charity

The climate emergency threatens to irreparably damage many of our best loved landscapes and ecosystems. We need to take rapid action to reduce our greenhouse gas emissions, and to do that we need more low-carbon renewable energy.

We want to see these renewable energy projects done well in a way that minimises impacts on our landscapes and ensures that countryside communities hosting new infrastructure get to keep more of the money these schemes generate. For CPRE, the countryside charity, the gold standard for renewables is community energy – renewable energy projects proposed, designed, and owned by local people.

As well as providing locally appropriate renewable generation, community energy schemes can deliver a wide range of co-benefits, including income for community projects and funding initiatives to tackle fuel poverty, ensuring a just transition to a net-zero energy system.

However, since a report in 2014, now largely out of date, there has been no strategic policy framework to help the community energy sector meet its full potential. The BEIS Committee should hold an inquiry into the maximum role community schemes could play in decarbonising the energy system, and the policies needed to rapidly increase community energy capacity across the country.

The Department for Energy and Climate Change cited modelling in the 2014 Community Energy Strategy that, by 2020, onshore community schemes could generate between 0.5GW and 3GW of electricity. However, Community Energy England's most recent State of the Sector report showed that community energy is continuing to struggle, with 2018 showing the fewest new community energy generation projects, and community energy delivering 168 MW of total generation capacity.

The modelling and assumptions behind the estimated potential generating capacity of community energy in England detailed in the 2014 report were never revealed. It seems likely that the potential scale of community energy was underestimated. For instance, it was separately estimated that there are 26,000 sites suitable for micro-hydro energy production alone in England and Wales. An impartial re-evaluation of how much electricity could be generated by community projects is essential for establishing the policies necessary for realising its largest possible contribution to decarbonisation and the greatest level of co-benefits.

Moreover, we are currently far short of even the unambitious targets for community energy set by DECC in 2014. There is a clear need to re-evaluate what policies are needed to scale community energy up and out across the country.

Since most community energy projects are designed to a local scale, individual community energy developments are too small to currently benefit from Contracts for Difference, while the Smart Export Guarantee offers no specified minimum tariff rate. Therefore, following the removal of Feed-In Tariffs, the community energy sector does not currently receive any government revenue support. Since larger renewable energy projects, which do not deliver the same level of co-benefits as community energy, do receive revenue subsidies in various forms this is a key area for policy reform.

Moreover, since community energy projects can no longer rely on Feed-In Tariff income to cover capital costs, the number of new community energy projects has fallen dramatically. One option, which could be explored within this inquiry, is the potential for a new Feed-In Tariff style revenue support scheme specifically for accredited community energy schemes.

This inquiry could also consider evidence from international examples of how the Government could improve the capital support available to community energy schemes through the existing Rural Community Energy Fund. Other issues to consider include reducing the cost of grid connections for community energy schemes and tackling the cost to these projects of selling energy locally.

J Smedley

A new strategy for bringing offshore wind ashore and into the system. An offshore ring main or near shore loop should be started right away, and all offshore wind projects currently in planning should be delayed. Time they will quickly make up (as well as save costs) by not having to cable back and forth and not having to build massive infrastructure, one set for EVERY single wind farm.

As it stands rural counties are being swamped with cable corridors and enormous, industrial substations, which are allowed by by-passing normal local planning rules under the banner of being 'renewable' Land in the UK is not renewable and is a precious commodity, so renewable projects should not be allowed to waste it unnecessarily.

How could policy in this area be improved?

Change the National Grid's outdated contracts and stop this for-profit company putting profit above all else. Delay all currently in planning, and future offshore windfarms until a sensible strategy is formed. Push this through with urgency.

P Chandler

There are several Offshore Renewable energy projects planned and in construction of the East Anglian coast and there is no co-ordinated approach to connection to the National Grid. Projects are decided piecemeal, with multiple huge substations being built and cable trenches being dug over many miles of countryside. National Grid has been found wanting through not investing in network development to cope with the increase in multiple sources of energy production. Brownfield sites should be developed in preference to greenfield. What is required is a network of offshore substations, or hubs. These can be modular, extended as future development are granted, and interlinked where appropriate. An energy Czar is needed to co-ordinate projects and provide oversight of the cumulative impact of multiple projects on local communities' health and wellbeing.

Local economies are being affected by the current explosion of offshore renewables project. Coastal communities are dependent upon tourism to survive and provide employment and income for local residents. Whilst some limited income is available during the construction period, once built, there are no employment prospects offered at substation

sites as these are remotely operated and visited rarely. The negative impact of huge stadia sized substation complexes detracts from the natural beauty of the countryside and cause misery and despair to many local residents both during and following construction.

The root cause is that National Policy Statements are no longer fit-for-purpose as they were written at a time when offshore energy production was more expensive than onshore renewable energy and Gas generation. Offshore wind price has significantly reduced as the industry prices fall through efficiency increases and economies of scale. A re-write or amendments of NPS are urgently needed to stop the further loss of valuable greenfield locations and blight of countryside so valuable to tourism not only to East Anglia but other parts of the affected UK.

Suffolk Energy Action Solutions

Whilst in favour of offshore wind turbines, the current proposed onshore grid connections and substations, with their sheer scale and impact, will have a devastating impact on Suffolk coastal communities and the surrounding environment.

Offshore alternatives which can avoid this needless destruction are available and already being rolled out in Europe. These offshore alternatives include offshore ring mains and offshore substations.

We are calling for the BEIS Committee to urgently investigate the onshore connections for offshore wind energy off the Suffolk coast (EA1N and EA2) and to rethink a more sustainable strategy for these onshore connections, including the development of an offshore ring main.

To avoid the needless destruction of ancient woodlands, rare heathland habitats and communities that depend on these precious landscapes. Scottish Power Renewables windfarm projects EA1N and EA2 involve 9 km of cable trenching which will threaten environmentally sensitive areas including; the Suffolk Coastal Path, the Suffolk Sandlings, officially designated Areas of Outstanding National Beauty, the destruction of mature woodland and swaths of Grade 2 and Grade 3 agricultural land. This is not even a brownfield site but rather the proposals will result in the loss of an area of the best and most versatile land.

The tourist industry, very important for economic growth, employment and wellbeing in coastal areas will be hit both in the area directly around the substation and cabling routes and have a knock-on effect further afield. For example, in East Suffolk, the Destination Management Organisation survey has forecast a potential 17% drop in tourism.

The huge substations with their scale and associated light and noise pollution would permanently and fundamentally change the essence of coastal East Suffolk.

Offshore wind projects cannot (as currently they are) be looked at in isolation. There is a cumulative impact from the numerous, consecutively occurring, energy projects on and around the Suffolk coast. Any proposals need to take into account: Sizewell C possible development; the offshore development of round 4 Crown Estates which will be another raft of onshore and offshore building; the extensions that are planned for Galloper and Gabbard; and the Nautilus and Eurolink interconnections. Whilst all projects

are considered in isolation local communities and environments are left vulnerable to cumulative proposals. There needs to be an overarching strategic government plan for energy projects in East Suffolk.

Currently the Government has no national strategy for the delivery of offshore power into the National Grid.

In the short term, government policy should prioritise brownfield sites for onshore infrastructure.

In the mid-term government policy should require offshore transmission strategies that avoid needless destruction.

The solution will require new legislation, this is straightforward for a majority government.

The UK's position as a world leader in offshore wind power will be undermined if the Government continues its piecemeal, out-dated approach to onshore infrastructure.

V Saunders

Windfarm developments in the North Sea are destroying the Countryside in Norfolk and Suffolk due to the onshore infrastructure of Substations needed for each project.

National Grid are not investing in offshore Ring mains or encouraging the Energy Companies to work together to share the existing Substations.

National Grid are not exploring Brownfield sites for onshore Substations but have chosen an AONB on the Suffolk Heritage Coast for seven different Energy projects. The area has a fragile coastline which is prone to erosion after storms. The area is also prone to flooding and surface water after storms.

I feel that the National Grid are not investing enough in Energy Projects. National Grid are not being Environmentally conscious of the devastating effects of choosing the Suffolk Heritage Coast for seven Energy Projects.

I think the BEIS should investigate National Grid about how they make their decisions about where the landfall areas are chosen for offshore Windfarms.

Bradwell on Sea, Lowestoft, Harwich or Great Yarmouth are areas to explore for some of the Windfarm developments to connect to the National Grid pylons and build Substations.

It is just lazy to choose one area on the Suffolk Heritage Coast for all seven Energy projects.

Clean Energy Projects are important to the whole Country. However, it is important that the Countryside and Wildlife habitats are protected. There are many rare bird species in the Suffolk Heritage Coast, which need to be protected. Especially as bird numbers are declining rapidly.

There are many Brownfield sites in the area, which are not developed. Therefore, it is important that these areas are explored, rather than destroying virgin Countryside.

The BEIS passed the development of the Scottish Power Renewables of East Anglia One North and East Anglia Two in 2014 to come ashore at Bawdsey, Suffolk.

However, the calculations were changed after the permission was Granted.

Therefore, SPR went back to National Grid to ask for a different area to bring the offshore Windfarms onshore.

This is why the Suffolk Heritage Coast at Sizewell was chosen. It was not the first choice of SPR or National Grid. Therefore, different areas can be explored, such as Bradwell on Sea, Lowestoft, Harwich or Great Yarmouth.

It is totally unacceptable that the Countryside on the Suffolk Heritage Coast is destroyed because of an error made by Scottish Power Renewables after the original developments were passed by the Government.

A Government policy needs to be changed to encourage Energy Companies to work together, to share Substations and share Offshore Ring mains to minimise the impact of onshore destruction.

Government policy needs to be changed to encourage National Grid to invest more in Offshore Ring mains to minimise the impact of Renewable Energy Projects on small countryside villages and rural communities.

Government policy needs to change to ensure that all Energy Projects are looked at on a cumulative basis instead of individually, to ensure that the impact on the environment is minimised.

At the moment each project is looked at independently and constructed separately.

Therefore, the seven Energy Projects planned for the Suffolk Heritage Coast will be constructed separately and consecutively. This will mean over seven years of constant construction, which will be disruption for the wildlife habitats and residents. It will be very disruptive for the local tourist economy, and possibly destroy the tourist industry.

T Munden

Whilst in favour of offshore wind turbines, the current proposed onshore grid connections and substations, with their sheer scale and impact, will have a devastating impact on Suffolk coastal communities and the surrounding environment. Offshore alternatives which can avoid this needless destruction are available and already being rolled out in Europe. These offshore alternatives include offshore ring mains and offshore substations. The BEIS Committee should urgently investigate the onshore connections for offshore wind energy off the Suffolk coast (EA1N and EA2) and to rethink a more sustainable strategy for these onshore connections, including the development of an offshore ring main.

To avoid the needless destruction of ancient woodlands, rare heathland habitats and communities that depend on these precious landscapes. Scottish Power Renewables windfarm projects EA1N and EA2 involve 9 km of cable trenching which will threaten environmentally sensitive areas including; the Suffolk Coastal Path, the Suffolk Sandlings, officially designated Areas of Outstanding National Beauty, the destruction of mature woodland and swaths of Grade 2 and Grade 3 agricultural land. This is not even a brownfield

site but rather the proposals will result in the loss of an area of the best and most versatile land. The huge substations with their scale and associated light and noise pollution would permanently and fundamentally change the essence of coastal East Suffolk.

Currently the Government has no national strategy for the delivery of offshore power into the National Grid. Offshore wind projects cannot (as currently they are) be looked at in isolation. There is a cumulative impact from the numerous, consecutively occurring, energy projects on and around the Suffolk coast. Any proposals need to take into account: Sizewell C possible development; the offshore development of round 4 Crown Estates which will be another raft of onshore and offshore building; the extensions that are planned for Galloper and Gabbard; and the Nautilus and Eurolink interconnections. Whilst all projects are considered in isolation local communities and environments are left vulnerable to cumulative proposals. There needs to be an overarching strategic government plan for energy projects in East Suffolk.

L Walker

Whilst I am in favour of offshore wind turbines, the current proposed onshore grid connections and substations, with their sheer scale and impact, will have a devastating impact on Suffolk coastal communities (which is where I live) and the surrounding environment. Offshore alternatives are available and already being rolled out in Europe. These offshore alternatives include offshore ring mains and offshore substations. I would like the BEIS Committee to urgently investigate the onshore connections for offshore wind energy off the Suffolk coast (EA1N and EA2) and to rethink a more sustainable strategy for these onshore connections, including the development of an offshore ring main.

To avoid the needless destruction of ancient woodlands, rare heathland habitats and communities that depend on these precious landscapes. Scottish Power Renewables windfarm projects EA1N and EA2 involve 9 km of cable trenching which will threaten environmentally sensitive areas including; the Suffolk Coastal Path, the Suffolk Sandlings, officially designated Areas of Outstanding National Beauty, the destruction of mature woodland and swaths of Grade 2 and Grade 3 agricultural land. This is not even a brownfield site but rather the proposals will result in the loss of an area of the best and most versatile land.

The tourist industry, very important for economic growth, employment and wellbeing in coastal areas will be hit both in the area directly around the substation and cabling routes and have a knock-on effect further afield. For example, in East Suffolk, the Destination Management Organisation survey has forecast a potential 17% drop in tourism. The huge substations with their scale and associated light and noise pollution would permanently and fundamentally change the essence of coastal East Suffolk.

Surely offshore wind projects cannot (as currently they are) be looked at in isolation. There is a cumulative impact from the numerous, consecutively occurring, energy projects on and around the Suffolk coast. Any proposals need to take into account: Sizewell C possible development; the offshore development of round 4 Crown Estates which will be another raft of onshore and offshore building; the extensions that are planned for Galloper and Gabbard; and the Nautilus and Eurolink interconnections. Whilst all projects

are considered in isolation local communities and environments are left vulnerable to cumulative proposals. There needs to be an overarching strategic government plan for energy projects in East Suffolk.

It cannot be right that currently the Government has no national strategy for the delivery of offshore power into the National Grid and in the short term, government policy should prioritise brownfield sites for onshore infrastructure. In the mid-term government policy should require offshore transmission strategies that avoid needless destruction. The solution will require new legislation, this is straightforward for a majority government.

The UK's position as a world leader in offshore wind power will be undermined if the Government continues its piecemeal, out-dated approach to onshore infrastructure.

M Challoner Jones

We need an overall strategy for the connection to the grid for the multiple windfarms, Euro connections and other generation methods a large proportion of which are to be in East Anglia. The wind and other offshore connections should be made by a ring main or other offshore connections. In the immediate future to prevent Scottish Power proposals desecrating large swathes of Suffolk countryside and tourist industry

I obviously support alternative methods of generation but not by destroying the countryside, excellent farmland, lifestyles of village communities and tourist trade of the whole area and transport inter-links.

How could policy in this area be improved?

Develop offshore connections for coastal connections to the grid (the technology is already in existence) and use "brown field sites" for any other developments required.

C Allaby

The piecemeal way in which energy is being developed along the Suffolk coast.

Renewable energy is important to the whole country but should not be at the expense of the existing local economy, environment and way of life. Currently Suffolk residents feel their views are being ignored. There is a feeling that an energy strategy for this locality would enable a better balance of national/local/economic objectives.

How can policy in this be improved?

To formulate a robust regional strategy to halt the current piecemeal and debilitating sense that national initiatives are being shoehorned into the area without some oversight and concern for impact. A strategy where local voices were as important as national and economic considerations.

A N Morley

I am in favour of offshore wind farms but the lack of any Government strategy for the current onshore connections and substations will result in piecemeal development of huge industrial sites which will have a

devastating impact on communities and environment in Suffolk and Norfolk. Other European countries such as Holland, Germany and Denmark developed offshore alternatives to avoid this problem so there are proven ways to save our countryside

The BEIS Committee should urgently investigate why there is no such strategy in UK and work with National Grid and OFGEM to introduce a strategy to protect our communities by moving substations offshore and building ring mains or loops to reduce cable works onshore.

The current planning Inspectorate enquiry on EA1N and EA2 should be suspended until a new strategy is agreed.

The considerable number of new wind farms—already greed and those to be granted licences—will result in large areas of East Anglia being destroyed by large industrial sites. Further the cable connections from shore to substation often mean huge trenches being built for large distances creating long term problems for residents, farmers, business and the vitally important tourist trade. The huge substations would fundamentally and permanently change the essence of the Suffolk and Norfolk coastal regions.

The recent OFGEM Decarbonisation Action Plan stated that “individual radial offshore transmission links are not economic, sensible or acceptable to local communities” and stated that substations should be sited offshore with cable loops taking the power from numerous substations to minimise the disruption ashore.

There should be an urgent review of all the offshore projects such as the extensions planned for Galloper and Gabbard, the Nautilus and Eurolink interconnectors, the round 4 Crown Estates licences and current wind farm developments to agree a strategy for keeping as much development as possible offshore. Apart from the saving of our countryside it would enable most equipment to be delivered by sea avoiding the huge increase in HGV traffic currently planned.

All current planning enquiries must be suspended until a new strategy is agreed that is acceptable to OFGEM and our County Councils.

A Bullard

I am in favour of offshore wind turbines and green energy and welcome an emission-free future.

However, the current proposed onshore grid connections and substations in the East Suffolk area, centering on the villages of Sizewell, Thorpeness, Aldringham, and Friston, will, with their scale and sheer impact, have a devastating effect on Suffolk coastal communities and the surrounding environment.

Offshore alternatives which can avoid this needless destruction are available and already being rolled out in Europe. These include offshore ring mains and offshore substations.

I am calling for the BEIS Committee to urgently investigate the onshore connections for offshore wind energy off the Suffolk coast (EA1N and EA2) and to rethink a more sustainable strategy for these onshore connections, including the development of an offshore ring main.

To avoid the needless destruction of ancient woodlands, rare heathland habitats and communities that depend on these precious landscapes. Scottish Power Renewables windfarm projects EA1N and EA2 involve 9 km of cable trenching which will threaten environmentally sensitive areas including; the Suffolk Coastal Path, the Suffolk Sandlings, officially designated Areas of Outstanding National Beauty, the destruction of mature woodland and swathes of Grade 2 and Grade 3 agricultural land. The proposed site for the substations is not even a brownfield site, but mature and productive farmland, very close indeed to the church of St Mary's Friston and the village of Friston itself, which will suffer painfully and quite unnecessarily from this proposal.

The tourist industry, very important for economic growth, employment and wellbeing in coastal areas will be hit both in the area directly around the substation and cabling routes and have a knock-on effect further afield. For example, in East Suffolk, the Destination Management Organisation survey has forecast a potential 17% drop in tourism.

The huge substations with their scale and associated light and noise pollution would permanently and fundamentally change the essence of coastal East Suffolk.

Offshore wind projects cannot (as currently they are) be looked at in isolation. There is a cumulative impact from the numerous, consecutively occurring, energy projects on and around the Suffolk coast. Any proposals need to take into account: Sizewell C possible development; the offshore development of Round 4 Crown Estates which will be another raft of onshore and offshore building; the extensions that are planned for Galloper and Gabbard; and the Nautilus and Eurolink interconnections. As long as all projects are considered in isolation, local communities and environments are left vulnerable to cumulative proposals. There needs to be an overarching strategic government plan for energy projects in East Suffolk.

Currently the Government has no national strategy for the delivery of offshore power into the National Grid.

In the short term, government policy should prioritise brownfield sites for onshore infrastructure.

In the mid-term government policy should require offshore transmission strategies that avoid needless destruction.

The solution will require new legislation, a straightforward task for a majority government.

The UK's position as a world leader in offshore wind power will be undermined if the Government continues its piecemeal, out-dated approach to onshore infrastructure.

E A Spain

I am in favour of offshore wind energy but would like it to be implemented in a cost-effective and environmentally friendly manner.

I would like the Committee to look into putting in place a national strategy for the way offshore windfarms connect their energy into the National Grid. The National Grid and others have already identified more efficient and sustainable future methods of connection using near shore loops and/or offshore ring mains that will also facilitate export to Europe and avoid environmental damage to the UK countryside and wildlife.

I would like the first step to be an evaluation of whether the DCOs that are currently in process, and not yet approved, should be put on hold pending the implementation of a national strategy. Since offshore connections will involve less planning approvals from the many district/town councils and more straightforward and cheaper connections to the grid, they are likely to be implemented as quickly using offshore connections as using those onshore methods identified in for example the Vanguard and Boreas applications.

Both the consumer and the environment will benefit from a different method of energy connection to the National Grid. The current proposals (eg Boreas and Vanguard) will dig up miles of land for underground cables that are very expensive and disruptive to the rural communities crossed by the cables. Also, massive substations are created in rural landscapes where they don't naturally belong and can't be screened. Local opposition to this connection methodology highlights impacts on both the countryside, flora, fauna and the tourist industry. The current approach is short-sighted, starting from scratch for every application.

Viable alternatives exist: offshore substations and offshore ring mains (ORMs). This infrastructure is cheaper, quicker, easier to build and already used in Europe. It connects all the windfarms and comes ashore in just two places, avoiding most of the environmental damage.

If the current DCOs are included in the future strategy, this will help the economic position, avoid disruption to the countryside and not impact the timescale for UK renewable energy delivery.

While offshore windfarms continue to be built, a national ORM strategy would be efficient and economical, providing more viable long-term infrastructure solutions, rather than requiring new over-land connections for each windfarm.

The Government policy in this area could be improved by having a cohesive strategy for renewable energy connection to the National Grid, an increasingly relevant issue.

A long-term strategy will save a lot of time and money as well as reducing environmental impact. This is an increasingly important issue for the country as we strive to become carbon neutral.

Mrs P Dorcay

I wish to cover the issue of offshore wind turbines energy being connected to the National grid.

The logical long-term connection must be offshore ring main and offshore connection hubs as are already being implemented in Europe.

I am calling for the BEIS Committee to urgently investigate the current onshore connections for offshore wind namely SPR 's EA1N and EA2 which are at DCO stage and to rethink a more sustainable strategy for these onshore connections and others.

The impact on the area targeted will completely devastate the economy as it is reliant heavily on tourism. The tranquillity and beauty will disappear the wildlife corridor through the sandlings will be severed. The number of potential projects projected for the area namely Sizewell C/D Nautilus and Eurolink interconnectors expansion of Galloper and Greater Gabbard all potentially running in parallel. Total Madness!

Offshore projects cannot (as is current) be looked at in isolation The North Sea is earmarked for up to 40gw of power produced by turbines to help cope with zero emissions timelines set down by government.

Add into the equation Sizewell C/D and expansion of Galloper and Gabbard the communities and the environment will be left so vulnerable.

The Government needs an overarching strategic plan for energy.

A Cardy

The current lack of Govt. strategy other than leaving it up to the power generating companies and National Grid who driven by purely cost concerns, is leading to the unnecessary destruction of both important natural habitats and high-quality agricultural landscape along with rural communities in a headlong rush to implement green energy infrastructure. The need for the generation of energy by cleaner and greener means is fully accepted but the proposed onshore infrastructure currently in the pipeline could be dealt with in a much more sensitive manner with less damage to rural environments. Many of the areas where the installation of such infrastructure is proposed are areas where tourism along with agriculture are the mainstay of the local economies. Many of the affected communities have many elderly residents who are now faced with the prospect of years of disruption and consequent misery of depreciating property values. As much of the Green Energy generation and transmission is handsomely subsidised by the general public it doesn't seem unreasonable that there should be a great deal more accountability apart from the headline capping of charges. More needs to be done to coordinate and direct how and where Infrastructure is to be organised and placed.

As noted in the previous section the lack of direct Govt. involvement is leading to the selection of solutions and locations by companies with scant, genuine regard for the environment. Whilst it is true these schemes are subject to National Infrastructure planning Control and there is some guidance for applicants to take into consideration, there is no overall strategy ensuring co-operation between the various commercial interests to seek solutions that minimise the negative effects of their operations. It would also seem that at present that in preparing schemes some generation and transmission providers view the rubber-stamping of their schemes as a formality. There is also a particular problem in that National Grid who are essentially a private monopoly and one of the main drivers of the infrastructure arrangements are hiding behind some of the Generating Companies and are avoiding any public accountability. In allowing private companies to set and drive the agenda for these various infrastructure projects not only does it increase the risk of

creating significant damage it increases the risk of inefficient of resources as has been shown by the ‘Smart Metering’ fiasco, and in other fields the roll-out of broadband and mobile phone services.

As to what I believe should be done I have already alluded to in the previous two sections. There has to be much more rigorous and robust direction and regulation of these commercial interests especially when much of the investment appears to be coming from abroad. The direction needs to be based on a coherent strategy which seeks to maximise the benefits to all sections of society by requiring all companies in the sector to co-operate where possible and where this is not then to justify the reasons to the regulatory authority before even moving to the pre-planning stage. The strategy needs to be led and set down by Govt. and be subject to a degree of Parliamentary scrutiny. The commercial interests should of course be involved in any consultations as should relevant stakeholders including members of the public. Much better to have some upfront transparently arrived at strategy that is properly directed. In that sense, one particular strategy that might have been employed for the onshore transmission of offshore wind power and continental connections would have been the creation of the offshore ring main. A strategy that is being pursued across the North Sea.

The Aldeburgh Society

The Aldeburgh Society is gravely concerned that proposals for constructing onshore grid connections and substations serving several offshore wind farms off the Suffolk coast, through their sheer scale and impact and lack of coordination, risk having a devastating impact on Suffolk coastal communities and the surrounding protected environment.

The proposals involve cutting cable routes through swathes of AONB protected areas and creating large industrial buildings in a fragile rural area. Offshore alternatives which can avoid this needless destruction are available and already being rolled out in Europe. These offshore alternatives include offshore ring mains and offshore substations.

We are calling for the BEIS Committee to urgently investigate the onshore connections being proposed for the East Anglia One North and East Anglia Two (EA1N and EA2) offshore wind farms off the Suffolk coast, and potentially further windfarms and continental interconnectors, and to propose a more sustainable strategy for bringing wind power ashore, including the urgent development of an offshore ring main (as called for by OFGEM in its report issued on 3 February 2020).

The current proposals threaten the needless destruction of ancient woodlands, rare heathland habitats and the communities that depend on these precious landscapes. Scottish Power Renewables windfarm projects EA1N and EA2 involve 9 km of cable trenching which impact environmentally sensitive areas including; the Suffolk Coastal Path, the Suffolk Sandlings, officially designated Areas of Outstanding National Beauty, mature woodland, and swathes of Grade 2 and Grade 3 agricultural land. This is a greenfield site par excellence, and the proposals would result in the loss of an area of the best and most versatile land.

The tourist industry, very important for economic growth, employment and wellbeing in coastal areas, would be hit both in the area directly around the substation and cabling routes and have a knock-on effect further afield. For example, in East Suffolk,

the Destination Management Organisation survey has forecast a potential 17% drop in tourism, a significant proportion of which would affect the historic town and cultural centre of Aldeburgh.

The huge substations, with their scale and associated light and noise pollution, would permanently and fundamentally change the essence of coastal East Suffolk. To construct these near to, and at much the same time as, Sizewell C nuclear power station (if approved), would cause massive environmental damage.

The environmental and social impact of offshore wind projects must be considered holistically. There is a cumulative impact from the numerous separate energy projects being proposed on and around the Suffolk coast. Any proposals need to take into account: Sizewell C possible development; round 4 Crown Estates contracts, which imply another raft of onshore and offshore building; the extensions that are planned for the Galloper and Gabbard wind farms; and the Nautilus and Eurolink interconnections. So long as all projects are considered in isolation, local communities and environments are left vulnerable to cumulative proposals. There needs to be an overarching strategic government plan for energy projects in East Anglia.

The Aldeburgh Society is concerned that the Government appears to have no national strategy for the delivery of offshore power into the National Grid by the various companies involved. Legislation to set out such a strategy is urgently required. This legislation should require that brownfield sites are prioritised for any unavoidable onshore infrastructure, and that offshore transmission should be designed to minimise adverse impacts on the coastal environment.

The UK's claim to be a world leader in offshore wind power—a desirable development in itself—risks being undermined if the Government continues its piecemeal, out-dated approach to managing its implementation.

F Gilmore

If the U.K. is to be a world leader in wind power it needs to call an immediate strategic review of the current onshore transmission infrastructure proposals which are outdated and will inevitably cause unnecessary damage to unspoilt countryside and destruction of rare habitats, landscapes and heritage, leading to significant social and economic decline for local, permanent communities, including those in East Anglia. This Government has shown new courage and decisiveness in the last few weeks. This is the time to reassess what optimisation looks like for offshore transmission infrastructure and time to reject ill- conceived plans which will lead to needless destruction of what is precious to the planet as well as to local people. The current plans will have an adverse impact on over 100 villages in Norfolk and Suffolk across 1,600 hectares of unspoilt countryside, undermining farming and a thriving tourism industry in towns such as Aldeburgh, which will lose at least £40m revenues annually, closing down many small and medium sized businesses(source: DMO independent survey 2019).

Nothing is more important than infrastructure at this time. The U.K. has failed historically to value infrastructure as key to servicing an advanced society. Covid19 caught us sleeping. Our hospital infrastructure was found wanting. Not enough ventilators, inadequate PPE and sluggish distribution operations. Green energy requires creative, bold delivery

solutions to ensure that our energy is really green. Investment in new solutions for transmission infrastructure will deliver cost synergies and efficiencies. A £5bn investment now in devising an advanced East Anglia Modular Offshore Grid will avoid mitigation costs, delays and permanently damaged environments and communities. The new spirit of British can-do, engendered through the CV19 crisis should be captured and focused on a range of crucial infrastructure programmes as soon as this pandemic is under control. Infrastructure has never been more exciting. We can embrace new forms of architecture for energy infrastructure, they can be sublime and inspirational, but not at the expense of medieval village communities and landscapes. They can co-exist through a more integrated, holistic approach where barriers between BEIS Energy and DEFRA melt away, with collective teams of wind power transmission engineers, environmentalists and marine specialists working towards a win-win outcome.

Government policy would have to be reformed in order to enable the pooling of wind power via offshore substations, artificial island hubs, modular offshore grids bringing the power closer to where it is required with one major landfall substation at a brownfield site, close to the Thames Estuary. New legislation would deliver this and a levy charged per private energy company as well as to consumers who are willing to pay a premium for green energy delivered cleanly, without desecrating villages and countryside. There are already successful case studies demonstrating that the offshore alternative solution is possible in FOUR years, not as often quoted by private energy company lobbyists as ten. To make this happen, it just needs the will of government and this renewed sense of can-do spirit, which has been absent for many years. Parts of the energy industry (the offshore transmission infrastructure) would benefit from being renationalised to ensure that the national strategy is the priority, not the profits of a myriad collection of foreign owned private energy companies who have no stake in the protection of our unique countryside, local communities and local economies.

R S Pearce

The allocation of individual radial transmission and connection from offshore wind farms to connect to the National Electricity Transmission System (NETS) requires an urgent inquiry.

The current system whereby National Grid plc (a for profits company) allocates connections on a “first come, first served” decision, governed by a licence issued with denationalisation in 1989, has created an environmentally damaging and uncoordinated response to the offshore electricity generation to grid connection issue. A collective solution for bringing renewable energy ashore is essential if the UK is to continue to grow its renewable energy policy and meet the CCC’s 2050 deadline. Individual radial transmission systems, utilising submarine and, importantly, buried onshore cables, will cause untold damage to the UK countryside with a requirement for thousands of kilometres of cable trenches across the country; hundreds of kilometres of cable trenches are already within current National Infrastructure Planning (NIP’s) planning applications. The NIP’s applications are individual and uncoordinated; by example, despite Norfolk Vanguard and Norfolk Boreas sharing the same cable trench, individual applications for Development Consent Orders (DCOs) have been submitted. In addition, the expansion of limited inshore substations, to handle the UK’s increasing electricity energy requirements with the uptake of electric vehicles, will cause irreparable damage in rural areas. In the rush to switch to renewable

energy generation, the consequential effect of multiple transmission systems has neither been considered nor coordinated. With 2 major offshore wind farm projects (Norfolk Vanguard & Hornsea 3) awaiting a DCO decision from the SofS in June 2020 an urgent and immediate review of how the generated energy is transmitted to shore is essential and the pending DCO decisions should be further deferred while an inquiry is carried out.

Reference: NGET Business Plan 2021 -2026- (<https://www.nationalgridet.com/document/131776/download>)

Investment in an upgrade to the UK's electricity transmission infrastructure is urgently required in order to avoid environmentally devastating damage to the onshore environment. In April 2019 National Grid formed a subsidiary company—National Grid Electricity Transmissions (NGET) who have since produced their Business Plan (at the Reference). The document states (Page 59):

“Current offshore wind capacity of ~8 GW is connected via 32 connections. The same approach to deliver the CCC's target of 75 GW by 2050 would require an additional 268 connections.”

That is 268 “radial connections” to the shore, with the probability of having to travel significantly further inland to reach a suitable substation which would also need expansion (as per the DCOs awaiting SofS's decision). This would be an unprecedented number of transmission systems which, under current legislation, would require each and every offshore developer to design and build an individual cable transmission from offshore wind farm to, at least, the shoreline. There is a better solution in the form of a collective offshore grid system known as: the Offshore Ring Main (ORM); the ORM has been demonstrated to be a viable proposition. The Industry denies that a collective offshore solution is possible, this despite the Belgium Government demonstrating the use of the technology with the Modular Offshore Grid (MOG) (See link to <https://www.nsenerybusiness.com/projects/elia-modular-offshore-grid-project-north-sea/>)

The onshore NETS is a series of substations, to connect traditional power stations into a ring of cables on pylons around the UK known as “the Grid” and technically as the NETS. Therefore, there is no reason why the NETS cannot be mirrored offshore, other than cost. However, payment for the development of an ORM could be by way of a connection levy from the developers connecting to the ORM; developers would save millions of pounds by not having to design and build individual transmission systems. Economically, industry would still need to service the offshore installations, instead of onshore installations, which would preserve employment opportunities. Several developers have indicated that they would connect to an ORM if it were available. Any cost savings from a collective transmission solution would ultimately be passed to the consumer.

Decisions of such importance to the UK as its National Electricity Infrastructure, including how the environment is affected as a whole, should be made by Government and not left for a for profit company to make.

The deferment of decisions on National infrastructure projects to a public limited, for profits company, creates a conflict of interest. The National Grid Group plc has established the subsidiary National Grid Electricity Transmissions (NGET) responsible for the

provision of UK electricity, under the governance of OFGEM. However, the legislation regarding NETS connections is historic and not fit for purpose in the renewable energy age. Of note is that NGET makes profits for its shareholders through owned assets.

The Government recently passed its 'Net Zero Target' into law but an opportunity to review the National Infrastructure Planning (NIP) process and National Grid Licence for offshore wind was missed. Further, the OFGEM process for offshore wind requires any developer to sell the wind farm's transmission system to a transmission system operator, one year after operational commencement, via the OFTO process. However, there is the possibility of a conflict of interest whereby NGET can bid to operate these transmission systems, having already decided upon the connection point, making it possible that the connection decision was made for profit from the transmission system post OFTO, as an owned asset, rather than where it would be best placed considering environmental impact, disruption to the public, public health, cost to the consumer and multiple other factors. By way of example, a review of Norfolk Vanguard's & Norfolk Boreas's NETS connection point with that for Hornsea 3's, with these decisions being made just two weeks apart, indicates that the connection allocation process is inadequate and lacking any coordination; the landfall for Hornsea 3's project being much closer to the substation at Necton which was allocated to Norfolk Vanguard & Boreas and vice versa (of note: the cable trenches actually cross each other!) A Government body to control and review how the uptake of renewable energy is brought to the consumer, with powers within the National Infrastructure planning laws, is urgently required.

M Mahony

The urgent need to invest in the transmission system for renewable energy generated offshore, principally offshore wind, to stop the current unsustainable, environmentally damaging, uncoordinated, inefficient and long-term uneconomic approach which is currently being taken by National Grid and the energy sector.

National Grid and the offshore wind developers have failed to strategically plan and invest in the transmission infrastructure needed both onshore and offshore to deliver the power generated offshore to the parts of the UK where it is required. This is despite the need for such a strategic plan and investment being identified at least 10 years ago. The failure to plan and invest has led to the uncoordinated and inefficient approach of each project having its own transmission infrastructure which is causing unnecessary environmental damage onshore not least because the onshore infrastructure required to support windfarms has become increasingly large as the generation capacity of offshore windfarms has increased. The current approach is unsustainable and may well prevent the UK achieving its 2050 net zero carbon targets.

For example, in East Anglia there are or are proposed multiple cable routes and large substation complexes connecting multiple offshore windfarms to the National Grid onshore. In Suffolk this has led and will lead to the Suffolk Coasts and Heaths Area of Outstanding Natural Beauty being dug up at least six times. The two latest windfarm developments being brought forward by Scottish Power Renewables require an onshore substation complex covering 30 acres of land with structures up to 18 m high. Scottish Power propose to construct this on a greenfield site surrounded by listed buildings next to the quiet rural village of Friston. Further high-quality agricultural land will be lost in inadequate attempts to mitigate the landscape damage which will be caused.

Ofgem has not effectively regulated National Grid and the energy sector under the Electricity Act 1989. It and National Grid has focused on short-term economic measures whereas the Electricity Act requires a coordinated, efficient and economic system of transmission. What has been happening is neither coordinated or efficient. As to whether it is economic depends on the financial model that is being employed.

Whilst the problems are beginning to be recognised by Ofgem and BEIS as a result of efforts by local communities with the support of their MPs, the actions proposed are extremely limited and do not reflect the urgency to avoid unnecessary environmental damage or to meet the future needs of offshore wind.

For example, Ofgem's recently published decarbonisation action plan proposed the "action" of "We will explore, with government and industry, options for a more coordinated offshore transmission system to connect offshore wind generation". This is not an action it is a recipe for inaction. Further Ofgem proposes to work with National Grid on this topic. It is the combination of Ofgem and National Grid which has led to these problems, so there can be no confidence that they will come up with an effective way forward without delay.

There needs to be an independent review with independent engineering expertise to determine an effective way forward.

Further National Grid and the energy sector will only apply the drive, resources and expertise necessary to develop effective solutions as quickly as possible if the current round of environmentally damaging, uncoordinated, inefficient and arguably uneconomic transmission approach is stopped pending the outcome of this review and the development of a sustainable way forward.

M Manakides

As a response to climate change the UK has committed to achieve net zero carbon emissions by 2050. In order to meet the country's energy needs this strategy includes the promotion of offshore wind power projects as a low carbon means of providing sustainable energy. The BEIS oversees the implementation of these projects. To date however, the BEIS has not formulated a national strategy for the transmission of offshore power into the national grid. This short coming has led to energy providers proposing large scale onshore industrial projects in wholly inappropriate locations.

As part of the Government's goal to be a world leader in offshore wind power a strategy for onshore developments must be formulated so that onshore energy hubs can be located in the brown field or industrial settings they belong. This could include the need to for an offshore ring main transmitting power to appropriate locations. If this is not done a pending environmental disaster will ensue where energy providers turn vast stretches of the countryside & coastal communities into industrial zones. This does not bode well for the country's green and sustainable credentials. Landscapes destroyed by such developments are not 'renewable'.

The Planning Inspectorate is currently reviewing an application by Scottish Power Renewables for two new offshore arrays, EA1N & EA2. The application includes a proposal for the world's largest onshore substation for wind energy to be located adjacent to the

Suffolk village of Friston. This project is badly sited with: onshore issues at the coast; 60 meter wide x 10km long cable corridor to cut through the landscape from the coast to reach the village; potential for expansion that will expand the currently proposed 35 acre development for additional projects; the cumulative effect by any future development at Sizewell; location issues with flooding, noise & light pollution, permanent removal of foot paths, disturbance of a listed setting; permanent damage to the village's environment by an industrial development; disruption to the local tourist and cultural economy with potential for permanent damage (currently worth £2 billion).

BEIS must take action now to pause all current applications and propose a coherent and comprehensive national strategy for the transmission of offshore energy into the grid. Without this, capital investment will be misspent, and the wonton and unnecessary destruction of the countryside and coastal communities will continue unchecked.

To achieve the Government set target of 40GW of offshore wind energy by 2030 there needs to be an understanding that civic institutions emblematic of our future and vital to our energy needs are to be constructed. As such, the location of these new energy hubs must be located so that they do not needlessly cause harm to existing communities. The plan size of the structures for the substation proposed for Friston would occupy a site 6 times that of the Palace of Westminster. These substations are not little green boxes at the end of the road. Proposals are of a scale of traditional power stations and are of an industrial typology. They need to be located on brown field or industrial areas.

Government policy must go beyond merely setting targets and arranging for the auctioning off of areas for development to energy providers. How and where the energy harnessed is connected, transmitted and distributed to the national grid requires a coordinated national plan in order to safeguard and enhance the environment. A coherent national plan will ensure that capital investment is properly done. This plan should be in place and presented with pride at COP 26.

R Farquharson

To investigate the lack of a joined up national power policy caused by the proliferation of privately-owned companies with different shareholder return objectives.

The proposal by Scottish Power to build a huge substation servicing their offshore wind farms in an area of outstanding beauty close to Friston Suffolk is totally unjustifiable. The only reason this is being pushed forward is the lack of cooperation with EDF owners of Sizewell. The Sizewell site already has huge spare land capacity for an additional substation complex with direct access to the National grid high transmission cables. This would result in a consolidation of the necessary infrastructure to deliver national energy needs rather than unnecessary proliferation. If ever there was an argument for nationalisation of the country's essential power industry, reducing reliance on foreign groups with different agendas, this is certainly top of the priority list.

S J A Ive

How to better manage the provision of onshore infrastructures for National Grid connections and substations.

There is a need for properly planned and coordinated project programmes to maximise efficient use of existing onshore infrastructures and facilities and design of an offshore central substation and/or ring main. All to accommodate the growing demand for offshore renewable energy.

Because the existing system of developing offshore renewables (and indeed onshore) is shambolic:

- Crown Estates appears to blithely issue licences.
- These are tendered for by multinational corporations to maximise investor returns under the guise of promoting renewable energy with minimal regard for onshore impacts—environmental, human, socio-economic—bullying government and local authorities in the processes.
- Such issues and concerns are insufficiently addressed in the early stages of planning. There seems to be little open consultation with the National Grid.
- There is no apparent co-ordination and consultation between National Grid, Local Authorities, Ofgem and a plethora of quangos and advisory bodies with diverse agendas, none of whom seem to achieve anything; the processes are opaque and favour the developer. There is no perceived accountability.
- The costs are extraordinary—we are told that 65% of our energy bills relate to Third Party Charges—what and how are these decided and allocated? To what extent do they ‘subsidise renewable projects’?

How can policy in this area be improved?

Sorry but this might read as ‘sucking eggs’.

- Define how much power is required to ‘keep the lights on’.
- Add contingencies for economic growth.
- Aim for diversity of supply to guard against undue reliance on one source; ability for storage and maintenance of supply;—which, how; cost benefit analysis.
- Greater centralisation of connectivity with existing energy facilities.
- Where necessary, consideration of brownfield sites and locations readily accessible to accommodate the demands of construction—capital and human—without disrupting local economies, especially fragile rural areas.

S Steen

Whilst in favour of renewable energy projects such as offshore windfarms, I call for a joined-up approach to the plans of how the energy produced is successfully and efficiently bought to shore and importantly directed towards the areas of greatest energy usage. Current proposed onshore grid connections and substations, their sheer scale, impact and siting. Currently there is a rush to exploit Suffolk’s potential for offshore wind energy without any strategic planning. The Government is being bounced into decisions that are inappropriate to a fragile and highly protected environmental area. National Grid appears

to be totally unaccountable hiding behind organisations such as Scottish Power. National Grid are repeatedly ignoring the fragile coastline, the ANOB, the effect on tourism (main source of income and employment) and the local communities. National Grid have not attended any public consultations.

Lack of developer accountability has resulted in SPR making so called 'non-material changes' that have CONSIDERABLE impact. SPR representatives claim Government required them to change from HVDC to AC (SPR EA1 and EA3) result being 25miles of cabling cannot carry the power currently being produced. Correct cabling at Bawdsey would have meant NO additional trenches would be required to be built.

To avoid the needless destruction of ancient woodlands, rare heathland habitats and communities. Scottish Power Renewables EA1N AND EA2 will require 9 kms of cable trenching, which undoubtedly will threaten environmentally sensitive areas including Suffolk Coastal Path, Suffolk Sandlings, ANOB, destruction of mature woodland, rare heathlands, swaths of Grade 2/3 agricultural land. Not even a brownfield site has been considered.

The tourist industry, key to economic growth, employment and wellbeing in the coastal areas will be hit both directly around the substation and cabling routes and have a major knock on effect at Aldeburgh, Thorpeness, Snape. East Suffolk, Destination Management Organisation survey forecast a potential 17% drop in tourism.

Noise and light pollution in an area of dark skies would have a fundamental effect on coastal East Suffolk. The closest development of huge substations to human habitations in the UK. Health issues, raised levels of cancers, mental health to the local population not accounted for.

Destruction of habitat of bats, birds, wildlife, flora and fauna would be permanent. Planned two trenches likely to be constructed consecutively and SPR's plans for mitigation of loss of habitat are totally inadequate the land simply could not recover from such long-term invasive treatment.

Offshore wind projects cannot be looked at in isolation, as they currently are. There is a cumulative impact from the numerous, consecutively occurring energy projects on and around the Suffolk coast. Any proposals need to consider Sizewell C possible development, Crown Estates offshore development, the extensions that are planned for Galloper and Gabbard, the Nautilus and Eurolink interconnections. Whilst all projects are considered in isolation local communities and environments are left endangered to cumulative proposals.

There has to be an overarching strategic Government plan for energy projects in East Suffolk to save it from becoming an industrial wasteland. At present there is not national strategy for the delivery of offshore power to the National Grid. The National Grid need to be required to thoroughly review their own policies and use of modern technologies to bring themselves into the 21st Century. In the short term the use of brown field sites should be used, whilst looking forward the Government policy should review offshore transmission strategies, avoiding needless destruction for short term financial gain for overseas companies.

The UK could become a world leader in offshore windfarm but currently we appear to be amateurs when compared with other European countries.

R Cooper

I would request that the Business Energy and Industrial Strategy Committee consider and make recommendations on the urgent issues around energy policy in general and offshore wind farm generated electricity in particular. The Government's energy white paper was delayed through 2019, and in 2020 various government ministers have promised its publication, but so far, the white paper has not emerged. A central plank of the white paper is expected to be proposals on how net-zero can be achieved by 2050. Realignment of generating sources will require a full review of the UK's electricity transmission network. The last National Policy Statement for Electricity Networks Infrastructure (EN-5) was published in July 2011 and in my opinion is outdated and not now fit for the purpose of making "on-the-ground" decisions on the development and siting of large infrastructure projects that fall under the heading of National Significant Infrastructure Projects.

A case in point is the proposal by Scottish Power Renewables (SPR) for substations at Friston in Suffolk to serve its off-shore wind farms, EA1-N and EA2. The lack of "joined-up thinking" on electricity infrastructure (if this project isn't stopped) will result in permanent detriment to this rural area on the edge of an AONB.

In the case of offshore wind, "ring main" options and offshore substations are already being used by European neighbours and I would contend that the fragmented private generating interests and the apparent lack of a clear long term focus for National Grid have led to a piecemeal approach to the generation of all new sources of electricity and offshore wind in particular.

An uncoordinated approach to electricity infrastructure leads to large and unnecessary impacts on the environment and local communities. Site selection should be based on sequential testing with a presumed preference for brownfield sites wherever possible. In the case of the Friston project, 9 km of cable trenching will threaten environmentally sensitive areas including the Suffolk Coastal Path and the Suffolk Coasts and Heath AONB. The works will also lead to the destruction of ancient woodland and significant areas of agricultural land.

The focus on "getting Brexit done" may have led to the delays associated with producing the energy white paper, but Britain's departure from the EU in itself brings more uncertainty for the stability of UK electricity supply making the need for a clear policy for off-shore wind and its associated infrastructure even more pressing.

I am supportive of the Government's objective to reach net-zero (100% reduction of greenhouse gas emissions) by 2050. It is a highly challenging target and needs properly constructed comprehensive policies that address the whole energy supply and usage matrix.

The Suffolk coast (if current proposals go ahead) will be home to Sizewell C nuclear power station, SPR's EA1-N and EA2 wind farms, wind farms arising from Crown Estates Offshore Wind Leasing Round 4, the planned extensions of Galloper and Gabbard

windfarms and the Nautilus and Eurolink interconnections. It is unacceptable that these projects are allowed to move forward without an overarching strategic for energy projects in East Suffolk. The Government should:

- (1) Suspend the work of PINS on the SPR and Sizewell C projects until a review has taken place to consider (in the case of the SPR project) alternative locations for the substations and in the case of Sizewell C, the financial viability of the project under currently proposed funding mechanisms.
- (2) Mandate a presumption in favour of brownfield sites for all new major energy infrastructure developments.
- (3) Specifically address the issue of the connection of offshore wind farms via a ring main with the objective of minimising the harm done when bringing supplies ashore.

N Thorp, Beach View Holiday Park

My family operate Beach View Holiday Park on the Suffolk coast between Sizewell & Thorpeness. The dash for renewables and offshore wind energy represents serious local environmental and socio-economic issues here in Suffolk. Energy policy is failing us, and it is likely to be the similar all around the UK, issues include:

- Insufficient forward planning and necessary investment to ensure minimal damage to landscapes, local economy and local communities.
- A failure to consider ‘brown field’ first when selecting locations for the massive onshore development requirements to connect offshore wind power to the grid (only greenfield sites, SSI’s & AONB were considered for Scottish Power’s EA1N & EA2 proposed substations, zero brownfield sites were identified or considered).
- A complete lack of coordination between National Grid (the network operator) and project developers to minimise local disruption.
- More than a decade of failure by National Grid to invest in upgrading existing infrastructure to prepare the grid for offshore wind e.g. Upgrading pylons at Bradwell pylons where there is the potential to create an onshore connection hub for multiple offshore wind farms on brownfield.
- Failure by National Grid who have directed numerous projects to the Sizewell/Leiston area but have consistently failed to assess and consider the cumulative effects of their network management (6+ massive projects in a small 5—6-mile radius).
- Failure by developers to bring online developments with consented output, many developments output just a fraction of the energy consented for, this calls into question CFDs and CION processes as there appears to be no penalties for failure and no scrutiny of the management and delivery of projects.

In East Suffolk each energy project represents further damage to and industrialisation in the Suffolk Coast & Heaths AONB and surrounding landscapes.

National Grid and energy developers are not showing any duty of care towards the AONB's supposedly protected landscape. 6 projects in pre-planning, consultation or at DCO, represent the biggest threat to the AONB in its 50th year. The cumulative effects, if these proposals go ahead would mean this government would be complicit in a localised economic and ecological disaster, with systematic failure to uphold protection of the Suffolk Coast & Heaths AONB, neighbouring RSPB reserve at Minsmere. Failure to protect the rural/coastal economy which relies heavily on the area's popularity as a natural/unspoilt destination, and failure to protect the rural communities that live here and have to contend with years (possible decades of construction)

Local effect on tourism and business success.

Please see Suffolk Coast DMO tourism and business survey 2019 to understand the effects on tourism/business economy: <https://www.thesuffolkcoast.co.uk/tourism-research-and-reports>

Jobs failure

Figures for job creation and value to the economy for offshore wind are dubious: <https://www.heraldscotland.com/news/18247331.outrage-wind-farm-revolution-offers-just-6-scots-ministers-jobs-forecast/>

This recent article from the Scottish Herald confirms ONS statistics; after 2 years of reductions just 1,700 permanent jobs have been created in the Scottish Offshore wind sector to date, this is just 6% of the originally estimated 28,000 jobs by 2020 – Unite union have described this as the 'renewables scandal'. The Scottish offshore wind industry is more mature than in England and highlights how jobs figures are sexed up by developers, actual permanent jobs are just a fraction of those touted by developers and their PR machine.

Galloper & Greater Gabbard 2 completed wind farms have substations at Sizewell, these are autonomous/unmanned so there are NO permanent local jobs.

Output/capacity failure

Failure to achieve capacity that is consented for is pandemic in the industry: Scottish Power's Bawdsey to Bramford cable route and substations at Bramford in Suffolk should have had 3.6GW capacity, changes post DCO resulted in capacity shrinking to 1.9 GW, a little over half consented for. This reduction in operational capacity is one of the main reasons Scottish Power require new cable routes and substations for proposed EA1N & EA2 projects. Cable route/connections could and should have been accommodated via Bawdsey to Bramford.

The Government urgently needs to act with leadership and vision. National Grid and the energy developers must to be held to account. If things go unchanged, 100s of acres of needless industrial development will go ahead in the open countryside like at Grove Wood at Friston. Infrastructure that shouldn't even be needed.

- BEIS needs to use this period to explore all options regarding energy procurement and connection of offshore to the onshore network.
- BEIS must focus on how the grid and infrastructure can be best developed for future needs with minimal localised damage. The Energy Symposium headed

by Tim Yeo back in 2010/11 highlighted the urgent need for the UK to prepare for renewables and wind energy, yet very little was done in terms of developing a master plan. Now a decade on we are where we are. This government has a window of opportunity to take action.

Things that could be explored include:

- An Offshore ring main where an offshore hub could be created to bring offshore wind farms power onshore in a coordinated way, without the need for piecemeal development & substations all over the countryside.
- Potential development of locations like Bradwell in Essex, Bacton in Norfolk or brownfield sites along the Thames estuary closer to London to create mega-substation/connection hubs for offshore wind.
- Halting new nuclear development (Sizewell C), using a portion of the land for offshore to onshore connection via a larger multi-connection substation hub. This would possibly be more acceptable in the AONB than the myopic pursuit of 2 huge nuclear reactors that could be billions over budget and if you go by EDFs Flamanville and Hinkley C years or decades over run, very possibly never commission or brought online.

The 'Offshore Wind Sector Deal' could be developed to facilitate co-ordination, achieve best practices and plan for offshore wind growth ensuring minimal cost/impact on landscapes, tourism, business and communities. However, it appears it is being taken advantage of by developers, to pursue growth and development at any cost, in Suffolk Norfolk and probably elsewhere.

W R Halford

The absence of overall planning, coordination or oversight for the connection of offshore energy (wind power and via offshore continental Interconnectors) to the UK onshore distribution network (National Grid).

Offshore wind power in the North Sea is a vital national resource not just for the next few decades but potentially centuries. Yet the development of the necessary onshore transmission infrastructure has been devoid of long-term planning and vision, leading to inefficiency and environmental damage.

Change will only come about if the sector is forced to develop a long-term solution. A strategic rethink is essential.

The Terms of Reference for the Committee must address all of the following:

- Policy
- Overall Planning across multiple energy projects into distinct connected Programmes of Work, comprising individual projects
- Governance and application of professional Programme Management
- Regulatory oversight

- The need to maximise efficiency as required by the Electricity Act while minimising onshore Environmental Impact.
- The UK (particularly East Anglia) is suffering a proliferation of planning applications from Offshore Developers, each specifying its own individual (offshore to Grid) point to point connections.
- Opportunities for efficiency in use of scarce and valuable land and cost and the cumulative impact on communities environmental are being overlooked
- The Contract for Difference process has led to scandalous under use of onshore transmission capacity
- There is no consultation or oversight of National Grid's CION decisions
- There is potential for conflict of interest within National Grid, a commercial Company undertaking both transmission planning through its monopoly position and delivery of its own Interconnector projects.
- National Grid is permitted to withhold the reports justifying its CION connection decisions
- The absence of Programme Management has led to multiple inter-related and projects coming forward, one by one
- Ineffective Change Management processes have permitted Developers to present Design Change to consented projects as 'non-material' despite the impact on other projects being massive.
- Planning Inspectorate is unable to take account of the combined impact of multiple and connected projects from Developers already assigned National Grid connections at same location, until formally scoped out in detail.

It is unclear what policies if any BEIS has in place to control the proliferation of inefficient, damaging multiple connections in the same locality.

New policies and supporting organisational and management policies must address:

- Strategic Planning
- Exploiting knowledge already gained in Europe and elsewhere that are have a planned and coordinated approach utilising appropriate technology solutions
- Oversight and Regulation
- Coordination
- Stakeholder Roles
- BEIS
- National Grid
- Ofgem *

- Planning Inspectorate
- Local Authorities
- General Public

* Ofgem has a remit to ensure economic and efficient energy provision which respects the wording and the spirit of the environmental obligations laid down in National Policy Statements for Energy and in the Energy Act 1989.

Ofgem's industry regulation role at present would seem to focus on the single objective of minimising retail price of electricity. Ofgem is the sole Industry Regulator. Its role must be expanded to having an oversight on the efficiency and environmental impact of National Grid's CION Connection decisions? GEMA must be required to support Ofgem in this respect.

NB Ofgem's 'Decarbonisation Action Plan', dated 03/2/2020, is a welcome step advance but in isolation it cannot address the fundamental issue.

L & D Chadwick

Please urgently investigate onshore connections for offshore wind energy off the Suffolk coast and consider alternatives.

We are in favour of offshore windfarms but there must be a planned, coordinated approach to delivery of power to the National Grid. Currently there is not, with National Grid channelling multiple huge industrial developments into a small and fragile part of east Suffolk, regardless of the devastating impact this will have on our beautiful landscape, communities and important tourist economy.

There has been little planning or investment by National Grid who are allowing damage to accumulate in the Leiston/Sizewell area ignoring our fragile locality. Alternatives to onshore substations are available and must be considered, including offshore ring mains and substations, already in use in mainland Europe.

We ask the BEIS Committee to urgently investigate the onshore connections for offshore wind energy proposed by Scottish Power Renewables (SPR) from windfarms EA1N and EA2. A more sustainable strategy for these onshore connections including the development of an offshore ring main should be developed.

SPR are unnecessarily threatening to destroy our unique landscapes, our peace and tranquillity, our dark skies, our lives, our communities and our tourist economy.

SPR have applied for DCOs to bring cables ashore from windfarms EA1N and EA2 through crumbling cliffs at Thorpeness, ruining up to 9km of our very special place by trenching cables through communities, pristine countryside including the AONB, rare heathland and ancient woodland, and to build permanent eyesores in the form of massive electrical substations at the tiny village of Friston thus dominating our wonderful flat landscape for miles around forever.

Brownfield sites were not considered as alternatives for the substations. SPR were duplicitous in their site selection for substations by excluding Friston from consultations until the decision had been made.

SPR are proposing this devastation because they made 'non-material changes' to their provision of energy supply from windfarms EA1 and EA3. The supply through cabling from Bawdsey to Bramford was changed from DC to AC, thereby unable to accommodate power from additional projects as originally planned. Energy suppliers should not be able to make such changes without regard to the horrendous consequences. The DCOs must be dismissed and an alternative must be found.

Offshore wind projects cannot be considered in isolation. There are already multiple windfarm connections in this part of Suffolk, currently at Sizewell, but planned extensions for Galloper and Gabbard windfarms, the Nautilus and Eurolink interconnections and the possibility of Sizewell C all threaten the wider locality. Cumulatively these energy projects will take up to 15 years to complete bringing utter disruption and devastation to a small and vulnerable part of east Suffolk during construction as well as operation. This small part of rural coast does not have the infrastructure to accommodate what's proposed.

There needs to be a coordinated strategic plan for energy projects in East Suffolk.

A national strategy for the delivery of offshore wind power to the National Grid needs to be developed.

P Chadwick

The application by EDF to build new nuclear power stations at Sizewell in Suffolk – Sizewell C and Sizewell D.

The application should not have been put in now due to the coronavirus will prevent any proper public hearings or other sessions being held in a representative lawful way.

There is growing opposition to this project as the cost of truly renewable energy such as wind farms has dropped and is now much better value than nuclear. Several other proposed nuclear projects were cancelled because they are not commercially viable. EDF is a foreign firm on the verge of bankruptcy and it would be total folly for the British government to try to bail them out by getting the British taxpayer tied into a very bad deal for decades to come.

East Suffolk relies heavily on its tourist industry. EDF says that jobs will be created but this will be outweighed by the loss of jobs and income to the tourist industry should the project go ahead and most of EDF's jobs will not be local. Minsmere Bird Reserve borders Sizewell.

From an environmental point of view, it would be a catastrophe. It's 12+ years of construction with hundreds of lorries a day, concreting works and new roads will devastate the coastal area of Outstanding Natural Beauty. The carbon emissions during this period would be massive and are ignored—as are the cost and danger of storing spent fuel for centuries to come.

No reactors of this type are working anywhere in the world having had technical and design problems.

The Government should not support any proposal to build Sizewell C and D—for environmental reasons, financial reasons, technical reasons and the lasting damage it would do to the area's population, wildlife and the vital tourist industry on this part of the Suffolk Heritage Coast—its AONB's and sites of triple scientific interest and special protected areas. Aldeburgh, Snape and other cultural centres are right on the doorstep as is RSPB Minsmere. This is not a place for massive industrialisation – quite the opposite.

The Government needs to boost proper renewable forms of energy such as wind, wave and new technology. It needs to make sure that what is already being produced is not wasted by having a proper national grid. A smart grid—so energy is only directed where it is needed and when. This needs to be in conjunction with a proper plan to connect the rapidly-expanding offshore wind energy to the national grid via an offshore ring main or offshore hub instead of the present lack of planning which forces each individual windfarm to try to build a massive onshore substation with the associated cable trench destruction. Where this development is not on brownfield sites this is just storing up trouble even where wind energy is supported, as it should be, instead of nuclear.

The Government needs to address these issues and to reject EDF's attempts to build Sizewell C and D. By the time the plant was built it would be an out of date very expensive white elephant—that had ruined the area and could not be dismantled.

Mr A Thomas

I live in the coastal area East Suffolk and have become increasingly disturbed by the role of National Grid in the seemingly arbitrary selection of connexion points to the Overhead Transmission Line System as offered to developers of offshore Windfarms and Interconnectors.

Armed with an offer of connexion, developers commence detailed planning activity for the construction of sub-sea cabling, landfall, onshore cable routes and substations. Economic benefit to the local economy is negligible as the bulk of the materiel and labour is imported: conversely, local economies mostly based on fishing, farming and tourism are damaged.

The National Grid is a privately-owned monopoly provider, and oversight of the actions of the Company by OFGEM seems to be limited to an appraisal of the 'value for money' to the electricity consumer at large, without any regard to the damage which those actions can inflict upon local communities. There seems to be no process by which the initial decision by National Grid may be challenged.

There are now an increasing number of windfarm developers seeking to exploit the southern North Sea and parts of coastal Suffolk and Norfolk. As a matter of urgency, the role of National Grid in deciding where the onshore element of these windfarms should be sited, should be the subject of close Parliamentary scrutiny. The regulatory powers of OFGEM and BEIS are in dire need of updating to prevent an equivalent of the Pennsylvania Oil Rush of the 1870's occurring here!

Appoint a Minister to have authoritative control over the actions of multi-national companies now exploiting the UK's need for clean energy (offshore) at the expense of the onshore environment.

E Thomas

Currently there is a great deal of focus on Clean Energy and Sustainable Growth. Tranquil visuals of Wind turbines produced by Energy Companies promote the vision of this. These are supported by clinical models of the manner in which the power is delivered to the communities needing the power.

Missing completely from this information on the devastating damage between the power generated and the arrival at the consumer.

National Grid and National Grid Ventures as private enterprises focus on maximum return for their investment contracting other private enterprises in the form of Energy companies to supply the means whereby the power is provided. This whole process does not happen without significant infrastructure.

Lacking in all this push for energy and low carbon emissions is the damage caused by these companies in their headlong dash to meet targets and profiteer.

Where is?

- Recognition of the ultimate destination for the power i.e. London not a rural Suffolk Village where lives will be blighted for ever.
- Management of the integration processes employed by the Power companies such as Scottish Power to ensure profit does not override quality of life.
- A unified plan for every step of the integration process to ensure efficient delivery to the consumer but not at the expense of other communities livelihoods.
- Recognition of the social economic and habitat damage incurred by communities as power companies NG and NGV push on regardless of and legacy they will leave behind for these communities.

Current monitoring used to oversee the processes used to develop and integrate Green Energy in particular Wind Power are lacking in any rigour blinded by a dash to meet targets.

National Grid and National Grid Ventures care not a jot about the communities they damage to achieve profit despite their glossy promotional packs. Power Companies i.e. Scottish Power focus on nothing except their bottom line.

The lack of accountability and authority which can hold them to account is lamentable. It is imperative that BEIS now address these matters before the destruction of our heritage and rural communities are sacrificed for the benefit of private enterprise

There is an opportunity now for UK to become a world leader in the technology needed to bring wind Energy to the fore. to build upon the emerging knowledge and plan for a strong productive energy economy. It should not be left to Power Companies with minimal track record in this field to take the lead.

A select committee should be set up to consider how best this important development in the production of power for UK and Europe should be managed and integrated to prevent the loss of habitats for the coming generations. The Government should draw upon the research produced by universities and scientists to create a coherent sustainable and cohesive plan for wind power integration.

D Steen

The way that the planning for bringing offshore energy onshore and the distribution of that energy is ad hock and piecemeal and is left in the hands of unaccountable bodies such as National Grid and foreign owned private companies such as Scottish power and EDF.

There is no coherent joined up thinking being applied by Government on this issue. (Ministers appear to come and go at the drop of a hat) There is also no oversight by Government that makes sure that the private companies involved have accountability for their actions and not be allowed to ride roughshod over local communities.

Renewable Energy is a very important long-term project to support our needs and those of our children for the future. At the moment there is no obvious long-term strategic thinking going on as to how its distribution should be managed but instead is being left in the hands of get rich quick private companies whose sole interest is profit and shareholders and not that of the country as a whole.

Save Our Sandlings

There has been no thought-out policy for connecting offshore wind farms to the grid in a 21st-century way that meets the current and future needs. The present national grid and government connection policy are not fit for purpose. New offshore wind farms are planned to be built off the Suffolk coast and there are other Energy projects proposed here. Scottish Power Renewables (SPR) are being offered connection on the Sizewell to Bramford National Grid power line route. This has resulted in them seeking to build a 30 acre 18-metre-high on-shore substation in beautiful countryside at Friston plus lorry park—with associated 32-metre-wide cable routes through areas of completely unsuitable AONB countryside. This will cause environmental damage around rare and endangered wildlife, have an adverse effect on residents, and cause economic devastation on the East Suffolk Heritage coast which relies on Tourism. We support wind power for renewable energy, but connections must be properly planned with an offshore ring main or offshore hub and connections going to brownfield sites as other countries are doing. There is growing opposition to plans to come ashore at Thorpeness and build substations the size of industrial complexes in East Suffolk countryside. Brownfield sites and offshore solutions are needed instead.

East Suffolk relies on its £210 million Tourism income. There are no local jobs from SPR's EAN1 and EA2 onshore massive substations. The cable will come through crumbling cliffs at Thorpeness and 32-metre-wide cable works carve up AONB countryside through

popular tourist and local amenity walks to nearby Minsmere Bird reserve and tourist hotspots of Thorpeness and Aldeburgh. If SPR two projects are allowed to go ahead there will be a national Grid substation also built at Friston. There is also a plan to site two gigantic Intercontinental connectors near here as well to also connect to this. SPR's two windfarms connections will not be built at the same time so there will be 32-metre-wide cable works dug at two different times making the destruction to the AONB and other areas not just temporary (four times should the connectors also come). The AONB has SSSIs and specially protected areas with rare and threatened wildlife. The Suffolk Sandlings make up 2% of the world's remaining lowland heath. The constant construction traffic and the haul roads for these projects will make tourists not want to come here and locals not want to live here. EDF are trying to build Sizewell C here at the same time.

There needs to be a fit-for-purpose Government policy for bringing ashore the energy created by new generations of offshore windfarms. The lack of joined up thinking has created a situation where each windfarm has to build its own massive onshore substation and find a National grid connection when there are not enough suitable ones. This has created a perfect storm with growing local, national, expert and high-profile protest from bodies and individuals. Substations the size of industrial complexes and 32-metre-wide cable trenches will devastate some of the country's most precious countryside. The price to local people, tourism, the environment and wildlife is just too much.

We support wind power and other proper renewables (but not new nuclear in Suffolk). SPR's originally planned to go to brownfield Bramfield but a cabling mistake ruled this out? We welcomed SPR's decision after a large outcry not to propose substations actually in the AONB as this would go against nationally important infrastructure planning law. But we think they should not be allowed to build at Friston either which is not in the AONB but involves landfall and cable route devastation through the Suffolk AONB coastal strip.

We need an offshore ring main or offshore hub and connections going to brownfield sites as other countries are doing.

N Thorp

Here in East Suffolk it is increasingly becoming evident that National Grid is out of control, directing multiple, vast industrial developments into a small area, with no consideration of the effects on the Suffolk Coast & Heaths AONB or nearby RSPB Minsmere (landscapes which are supposed to be protected in law). There are 8 & counting proposals in a 5–6-mile radius on the Suffolk Coast these include:

- Sizewell C
- Scottish Power's EA1N & EA2 windfarms (2 massive onshore substations, plus a National Grid substation north of Friston village)
- Euro link Interconnector
- Nautlius Interconnector
- Extension to Greater Gabbard wind farm ((NG has indicated connection at Leiston/Friston)

- Extension to Galloper wind farm (NG has indicated connection at Leiston/Friston)
- NG ESO SCD1 Sizewell-Canterbury Interconnector (NG has indicated connection at Leiston/Friston)
- NG ESO SCD2 Sizewell-Selindge Kent Interconnector (NG has indicated connection at Leiston/Friston).

There is no infrastructure currently at Friston! NG's proposals are unjustified, they have assumed they will get the go ahead for infrastructure without the necessary due diligence or effective scrutiny, they have not provided necessary cumulative impact studies on the AONB, the local tourism economy or on the pressure these vast projects will have on the communities that live and work here.

The site north of Friston is open countryside, there is no infrastructure present at the moment, only existing overhead pylons.

National Grid is directing connections for all these proposals to Friston (Leiston/Friston). National Grid has NOT consulted with local businesses or communities. National Grid is seeking to make Friston a connection hub by stealth, bundling their facilities using Scottish Power's DOC applications for EA1N & EA2, then proposing to connect all subsequent projects at Friston. I believe on numerous levels NG have circumvented the planning process. There has been no evidence of adequate alternatives to the Leiston/Friston location, many projects could and should have connected via Bramford north of Ipswich but this was bungled, so the Friston site which has not even been granted DCO & is unbuilt, is being proposed for numerous industrial substations/ convertor stations and connection points. It is a national scandal here in Suffolk and similar failures are happening in neighbouring Norfolk, George Freeman is trying to achieve an essential review and I hope the situation in East Suffolk will be at the top of any agenda.

It is now time to act with effectiveness to safely secure the UK's future energy needs. The Government should stop EDFs Sizewell C proposals (DCO application recently submitted, not yet accepted by PINS). We cannot have a massive nuclear build, possibly a huge white elephant on the Suffolk Coast within the AONB. The evidence of this prospect is already there given huge delays with other projects (Flamanville—welding and safety issues, reactor likely to be completed 10 years late, 4 times over budget, over €13 billion) (Hinkley C—where the finish date has already been pushed back and costs appear to be racing out of control).

- East Suffolk is in the midst of an energy rush, however policy is encouraging a 'wild west' approach to the associated onshore development. The Government must look with EDF & other energy developers at other possibilities. A 'brownfield first' policy should be written into planning law, NG & energy developers should be forced to provide/consider 'brownfield' locations for connections wherever possible, or possibly using land at Sizewell (EDF's Sizewell C site) for renewables and interconnections instead.
- Sizewell C (new nuclear) should be stopped, the site could then be considered, or put forward as an onshore connection point/hub for offshore wind farms and interconnector cables. Instead of building an unsecure Franco/Chino nuclear

reactor on the site. It could solve many of the problems finding ways to connect offshore wind and cables. Whilst it would still mean industrial build in an AONB local communities and businesses might be more sympathetic to accommodate renewable connections here than a huge destructive twin reactor power station.

The Suffolk Coast is obviously important to the UK's future energy needs however it is completely unfair to burden such a small area with new nuclear reactors as well as multiple new connection points for north sea wind farms and subsea interconnectors, all of which require huge industrial components onshore in order to connect to the grid. Without necessary action this government will be responsible for catastrophic damage to the Suffolk Coast, its AONB and the communities and business located here. Combined all these energy proposals represent the biggest threat to East Suffolk and the AONB which should be enjoying its 50th year, however as we stand this part of the Suffolk Coast is at risk of being damaged beyond repair by this Government and the energy co's.

I am both a resident of Friston and a tourism business manager Beach View Holiday Park at Sizewell, it is essential Mr Sharma and Mr Kwarteng get to grips with what is going on here in Suffolk and for more action from our MP Therese Coffey who doesn't appear to have a clue.

F Cramb

The urgent need for the developmental a coherent government strategy relating to the on-shore aspects of off-shore clean energy (wind). At present there are a series of plans for the construction of a series of massive onshore substations in Suffolk and in Norfolk. The one planned in Friston (where I live) is much larger than Wembley stadium and is in the very midst of a quiet, medieval, village, 3 miles from the Suffolk Heritage coast. The construction site will be about 50 metres from the 13th church which is the heart of the village and the border of the site comes right up to our garden fence. It will utterly decimate the village. Various Minsters have expressed support for a proper review (for example Dr Therese Coffey) but none has been forthcoming.

First, whilst everyone supports the generation of green energy no one focuses upon the dirty aspects of non-fossil fuels. A coherent government policy should require developers to consider ring mains or to land the electricity on greenfield sites, for instance near the Thames estuary.

Second, because a coherent Government review would force bodies such as National Grid to be transparent about its plans it has to develop substations in the heart of the Suffolk and Norfolk countryside. Attempts to force National Grid to reveal information have been met with absurd claims that the information is confidential or not subject to Freedom of information rights, notwithstanding that these plans are already discussed in the press and in expert documents on the internet. It is known that National Grid has plans for further vast substations in the countryside.

If green energy is to thrive, as it should, then there is a critical need for an overall policy to be developed to ensure that it is rolled out in a clean and green manner, and not one which destroys lives.

CPRE, the countryside charity

The transition to a low carbon energy supply system is underway in the UK but will require far-reaching changes in the next decade and beyond as power generation shifts, largely in a ‘decentralised’ direction. This will be mainly towards offshore wind and new rural locations suitable for deployment of wind, solar, hydro and other technologies at appropriate scales.

Long range planning for the shape of the transmission grid is carried out by National Grid ESO, via its annual Network Options Assessment. However, although this informs investment choices associated with different future energy scenarios, it is based on socio-economic analyses and is ‘blind’ to landscape and environmental impacts. This is freely acknowledged; the most recent NOA states ‘these types of decisions can only be made by the TOs or other relevant parties when the options are at a more advanced stage’.

Problematically, there then appears to be no further UK-wide, strategic analysis made of how—cumulatively—the network options may impact on rural landscapes and amenity, before a planning application is made, usually under the NSIP regime. This deserves review to enable a faster, more integrated and sustainable energy transition.

Some network investments have little environmental impact but others such as new transmission circuits (usually overhead wires carried on pylons) may have significant impacts. Likewise, undersea cabling, though generally benign, can cause impacts when linked to the National Electricity Transmission System (NETS or ‘the grid’) at coastal or peri-coastal locations, where large new infrastructure—such as substations and ‘converter’ stations, can be visually intrusive.

A prime example of cumulative, multiple energy infrastructure impacts is occurring now on the Suffolk and Norfolk coasts. Here transmission connections from new, planned supply (Sizewell; offshore wind; interconnectors) are largely un-coordinated, forcing local communities—who are generally supportive of new forms of low carbon generation—to resist development. This is unhelpful and could be avoided through earlier use of wider strategic assessment.

CPRE has just completed initial research into new grid infrastructure across England (though including cross-border issues with NI, Scotland and Wales), drawing on NOA data, the interconnector register and NSIP energy projects. This shows the problem is widespread but also that solutions exist and could be used more widely. This includes technological solutions and wider sharing and implementation of best practice.

The first step would be formally reviewing the issue. This would look at the current planning of grid infrastructure, testing the proposition that it is not sufficiently strategic in relation to:

- (1) integrating rural environmental/landscape impact issues into the framework of medium- to long-term energy policy and decision-making;
- (2) seeking gains and smart solutions to avoidable, cumulative impacts, especially where these would be focused on sensitive rural landscapes.

A BEIS inquiry, allowing the forensic examination of stakeholders in the round, is an essential democratic and deliberative step to finding consensus as to the degree of policy intervention required and at what level of planning.

The role of technology will likely play a part. For example, the feasibility of an offshore 'ring main' linking key areas of generation and energy demand and obviating new onshore overhead transmission would be a potential policy response. Such wider offshore works are increasingly seen as a beneficial design approach. Applying such an approach in the Irish Sea, for example, could obviate the need for overhead lines in or close to some of the UK's finest landscapes such as the Lake District National Park and the Anglesey Area of Outstanding Natural Beauty.

Suffolk Preservation Society

The future of energy regeneration presents challenges for Suffolk, as one of the largest providers of the nation's energy and host to a number of current and future nationally important energy projects. The Suffolk Preservation Society, which represents CPRE in Suffolk, is dedicated to protecting and promoting the county's special historic and landscape qualities, recognises the importance of such projects, not least in addressing climate change, meeting the nation's energy requirements and job creation during both construction and operational phases.

Our concern, shared by many local communities and environmental groups, is that Suffolk is expected to shoulder such projects with insufficient consideration given to their cumulative environmental and community costs. Whether it is a new nuclear power station, large off-shore wind farms, transmission lines, on-shore substations, installation of underground cabling or the impact on the local road system of huge numbers of construction vehicles, the impacts across East Suffolk will be prolonged and substantial.

The lack of a strategic and coordinated approach to energy production makes the cumulative impact of these individual projects particularly threatening. Without a Government-led holistic plan that links together all the existing and future energy projects in Suffolk, the county risks being degraded forever.

Suffolk currently faces two NSIP applications from Scottish Power Renewables for offshore windfarms of 300m turbines, requiring 9km of underground cabling through protected landscape and industrial scale substations in beautiful countryside. Meanwhile, an NSIP application from EDF for 2 additional nuclear reactors at Sizewell C is due to be submitted in May. In addition, interconnector projects Eurolink and Nautilus are expected to be brought forward by National Grid and extensions are planned for windfarms Galloper and Gabbard. The schemes are all being brought forward in an uncoordinated way with scant consideration given to co-location with existing infrastructure or assessment of their cumulative impacts on the environment, communities, landscapes and the highway network.

The substantial infrastructure needed to underpin both the construction and operational phases of these projects will harm the special qualities of a highly valued and sensitive landscape which includes large swathes of the nationally designated Suffolk Coast and Heaths AONB, a designated Heritage Coast, numerous heritage assets including Southwold

and Aldeburgh conservation areas, historic villages, and RSPB Minsmere. The economic impact on Suffolk tourist sector from the damaging effects of energy industrialisation on the beautiful and tranquil landscape, a major attraction to visitors, is a real concern.

Significant energy projects should not be delivered in isolation. An overarching national strategy is required to provide a coordinated and strategic approach to deliver the next generation of energy infrastructure across the Suffolk Coastal Belt whilst preventing irreversible harm to its character through the wave of environmentally disruptive projects being brought forward in the current developer-led, piecemeal fashion.

A review of alternative approaches to mitigate cumulative impacts should be carried out, for example:

- (1) The use of offshore transmission strategies, including offshore ring main technology, to avoid destruction of Suffolk countryside and provide long term, sustainable delivery of electricity from various providers in the North Sea zone to the National Grid. This has previously been tabled by a number of Statutory Consultees and noted by the Minister for Energy and Clean Growth (Hansard Volume 656, 11 March 2019).
- (2) A marine jetty, as used for Sizewell A and B construction, to bring in materials for various projects and reduce the impact of construction traffic on communities and the road network.

The economic costs of adopting coordinated energy delivery must be examined in the light of the very real environmental, landscape, heritage, community and tourism costs of the current adhoc approach.

V Hambley

The lack of a national strategy for the delivery of clean energy in the UK suitable for the 21st century. As it stands the Government is working on the outdated belief that nuclear power is necessary to keep the lights on—it is not—and that delivery of renewable energy such as off-shore wind power can be left to private energy firms who are able to requisition miles of our coastal and rural landscapes for onshore infrastructure. As a result, the Suffolk Coastal area, one of the finest areas of outstanding natural beauty, is facing full scale industrialisation from the combination of a minimum of 9 major energy projects over the next 12–15 years. These include two new nuclear reactors at Sizewell C, 2 massive energy buildings to support Scottish Power Renewables' EA1N & EA2 offshore windfarms, and a new National Grid connector hub. These projects are at the pre-examination stage at PINS. If the National Grid connector hub proposed under the SPR projects is consented, this would be the point of connection for National Grid Ventures' two European Interconnectors (Nautilus & Eurolink). In addition, the Galloper offshore windfarm extension project has been given a preliminary connection offer here and it seems highly likely the Greater Gabbard extension project will receive the same preliminary offer. The National Grid website also shows a Sizewell to Canterbury in Kent interconnector connecting in this area. This illustrates that the National Grid substation proposed within the SPR applications is being seen by National Grid as a strategic connection point for future projects.

The cumulative impact of the massive Sizewell C build and the large-scale onshore infrastructure for all these offshore windfarms would result in the destruction of one of the country's finest areas of outstanding natural beauty. These projects would result in the permanent loss of the Suffolk Sandlings, ancient woodlands, rare heathland habitats and the fragile eco-systems that are dependent on them. Each one of the offshore wind projects would require 32-metre-wide cable routes (the average UK motorway is 33 metres wide) from landfall to the massive energy buildings and the connector hub 6 miles inland resulting in the destruction of mature woodland and miles of grade 2 and 3 agricultural land. The scale of these industrial developments and the associated light and noise pollution would permanently and fundamentally change the essence of the Suffolk Coastal area and would destroy the tourism industry and associated business which are so important to economic growth and employment.

The Government needs to take a strategic overview of the delivery of renewable energy in the country so that all proposals are taken into account and their cumulative impact assessed. This needs to happen urgently before the offshore development of round 4 Crown Estates. It should look at how other European countries have successfully developed offshore substations so that energy is gathered offshore and brought onshore via one or two cables only. One of the reasons why onshore infrastructure has to be built so far inland is that the best strategic coastal sites are taken up by nuclear sites. If the Government called a halt to the building of all new nuclear stations which are unaffordable and leave an unacceptable legacy of nuclear waste, it would free up sites that could be used for truly renewable energy hubs fit for the 21st century. I hope the legacy of Covid-19 is that we can build back better by doing renewable energy properly whilst also protecting our fragile environment and its rapidly diminishing eco-systems.

B Chadwick

The issue most in need of examination is why no coordinated planning has been done for connecting dozens of independent windfarms to the national grid, despite plans for these windfarms having been put out to tender and being built over many years. Wind energy is very important but where is the Government policy that requires National Grid to invest in new infrastructure for it, as was done when North Sea gas was first being exploited and all gas fields connected to just five terminals for the whole country? Our coastline is eroding, global warming makes it ever more important to conserve energy and the environment, but these many projects multiply the number of trenches being dug, the substations built and cause gratuitous loss of farmland and beautiful landscapes. There is also insufficient oversight as developers are not being held to account over supposed 'non-material changes' that have huge negative consequences. And National Grid takes no account of the cumulative effect of the seven (or more) projects, which will last in total well over a decade, that they are proposing should connect to the grid in a small, fragile coastal area that depends on its AONB status and tourist economy.

The World Wildlife Fund says, "The UK is one of the most nature depleted countries in the world and more than one in seven native species face extinction and more than half are in decline". The Suffolk Sandlings is an area of beautiful, wild lowland heath, Britain's rarest wildlife habitat, of which the UK is estimated to have about 20% of the total world resource. An old British Energy board declares "This is our rainforest"! This designated Heritage Coast attracts 8 million tourists a year and the local economy depends on the

jobs they create. But the impact of SPR's digging 9 km of cable trenches dissecting the Area of Outstanding Natural Beauty, its rare habitats and wildlife corridors, and two long-distance walks (the Suffolk Coast Path and Sandlings Walk) is not counted. Successive BEIS Ministers have visited Lowestoft trumpeting new jobs but never come to see where the environmental impact and job losses will occur. Nor is the importance of nature on the health and wellbeing of visitors and residents given a 'value' despite knowing its beneficial effect on both. Substations, industrial light and noise pollution will have a devastating impact on the tranquillity so many seek here.

The Government needs new legislation requiring a coordinated national strategy for delivering power into the national grid, rather than the current piecemeal Wild West approach of numerous energy projects each destroying the environment and local communities with duplicated industrial development. Offshore alternatives for windfarms are available in Europe and should be considered urgently as a more sustainable strategy for future developments. Brownfield sites should be used for onshore infrastructure rather than destroying green fields, rare habitats and our rapidly diminishing wildlife.

The cumulative impact of consecutive AND simultaneous projects in East Suffolk need to be considered together rather than in isolation, especially where they affect a nuclear power station and its emergency plans for evacuation!

National Grid

We would like the Committee to investigate the strategic coordination of electricity infrastructure which is needed to allow us to harvest the offshore wind potential of North Sea.

The UK is home to the largest operating offshore wind capacity in the world, the shallow waters and regular wind flow of the North Sea mean this area is ideal for the development of offshore wind at scale. Offshore wind has already been a success story, it could be a real engine for growth for the UK over the longer term and will be an essential technology for the UK to meet its net zero carbon emissions target by 2050. Government has shown a clear commitment to developing offshore wind at scale. The Conservative Party 2019 general election manifesto identified offshore wind as an essential technology in driving the UK towards Net Zero and committed to reach 40GW of offshore wind generation by 2030.

The scale of future offshore wind will require major development of the transmission networks, both onshore and offshore. Maximising the potential of this natural asset to aid Britain's economic recovery will require a strategic and coordinated approach to develop this infrastructure. This will ensure that disruption to communities is minimised, while also delivering the infrastructure in the most efficient and cost-effective way, as well as supporting local economies. However, current policy and regulatory frameworks are not appropriate for delivering this required infrastructure. With the right framework, the UK can pioneer new technologies, such as multi-purpose interconnectors, and lead the way in developing hybrid and meshed grids in the North Sea with other partners. The future relationship with our geographical neighbours in Europe will also be a key aspect of this, as future grids in the North Sea that connect to multiple markets will need co-ordinated regulatory and operational systems.

Aid Britain's post-COVID economic recovery while supporting net zero.

The COVID-19 pandemic has led to an economic downturn, with the Office for Budget Responsibility (OBR) predicting a 35%⁸ fall in GDP – a situation the Bank of England believes will persist.⁹ As the Government considers the country's economic recovery from the pandemic, it is important that the net zero agenda is embedded into these plans. National Grid believes that better coordinating and planning for North Sea energy developments has the potential to stimulate our economic recovery, while at the same time putting UK on track to achieve net zero by 2050.

Minimises disruption to coastal communities today and into the future.

The North Sea off the coast of the East Coast represents one of the best places in the world to develop offshore wind, as the sea is shallow, and the wind blows a high proportion of the time. However, the scale of onshore infrastructure required to connect offshore wind to the electricity transmission grid in the coming years is causing serious concern for coastal communities along the East Coast, who are concerned by the disruption and change that these projects will bring. It is essential to secure the support of these communities as offshore wind is an essential technology for delivering Net Zero, as well as the economic opportunity these developments can bring in the near future.

More strategic approach to planning to enable scale of delivery.

Given the scale of development required to achieve net zero, where up to 75GW of offshore wind (7.5 times the connection to date) generation will be connected to the transmission network by 2050, the current ad hoc approach where each individual developer is provided with a connection offer for each individual project, is no longer appropriate. An urgent step change to a more strategic approach to develop the infrastructure is required to deliver this infrastructure in a way that minimises disruption on local communities while benefitting from the clean energy that could be developed this decade. Whilst the current policy has historically been effective in bundling costs for the individual projects and kept individual network costs low, the scale of delivery requires a more coordinated approach to deliver lower costs overall, and that supports the future pipeline of projects in addition to those connecting in the near future.

The UK's future relationship with its geographical neighbours in the EU is of key importance.

As we deploy greater amounts of offshore wind in the North Sea, the case for increased interconnection—particularly multipurpose interconnectors—to other countries grows in order to most efficiently use such large quantities of variable generation. This means that the UK's regulatory systems will need to take account of the ongoing work in this area at a bilateral and EU level. There are significant ongoing discussions at an EU level in this area and the North Sea has been identified by both the UK and EU as an area of priority for the negotiations on the future relationship.

- Government can consider how the actions it takes in the coming months could leverage the opportunities from the development of clean energy to support

8 Office for Budget Responsibility: [Coronavirus Reference Scenario](#)

9 Sky News article: [Coronavirus: Bank of England boss checks hopes of bounce-back after economic crash](#)

economic recovery. Furthermore, with the next round of seabed leasing expected to take place in Autumn 2020, National Grid believes that changes are required urgently to the planning regime. The Government should:

- establish an Electricity Network Strategy Group (ENSG), to bring together relevant stakeholders across industry to discuss and agree on a clear pathway to delivering the infrastructure required to integrate the scale of offshore wind expected in the coming decades;
- put in place the right regulatory and policy frameworks in a consistent way with relevant international partners to unlock funding and drive investment decisions, at the best cost for consumers;
- review policies for developing new infrastructure to ensure a strategic and coordinated approach for delivery;
- secure investment in offshore wind by developing a sustainable and viable vision for harnessing the immense potential of the North Sea, through long-term planning and coordination of onshore and offshore infrastructure to support deployment of offshore wind technology.

Submissions related to business, the UK Industrial Strategy and consumers

Institute and Faculty of Actuaries

In 2018, Sir John Kingman conducted an independent review of the Financial Reporting Council (FRC), the regulator for auditors, accountants and actuaries. This followed a number of high-profile corporate collapses, notably Carillion, which subsequently led to a joint inquiry by the Work and Pensions and the Business, Energy and Industrial Strategy Select Committees.

The Review recommends the replacement of the FRC with a new, independent regulator focused on the interests of consumers of financial information and with significantly expanded powers and objectives. It is suggested this new regulator be named the Audit, Reporting and Governance Authority (ARGA).

Since the review was published, some progress has been made by Government in implementing the review's recommendations. Most notably, this includes the Government's intention as per the December 2019 Queen's Speech to develop proposals on company audit and corporate reporting, including a stronger regulator with all the powers necessary to reform the sector (under the Employment Bill which is yet to be introduced to the House).

The IFoA has been engaging with HM Treasury and BEIS officials on the recommendations relevant to the regulation and oversight of actuaries. The IFoA believes that the model of professional self-regulation, subject to effective independent oversight, remains the most appropriate arrangement for the regulation of actuaries in the UK.

We understand that a government consultation, led by BEIS, is due shortly, which will set out potential regulatory frameworks for the sector to comment on. With this in mind, we

do not believe this issue warrants a committee inquiry at this stage, however we would welcome the opportunity to brief the Committee on the actuarial aspects of the review—something we are uniquely placed to provide.

Which?

There is clear evidence to suggest that some traders are exploiting the coronavirus outbreak to take advantage of consumers through profiteering. At the start of March, the Competition and Markets Authority (CMA) warned that traders should not be exploiting the coronavirus outbreak to take advantage of people through price gouging and threatened to take strong action if the problem persisted.

Following reports of profiteering on products in high demand during the coronavirus outbreak, Which? conducted two pieces of research in mid-March and early April to investigate price gouging on online marketplaces. We discovered widespread examples of price gouging and the sale of essential items on auctions, making it more difficult for people to access reasonably priced goods during the crisis.

Despite assurances from online marketplaces that they have measures in place to block and remove the type of listings we identified, simple searches reveal how some traders are still managing to list basic goods for excessive prices, suggesting that the platforms' efforts are not effective enough.

Our research found clear evidence of price gouging on basic products across eBay and Amazon Marketplace. We found consistent overpricing of household items, including cleaning products, thermometers, baby formula and tampons—products that are all currently in particularly high demand during the coronavirus outbreak. These include:

- Two 600ml bottles of Carex hand sanitizer for £40, and an auction for six 250ml bottles, clearly labelled at £1 each, with a current price of £31 from 26 bids—the reserve price from the seller had still not been met.
- On Amazon, a bottle of Dettol multi-purpose cleaner, which usually costs £2.79, was £19.31, including an £11.24 shipping charge.
- On eBay, two packs of Aptamil First Infant Milk had a “buy it now” price of £37.17, more than double the usual price. An Amazon seller wanted £99.99 for a pack of four Aptamil Profutura Stage 3 milk powder, nearly the double the price at other retailers.

Since March 2020, we have received hundreds of reports from people who have experienced price gouging on essential items, online and in-store including pharmacies. A number of people have told us that they have no choice but to buy at high prices due to underlying health conditions or needing to isolate or have had to go without essential items due to unaffordability.

Depending on how goods are being sold, traders could be breaching the Consumer Protection from Unfair Trading Regulations 2008, which prohibit unfair and aggressive commercial practices as well as misleading actions. However, we are concerned that the existing tools available to the CMA and Trading Standards are not suitable for tackling the problem of price gouging effectively.

We believe the Committee should explore whether the existing legal tools available to enforcement bodies are sufficient to address price gouging, and if they enable more timely and effective interventions to protect consumers from being exploited during an emergency period, both now and in the future.

We understand that at least 12 countries, including the US, Australia, France, Italy and Canada, have anti-price gouging laws in place or recently enacted in order to clamp down on price gouging, with enforcement action already underway. The UK is lagging behind, leaving consumers unprotected against egregious price hiking on essential items they need to protect themselves and others during the pandemic, and cope in a long-term lockdown.

Urgent government intervention is required, including bringing in new legislation to restrict unjustifiable high prices of basic products during an emergency, and to ensure enforcement bodies have the appropriate tools to address price gouging and protect consumers from being exploited during an emergency period, both now and in the future.

Which?

Throughout the current crisis the issue of consumer law being flouted in the travel sector has been the largest source of complaint and concern for consumers contacting *Which?* All flights on UK and EU carriers and all flights leaving from a UK or EU airport are protected by the EU's Denied Boarding Regulation, which requires refunds or re-routing when flights are cancelled. Similarly, the Package Travel and Linked Travel Arrangements Regulations state that if package travel is cancelled due to 'unavoidable and extraordinary circumstances', consumers are entitled to a full refund.

However, a significant number of airlines and package travel providers are refusing to meet their legal obligations to issue refunds for cancelled flights and holidays, instead only offering credit notes or vouchers for a future booking.

Which? research found that the UK's 20 biggest travel operators and airlines are openly breaking the law by delaying refunds for cancelled trips or removing customers' refund rights altogether. The analysis found that none of the UK's 10 biggest holiday companies are offering full refunds within the legal time frame, with some refusing to provide refunds altogether and instead offering customers the choice of rebooking or accepting a voucher or credit note. In addition, none of the UK's 10 biggest airlines are refunding passengers who have had flights cancelled within the legal time frame, with one airline refusing to process refunds at all.

A separate *Which?* survey conducted with members of the public between 20 and 24 March 2020 found that a quarter of those with a cancelled flight in April weren't offered a refund and 19% were waiting to hear back. For those who had a holiday cancelled with a travel agent or holiday company, a quarter weren't offered a refund and the same proportion were waiting to hear back.

Many airlines appear to be trying to avoid paying refunds to customers by only providing links to voucher request forms in their passenger communications, or by limiting people's ability to contact them—for example, removing Live Chat or other functions from their websites and directing people to already overstretched call centres.

The Package Travel Regulations state that customers whose package holidays are cancelled by the tour operator in these circumstances should receive a full refund within 14 days of the cancellation. Confusingly, ABTA has been advising travel operators that customers may be offered a 'refund credit note' instead of an immediate cash refund, despite the Package Travel Regulations not having changed, and remaining legally binding.

We recognise the travel industry is facing unprecedented strain as a result of the coronavirus pandemic, which has left many firms unable to pay out refunds on such a large scale within the legal time frame without risking going out of business. Likewise, many consumers find themselves in a very different financial situation and in need of the refund money which is now being withheld.

The widespread cancellations of flights and holidays have left thousands of people seeking refunds for trips that they can no longer take. Which? has heard from thousands of passengers who are struggling to get money back for cancelled trips with some airlines and travel companies simply refusing to offer refunds that they are legally required to.

During such uncertainty, it is important that all passengers understand what they are legally entitled to when their flight is cancelled and are able to easily claim money back where owed. It is also vital that the Government considers all options to support industry to navigate this challenging period.

This is a vital issue to be championed and scrutinised with package travel and refunds policy a responsibility of BEIS. The Committee should explore the current situation for airlines, travel operators and consumers, as well as how the right to a refund can be maintained and whether temporary changes relating to refund credit notes should be made. Furthermore, it should also consider how the Government can support companies struggling to fulfil their obligations as a result of coronavirus and on what terms a government support package should be agreed. The role enforcers should be playing, and limits of existing enforcement powers should also be examined, alongside the role of the industry body ABTA whose advice some companies have cited for not applying the law.

Government intervention is required both to support good businesses who are currently experiencing cash flow issues, and also for the many consumers who have seen their consumer rights all but suspended. To help aide policy development Which? published a 10-point plan for maintaining consumer trust and confidence in the travel sector.

We believe it is vital that consumer protections are maintained. The Government, regulator and industry must work together to ensure all consumers who are eligible to receive a refund are offered one. It is also vital that where individual airlines are failing to honour refunds, the regulator takes swift and effective action.

Some airlines and travel operators are also refusing to provide refunds to package holiday companies, complicating the holiday provider's ability to reimburse their own customers. To provide additional flexibility, the statutory 14-day refund period for package holidays should be temporarily extended to a maximum of one month. All credit notes/vouchers must be time-limited, and those offered for cancelled package holidays must be insolvency protected. The Government should establish a temporary Travel Guarantee Fund to support travel companies that are unable to fulfil their responsibilities to holidaymakers as a result of coronavirus cancellations.

Which?

The current regulatory framework is not designed to deal with many of the modern problems consumers face. The UK has one of the strongest consumer rights frameworks in the world, but the public and private enforcement systems that support it are no longer fit for purpose, nor reflective of the way people buy goods and services today. This is well evidenced by the current situation showing the inadequacy of the powers of the regulators to act, be it the CMA on price gouging or the CAA on airlines not paying refunds.

The UK needs a successful consumer enforcement system that enables consumers and responsible businesses to have confidence that consumer protection legislation is complied with both online and offline. It must also provide people with an effective route to redress when things go wrong. Which? has regularly provided evidence of the issues consumers face in the current system, alongside recommendations to overhaul the system.

Under the current product safety system, people are being put at risk because there has not been a proactive approach to identifying potential safety issues and because too little action has been taken to remove unsafe products from the market. The public enforcement system is heavily reliant on over-stretched local authorities, which is not sustainable.

In addition to ensuring enforcement bodies have effective tools and powers to incentivise compliance and reviewing the balance of responsibilities between central and local regulators, the current alternative dispute resolution (ADR) system needs an overhaul. Across many sectors, people are confused and frustrated, waiting inordinate amounts of time to have their disputes resolved in a system that is built for businesses, not consumers. ADR is mandatory in some sectors but not others, with weak decisions which are too often not binding on the business.

The opportunity needs to be taken to deliver changes that will maintain the great advances in choice and convenience, while ensuring that everyone can participate with confidence and reassurance that they will be protected from harm.

This proposed inquiry should explore how the current enforcement system works, the weaknesses in the system, whether consumer protections are fit for the digital age and what would improve the enforcement of consumer rights. As BEIS develops its Consumer Markets and Competition Command Paper it would be a very timely inquiry—hearing from the many actors in the field and interrogating how a fit for purpose and forward looking system could be developed.

To improve the current system Which? has made the following recommendations:

- Expand the consumer-enforcement remit of the CMA, creating a Consumer and Competition Authority—a strong, independent national consumer body to proactively lead on the enforcement of consumer rights and fair-trading law.
- Give stronger powers to the CMA, enabling it to take action when there are breaches to consumer law commensurate with its competition toolbox and powers; this includes introducing a wider consumer duty as part of its competition and consumer regime.

- Make the Office for Product Safety and Standards an independent arm's length consumer product safety body, operating transparently with a duty to put consumer protection and public safety first.
- Ensure there is a robust alternative dispute resolution system sitting alongside the better enforcement of consumer protection legislation. This should include single ombudsman schemes for each sector, mandatory membership for businesses in sectors where there is the greatest potential for consumer harm, and easy access for consumers via a single portal.
- Local authorities should continue to have a strong role in enforcement – but with clear accountability to these central regulators, and an effective two-way flow of intelligence and expertise.

Which?

Online platforms and marketplaces are now a regular part of everyday life for most people. The shift from high street stores to online brings greater choice and convenience than ever before. Regulations have not kept pace with the rapid change in the way people now interact with services and products online, leaving growing numbers of consumers increasingly exposed to many online harms. This includes purchasing unsafe products or being misled into buying poor quality, or even unsafe, products by fake reviews.

People are increasingly buying consumer products through online marketplaces—we recently found that 9 in 10 (91%) UK consumers have done so. These types of marketplace are no longer novel ways of shopping; they have become normal practice for millions of people. However, the protections consumers can expect when buying through more traditional retail outlets or websites, including product safety responsibilities, have not kept pace with the way many people are now shopping.

There are significant gaps in consumer protection when buying from online marketplaces. Which? testing and investigations have found a range of unsafe products for sale on online marketplaces. This includes children's toys with levels of toxic chemicals that breach EU safety limits or have already been flagged as unsafe by EU authorities; child car seats that are illegal to use in the UK; smoke and carbon monoxide (CO) alarms that failed to detect smoke and CO during standard testing and USB chargers that pose a fire or electrocution risk.

Online marketplaces are not consistently acting to prevent dangerous products from being sold on their platforms. In some cases, the sites removed the exact listings immediately upon notice of the safety issues, but within days the same unsafe products were relisted and sold on the sites. There are also concerns buyers are not being informed about product recalls or safety issues with their purchases.

These concerns are compounded by Which? research that found many people are unaware that online marketplaces are not responsible for ensuring the safety of products sold on their sites. People generally assume that the products they buy are safe. Our research found that only 21% of people were aware that online marketplaces have no legal responsibility for overseeing product safety on their sites. However, 70% of online marketplace shoppers think the law needs changing so that the sites are legally responsible.

Reviews are used by people to inform their buying decisions, online and offline. In 2015, the CMA estimated that reviews contributed to over £23 billion worth of UK consumer spending. This figure is estimated to be closer to £38 billion today with the growth of online shopping.

Reviews now play a more important role than ever in people's buying journeys. Our research shows that 97% of consumers consult reviews when purchasing products online, over three in four people trust that online customer reviews are genuine, and a vast majority rely on them to help make a purchase. However, three in 10 people have bought a product because it had excellent online customer reviews and have then been disappointed with it.

Our investigations have found fake reviews manifest in different ways, including incentivised reviews, unverified reviews from people who have not bought or interacted with the product or service in question and reviews that are generated by artificial intelligence and "web-bots".

Fake and misleading reviews are a systemic problem causing considerable consumer harm. In the last year, we have repeatedly uncovered evidence of fake reviews being traded or hosted on some of the biggest online platforms, including Amazon, eBay, Facebook and TripAdvisor.

Online review sites have been slow to act in cracking down on fake reviews and factory groups operating on their platforms. There are also currently no obligations on them to take more proactive steps to monitor and remove fake reviews on their sites or prevent them from appearing in the first place.

While there are existing regulatory frameworks in place to protect consumers from the sale of unsafe products and misleading content, these are not adequate to take into account the growing importance of online intermediaries in the consumer journey, nor do enforcement agencies have sufficient oversight or adequate tools to take action against breaches of consumer law.

The Consumer Protection from Unfair Trading Regulations 2008 (CPRs) contain a general prohibition on unfair commercial practices, requiring traders to exercise professional diligence towards consumers. They also prohibit commercial practices that are misleading or aggressive and set out 31 'banned practices' which will be unfair in all circumstances, regardless of their effect on consumers. For example, it will always be unfair where traders falsely claim or create the impression that they are not acting for their business purposes, or where they falsely represent themselves as a consumer.

The role and nature of online marketplace sales is also not adequately reflected in current product safety laws. Under the General Product Safety Regulations 2005¹⁸ (GPSR), which implement the EU General Product Safety Directive in the UK, there are clear legal responsibilities that apply to producers. The definition of producers includes own-brand producers, and importers where the manufacturer is not based in the UK. Regulations also set out more specific safety requirements for certain consumer products (e.g. cosmetics, electrical equipment and toys).

We believe that online platforms and retailers should have greater responsibility for ensuring that reviews posted on their sites are legitimate, and have welcomed the CMA's ongoing investigation, however we are still concerned about the UK's enforcement

capabilities to ensure online intermediaries support compliance with consumer laws. While the Government's Online Harms Bill is a positive step toward much-needed regulation of online platforms, there are a number of areas not covered by the current proposals where consumers online are increasingly suffering serious harm.

As such, the Committee should explore whether the current regulatory frameworks enable enforcement bodies to address issues with online platforms and intermediaries, and if they enable more timely and effective interventions to protect consumers from online harms.

Regulation is needed to strengthen the legal responsibilities of online marketplaces and ensure that public authorities have adequate powers, tools, and resources to require action from marketplaces when consumers are put at risk. The voluntary nature of current checks by marketplaces fails to recognise their role as the primary interface for consumers with the technical, as well as commercial, ability to hold their suppliers to account for consumer safety. We believe that clearer government guidance is needed while this legislation is being developed, in line with the Codes of Practice envisaged in the Online Harms White Paper.

Regulations must also be revised to reflect 21st century retail and consumer trends, to ensure that consumers are adequately protected online, including:

- Giving online marketplaces greater legal responsibility to ensure consumer products listed by sellers on their sites are safe—taking the form of a due diligence defence.
- Clarification of the actions required by online marketplaces when unsafe products are identified, giving 24 hours to remove products and responsibility for overseeing recalls.
- Enhancing transparency obligations so consumers are clear who they are buying from.

Which?

The UK is in the unique position of designing its trade policy from scratch. To be successful, it needs to have the public's trust and support. People will measure the success of trade policy decisions by how they impact everyday life, rather than by export and trade statistics. What products and services are available? What's the quality of the products we buy? How safe are they? What choices can we make? How sustainable are they? How far does the pound in our pocket go? And what are our rights, particularly when things go wrong?

It is therefore vital that the Government fully considers and explores the views and priorities of consumers as it develops and takes forward its trade policy. So far there has been little attention given to the consumer element of trade. Which? research found people think that compared to the UK government, businesses and the UK workforce, consumers are the least likely group to be represented in the future trade negotiations. Around one in five (18%) think consumers won't be represented at all.

The Committee could therefore propel this issue into the spotlight, providing the focus that has been lacking so far in the debate and policy development.

This is a key time to influence how the UK develops its trade policy for the future. An inquiry should explore what a pro-consumer agenda would look like, how the Government is accounting for consumers in developing trade policy and how trade policy is addressing consumers' priority areas of rights, standards, choice and price.

The Government must take the opportunity to build on the UK's world leading consumer rights and standards by pursuing an ambitious trade agenda for consumers in line with their needs and values including sustainable development. The UK trade agenda must look after the carefully crafted rights and standards that reflect people's expectations.

To deliver a pro-consumer trade agenda it is important that UK's trade policy:

- ensures meaningful consumer benefits, including greater choice, availability and affordability;
- maintains consumer protections and ensuring that trade negotiations build on UK values, standards and protections;
- explores options to enhance reciprocal consumer rights and enforcement with trading partners;
- develops trade deals openly and transparently and involving people in setting the objectives; and
- embeds consumer interests in the objectives of any future trade deals and through the inclusion of a specific, cross-cutting Consumer Chapter, as exists with labour and environment chapters currently.

We are consistently told how important food standards, animal welfare, data protection and the safety of consumer products are for consumer confidence. These important issues therefore need to be reflected in the UK's approach to trade policy.

The agenda should also be ambitious for the consumer using trade to deliver tangible benefits for people in areas such as cross border rights when travelling, whether using their mobiles, facing flight disruption or accessing digital services. Public support needs to be earned and maintained, and so the Government must not only fight on behalf of UK consumers through its trade agenda, but also actively involve the public as it develops its priorities.

A BEIS committee inquiry looking at this would shine a light on a side of trade that is currently not being explored but will be increasingly important for the public.

J Shepherd

Improve consumer safety by making it compulsory for electrical and electronic goods be third-party tested/certified/approved to The Electrical Equipment (Safety) Regulations 2016, Electromagnetic Compatibility Regulations 2016, The Radio Equipment Regulations 2017.

We have seen in the past five years numerous cases where products have posed serious threats to consumers on some occasions causing fatalities. The ‘Hoverboard’ crisis in 2015/2016 put thousands of consumers at risk when their chargers and battery circuits ‘exploded’ and caught fire.

Currently it is permissible to sell products onto the market by self-declaring the products safe. Enforcing third-party certification will ensure that all products are safe on the market and prevent manufacturers from making false claims. Enforcing third-party certification and approval will ensure every product on sale is safe.

Arco

The Committee should consider whether the UK’s product safety regime is fit for purpose.

The inquiry should look at unsafe or substandard PPE entering the market during the Covid-19 outbreak, and more broadly at the future of the product safety regime at the end of the Brexit transition period. There are several issues around the product safety regulatory framework which the Committee should examine. Our participation in the CE system will lapse at the end of the year, and there is uncertainty about what alignment there will be with European standards, and the shape and scope of the replacement UK Conformity Assessment.

Responsibility for product safety is divided between the Health and Safety Executive, the Office for Product Standards and Safety, and local authority trading standards. A review of the role and efficacy of the OPSS would be timely, two years after its creation.

At a time of financial pressure, there is concern about whether trading standards are sufficiently resourced for market surveillance and to meet modern product safety challenges, including more complexity in product design and the proliferation of unsafe products from online marketplaces.

This topic would be a natural progression from your earlier inquiry on home electrical safety.

Surveillance failures caused by pressures on trading standards and overlapping responsibilities of the bodies responsible for product safety, are allowing unsafe products to reach the consumer marketplace. This puts employees, users of home consumer products, and children at greater risk of accident and harm.

Most recently, this has been demonstrated through the Covid-19 crisis, which highlighted these shortcomings and allowed substandard and counterfeit PPE to enter the market due to extreme supply chain pressures.

Taking PPE as an example—standards for PPE are the responsibility of the HSE, who carry out enforcement over hazardous sites. However, HSE has struggled to maintain the requisite scale of inspections owing to funding challenges. At the same time, while on the market, most PPE is classed as a consumer product under the scope of trading standards, with the OPSS as the national level enforcer. All three these entities are under-resourced, overstretched, and have too broad a strategic focus.

Materials used in the construction of PPE may individually meet regulations, but then may be combined in products in an unsafe way (i.e. flammable insulation in a flame-retardant jacket). The only thing standing between them and consumers is a fragmented surveillance regime.

Currently, the market surveillance framework is under resourced, with no one agency solely responsible for ensuring that all consumer products on the market are safe and to standard. The issue is further complicated by the growth of digital marketplaces out of the scope of trading standards teams.

The most effective solution would be to empower a proper regulator with oversight over product safety, from production to use. OPSS, as a pure enforcement agency, would be the ideal body to take on this role (drawing on the scientists at the HSL for the evidence base), but would require structural changes and proper funding to be effective. It is currently an office within BEIS. It should be empowered as a proper independent regulator and spun off as a Non-Departmental Public Body.

Furthermore, OPSS should be better resourced to take the strain currently placed on trading standards. As a regulator they lack the capacity to engage in commercial ventures (unlike HSE), so further responsibility should carry additional resource and powers akin to an HMRC officer.

On PPE, a more effective supply chain and centrally coordinated “surge capacity” holding of approved stock would address some issues which have become evident during the Covid-19 outbreak.

London First

The future of the UK’s industrial strategy and the regional strategies that support it.

It is critical that Government and local leaders work with business in shaping a regional industrial strategy that works for all regions of the UK, including London. For the capital, this represents an opportunity to bring the different parts of London government together under an overarching policy framework for growth. This is important to ensure that London remains globally competitive post-Brexit

It is critical that the Government and local leaders work with business in shaping a regional industrial strategy that works for the whole UK, including London.

London First published an economic plan—“London 2036: An Agenda for Jobs and Growth”—in 2016, following extensive consultation with business leaders, key figures in government, economists, urban experts, and third-sector representatives. Our key themes of building on strengths, staying open for business, fuelling innovation and growth, and addressing weaknesses offer a good policy framework for growth which we ask the Committee to consider as a blueprint.

Policy Connect

To help ensure that an inclusive high-skilled and green economic recovery follows the COVID-19 pandemic, the Committee should assess to what extent the further education (FE) and skills system is effectively aligned to deliver against employer-need and strategic

goals around net-zero. In particular, it should consider whether the Government's 'levelling-up' agenda is being put into practice to allow each of England's regions to prioritise the skills they need for a rapid, green recovery.

The Committee should explore the extent to which we are making the most of our people and skills infrastructure to support the recovery. In the challenging times ahead, it is vital that a strategic approach is taken to align initiatives across different policy areas. The Committee should consider questions such as: how the National Retraining Scheme and Skills Fund supports growth sectors or responds to the Industrial Strategy's 'grand challenges'; and, how can the Devolution whitepaper and the 'Levelling-up' agenda ensure that local partners have sufficient powers and autonomous decision-making, including on where to direct funding to deliver the skills local employers need? The Committee should take evidence on the approaches in devolved nations to identify good practice and ensure a coherent UK approach to green recovery.

UK productivity already lagged behind that of our global competitors prior to the COVID-19 crisis, and economic forecasts predict significant falls in output across sectors and rising unemployment. These will impact different sectors and regions unequally. With significant economic disparities already existing between regions, skills shortage vacancies must not be allowed to hold back economic growth, especially at a time of higher unemployment.

While recent administrations have provided a welcome focus on technical education pathways, FE and skills lacks the strategic oversight apparent in the skills systems of other developed nations.

The Skills Commission's recent inquiry report *England's Skills Puzzle*, chaired by Sir John Hayes MP and Barry Sheerman MP, found England's skills system to be less than the sum of its parts. While a highly centralised funding system limits provider responsiveness to local employer-need, the system was also found to lack the strategic channels and mechanisms to engage employers on a sustained basis and ensure that national or strategic priorities, such as those around net-zero, influenced provision.

To ensure an inclusive and high-skilled green recovery which enables the UK to reap the benefits of the Fourth Industrial Revolution, skills policy must be further integrated into growth and industrial strategies.

The Government has acknowledged the importance of building a responsive skills system fit for the 21st century, most notably through the devolution of the adult education budget and the announcement of the new Skills and Productivity Board. These represent important steps in the right direction that should be built upon so as to achieve a more strategically focused skills system.

To ensure that skills policy supports the economic recovery and we have the workforce of the future it is essential that government provides a long-term stable framework for skills and lifelong learning with medium and long-term targets. The new Skills and Productivity Board should be established on a statutory basis as a non-departmental body with senior representatives from across the political divide, business, further education, local government, key sectors, and the workforce to advise and report on the Government's progress.

Greater levels of employer engagement in skills and training should be achieved through evaluating how we assess employer-need and through further devolution. Funding processes should be reviewed to facilitate greater levels of cooperation between local stakeholders and place-based decision-making around skills commissioning and delivery. Long-term thinking is needed around establishing individual learning accounts to encourage co-investment in skills and training.

Policy Connect

Since the election, “levelling up” has become a central part of government’s lexicon. While the 2020 Budget saw considerable investment promised into the regions, the majority of this spending was focused on major infrastructure projects such as motorways, arterial roads, rail and broadband roll out. Such investments are welcome but will not automatically “level up” the regions as they take time to complete and create a return on investment and need to be linked to regional and local growth strategies in order to impact locally.

The increasing R&D spend will need to be targeted to support the adoption of technology among SMEs in the regions. However, these investments must be decided upon locally by those with a full understanding of what will work best in their economies, building on existing strengths and potential, and tackling local blockages to growth. Devolving these investment decisions will be critical as part of recovery from the COVID-19 crisis which has inevitably increased central Government’s role.

The inquiry would provide clear scrutiny of the “levelling up” agenda in line with the Grand Challenges and Foundations as set out in the Industrial Strategy and drive government to make good on their rhetoric.

The disparities between the South East and London and the rest of the country are well documented with the Cross-Party Manufacturing Commission’s Level Up Industry report citing the cost as up to £40bn a year. The Industrial Strategy Council’s recent research on “levelling up” also found that regional differences in worker income are as large today as they were in 1901.

The Industrial Strategy identified five foundations upon which productivity is built: ideas, people, infrastructure, business environment and places. The places foundation of productivity is recognition that economic growth does not take place in the abstract, but that it happens in diverse places that require different strategies and plans to increase their productivity.

As the UK leaves the EU, it will lose access to the ERDF and ESF, funds directly targeted at correcting regional disparities. The replacement for these funds is the UK Shared Prosperity Fund which has the stated aim of reducing ‘inequalities between communities across our four nations’ and will be accessible by places through their Local Industrial Strategies. This change provides an opportunity for renewal and could allow government to reshape the country as more equal and balanced, but to do so will require considerable action.

This policy area is broad and has many potential opportunities for improvement, not least by pushing the Government to be clear about what “Levelling up” actually means beyond a tagline and infrastructure investment.

The area also offers the potential to increase the productivity of the regions whilst also closing the gap in worker incomes between the South East and London and the rest of the country, and in so doing make the country more equal.

However, this will only be possible if government:

- (1) Create a long-term national productivity target for industrial growth, supported by a strengthened Industrial Strategy Council, on a statutory footing.
- (2) Strengthen support for cooperation between LEP areas to identify synergies and grow UK supply chains.
- (3) Better target the increasing R&D spend to maximise return on investment in the regions of the UK outside of London and the South East.
- (4) Enable SMEs to access the technology to improve their productivity and prioritise skills that meet the demands of the sector.
- (5) Ensure UK Shared Prosperity Fund (UKSPF) is flexible and can be allocated by local leaders to ensure local and regional demands are met

Dr G Dibb, University College London (UCL) Institute for Innovation & Public Purpose / UCL Public Policy

The 2017 Industrial Strategy white paper set a new direction for BEIS by framing industrial policy around 4 ‘grand challenges’—ageing society, clean growth, AI and data, and future of mobility. This was inspired by economist Mariana Mazzucato and the UCL Institute for Innovation & Public Purpose, whose work advocates for a mission-oriented approach to innovation and industrial policy. This approach acknowledges that economic growth has both a rate and a direction, and that with the right policies, government can steer innovation towards societally relevant challenges.

To date, it’s unclear to what extent introducing the Grand Challenges in 2017 has changed activities and policies across BEIS or government, and whether, 2.5 years on, we are closer to confronting them.

An inquiry into the Industrial Strategy Grand Challenges could ask:

- How have the ‘grand challenges’ changed the way the BEIS implements industrial policy?
- To what extent do the ‘grand challenges’ foster co-operation across and within government departments?
- How are the ‘grand challenges’ governed on a strategic basis across Whitehall?
- In a time when internationally governments are confronting the COVID-19 crisis, what has the UK government learnt about tackling grand challenges?

A challenge-based approach to industrial strategy and innovation policy has seen a resurgence in interest internationally in the past few years.

In the UK, the CBI have recently recognised that such a ‘grand challenge’ framing is a vital indicator of the direction of travel of the Government to the private sector, helping to facilitate a more stable investment environment. The Industrial Strategy Council, chaired by Andy Haldane and with representation from major UK industry, believes that the challenge approach can spur more coordinated policymaking and stated that “The Council believes a much greater degree of focus, financing and policy co-ordination is needed to meet [the grand challenges] given their scale and scope” in their annual report. The European Commission has also taken on a mission-oriented approach to their innovation and research programme, Horizon Europe.

Such approaches are considered to better address societal ‘wicked’ challenges, as well as enabling (and demanding) cross-governmental working, greater engagement of citizens, anticipating challenges rather than supporting incumbent sectors, spurring technological spill-overs like the Apollo program, and “crowding-in” investment from the private sector.

The current government’s commitment to the Grand Challenges, and Industrial Strategy more widely, requires clarification. Industry needs long-term stability to be able to make investment decisions. The 2017 white paper and challenges approach was a milestone policy in this area and should be backed by the new administration to give consistency to industry.

Government could go further in using the whole gamut of policy levers to tackle grand challenges. The UCL Commission on Mission-Oriented Innovation & Industrial Strategy (MOIIS) published a report making a series of recommendations on an actionable policy toolkit for grand challenges. This ranged from standards and regulations, to procurement and financing.

Both the MOIIS Commission and the report ‘Realising Our Ambition Through Science’ from the Government Office for Science, highlighted the importance of having a robust system for managing and governing the policy response to challenges on a cross-government basis. Recent evidence to the House of Lords S&T Committee on ‘Healthy Ageing’ indicates this is not currently in place, at least for that challenge.

Furthermore, there is a need for Industrial Strategy as a whole to be recognised as a key initiative beyond BEIS, and for grand challenges to permeate government activity more widely.

Aldersgate Group

The Business, Energy and Industrial Strategy Select Committee would be well-placed to run an inquiry on economic recovery following the COVID-19 pandemic, potentially jointly with the Treasury Select Committee. With some countries slowly lifting restrictions and attempting to return to normal, economic recovery and long-term resilience will be the key questions for governments and policy makers. Any economic recovery needs to carefully balance short-term measures to stimulate the economy and employment and longer-term actions that will be needed to build a more inclusive and resilient economy. Businesses will also play a crucial role in achieving these objectives.

The consequences of a slowdown in economic activity, amplified by the uncertainty over its endpoint, have exposed the fragility of certain sectors and jobs, with significant social

impacts. With certain sectors and regions in the UK more affected than others, existing inequalities deepening as a result of this pandemic and the threat of climate change remaining as urgent as ever, the crisis response should be about rebuilding the economy in a way that delivers long-term employment, reduces regional inequalities and supports long-term competitiveness and resilience.

The Committee should therefore consider incorporating the following aspects into an inquiry on this issue:

- Impact of the COVID-19 pandemic on the economy and particular regions, including unemployment
- Impact of the pandemic on businesses and employees
- Measures that are needed to stimulate the economy, including both public investment and policy interventions
- Addressing climate change through the pandemic response
- The role of net zero emissions target and the 25 Year Environmental Plan in addressing immediate concerns following on from COVID-19
- What jobs and skills are required in rebuilding the economy?
- The Government's priorities for rebuilding the economy, including both spending and policy measures
- The need to build long term resilience as part of the recovery from COVID-19, both in terms of future pandemics and climate change

AIRTO (Association of Innovation, Research and Technology Organisations)

What drives productive growth?

The UK has seen little or no growth in overall national productivity at a time when our competitor/comparator countries have shown a significant increase in their output through improvements to their productivity. This means the UK significantly lags behind other developed countries with a corresponding effect on national competitiveness and wealth.

For a significant number of years, increasing the UK's productivity has been a key part of the Government's business policy but, in spite of this emphasis, the targeted increase has not been achieved and productivity has stagnated.

At a national, strategic level, it is vital for the drivers for increasing productivity are understood so that measures can be introduced to ensure these drivers can be implemented by industry. Equally important is the identification of what restricts UK industry from improving its performance. These drivers and restrictions may involve a wide range of factors for individual organisations including finance, management, access to innovation, and company ownership and governance. Additionally, there are wider issues to be

consider, that often involve government, such as planning horizons, regulation, skills availability, State Aid and trade agreements. Public attitudes may well impinge on what government and businesses are willing and able to do to raise productivity.

This issue is clearly of significant importance to the UK, and to the Government with the emphasis that has been made in a declared policy of increasing productivity. It falls squarely within the remit and responsibility of the Department of Business, Energy and Industrial Strategy. It is a continuing key priority for the country to increase national productivity in order to retain and increase its competitiveness and to raise the overall standard of living. This priority has now gained an even greater importance with the Covid-19 crisis, as the recovery of industrial production and economic performance begins.

An understanding of what drives productivity (and what constrains it) will allow appropriate Government strategy to be defined to support the policy and avoid the current stagnation in productivity. The definition of this strategy will lead to Government actions being put in place to support and advise industry. Those actions will involve a number of disciplines, including market led innovation, but also wider issues such as company finance, management and corporate governance where advice, support and even legislation may be needed.

It is AIRTO's view that innovation plays a key part in improving productivity. An understanding of the drivers and constraints on productivity will allow industry to exploit the innovation support provided by the organisations that AIRTO represents.

The overall Government/BEIS policy of improving the productivity of the UK is valid and, as suggested above, of increased importance in the economic recovery from the current crisis. What is needed is an improved understanding of what drives productive growth, that is specific to the UK. This will allow a wide range of specific strategies and measures for both Government and industry to be defined and enacted that will end the current stagnation in productivity. This could involve new policies on a range of areas for Government, including support for innovation, State Aid regulations, trade agreements, and regulation for new technologies. Alignment of Government departments in promoting and implementing productive growth will be vital, as will developing public support and a national culture of improvement.

Aldersgate Group

With many more working from home, the importance of broadband and internet connectivity has come to the fore. While over 95% of UK premises have access to superfast broadband, only 10% of UK premises have access to full-fibre broadband as of September 2019, which equates to around 3 million properties.¹⁰ It is clear that more needs to be made to further the rollout in order to enable the UK workforce to fully seize the opportunities that come with digitalisation and modern ways of working.

Alongside the use of broadband, there is a crucial skills gap in the UK, with over 11m UK adults and 10% of the UK workforce lacking basic digital skills, costing the UK economy an estimated £63bn a year.¹¹ This is a significant challenge in terms of making the workforce ready for jobs of the future, and it reinforces existing inequalities.

10 The House of Commons Library (2020) [Full-fibre broadband in the UK](#)

11 Ibid.

There are also environmental benefits which come with investing in ICT and broadband. BT has projected that investing in ICT could reduce the UK's carbon emissions by an estimated 24% a year in 2030.¹² Current progress has been achieved by switching to renewable energy, improving building energy efficiency, and upgrading the fleet to electric vehicles. Investing in broadband and ICT is also crucial in terms of driving innovation and improving business performance.

Consequently, we suggest the Business, Energy and Industrial Strategy Select Committee holds an inquiry on the importance of ICT in the UK, the rollout of full fibre broadband and its implications for businesses and workforce. The inquiry could include the following aspects in its remit:

- Current gaps of broadband provision and other ICT and projected future use
- The policy and investment levers to facilitate the rollout of full fibre broadband and 5G
- Opportunities for businesses
- Implications for the UK workforce
- Digital literacy in the UK and connection to existing inequalities
- Future skills for current workers and future workers
- Carbon emission reduction potential from digitalisation and in the ICT sector

Chartered Management Institute

CMI would like to see an inquiry entitled “Productivity and Economic Recovery after COVID-19”. The inquiry would seek to identify the key interventions the Government could make to kickstart the UK's regional productivity and economic recovery, particularly focused on less economically well-off regions. CMI would argue that upskilling the nation's managers by teaching structured management techniques would deliver a tangible, bottom-up economic benefit with a short lead-in time, at a time the country badly needs it.

The long tail of unproductive businesses is a persistent issue in UK productivity. Given that evidence suggests the UK lags behind other countries in terms of management skills, and the link between management skills and productivity is widely acknowledged, we believe this provides a ‘low hanging’ productivity opportunity.

This inquiry would be current and pertinent as it would allow the Committee to make practical recommendations to deliver real economic benefit to the country as it recovers from the crisis. It would also allow the Committee to explore the Government's ‘levelling up’ agenda, understood as improving the productive outputs of each region in the UK. The inquiry could explore the difference between investment in physical infrastructure vs skills more generally and understand whether there are regional disparities regarding the barriers or benefits of upskilling organisation's management skills.

At a time of crisis, you really learn the value of good management.

Recent weeks have seen a rapid shift to remote working and inexperienced managers are now managing their teams remotely and through considerable disruption. They have needed to re-organise and restructure operations, particularly in key public services and social benefit organisations such as the NHS, schools and Local Authorities and have faced considerable pressure to make decisions at pace and with limited information. Others are being forced to plan for a total pause of their business in the face of a lockdown that makes operating impossible—furloughing staff, renegotiating rents and finding other lines of business to keep things going.

The Government's response to the current crisis has been to put the UK's economic activity into hibernation, in the hope that when business can resume, the whole country can get back to work immediately. Even if this were to happen, the Government should be seeking to use every lever available to it at that time to boost economic activity, secure jobs and shore up wages.

Through such an inquiry the Committee could help the Government develop a wide range of policies to provide immediate productivity boosts. We suggest there are at least three policy areas where Government could be doing more, in respect of management skills, but this list is not exhaustive:

- Champion the take up of bitesize courses within compulsory education covering, for example, challenging conversations, influencing others, problem solving and team building.
- The creation of an internationally comparable UK Management Index, so we can assess the impact of our actions in this area and start to piece together the productivity puzzle. This would be particularly valuable if it went down to the regional level.
- Expand schemes such as the Small Business Leadership Programme which are attempting to provide a cohort of SMEs with easy access to management skills to kickstart demand within the country.

W Gammon, Church of England

An investigation into the state and adequacy of management in our country. A general survey would indicate strengths and weaknesses in every sector. It might explore—and these are just indicators: how well management education performs; what structures and practices produce the best results; where can we learn from; what are the key questions to ask and address for future economic and social flourishing?

In my experience, which is now quite extensive, management and its culture have numerous weaknesses and there is an inability to examine this realistically and honestly—often because of institutional blind spots, complacency and/or inertia. This has been highlighted by the high-profile failures and struggles of substantial presences on the high street—but also, as you have pointed out, companies like Carillion, Thomas Cook, and we could add Flybe... This may be the time of great opportunity, as we emerge from the pandemic and face a deeply challenged and challenging economic landscape, where many will be reflecting on and worried about the future of business and its recovery, productivity, security and relationship to other sectors.

Above I have endeavoured to indicate need and opportunity. The exploration would itself indicate the avenues for progress and development of strategy for Government and Parliamentary action, resourcing and legislation. The target would be to build a strong, confident and above all adequate management culture and generation to create a prosperous and forward-oriented future and strong economic recovery. The lessons learnt would have application across the board—equally helpful for the public and charitable sectors—where my working life constantly presents the lost progress and structures that require attention. A broad and frank inquiry could provide the strategic springboard for the new and renewed management we so obviously require.

Dr P Dodds, University College London

The Government is funding a range of research centres as part of the industrial strategy to build links between industry and academia. These build on the academic research centres that have been funded for many years by research councils. It would be useful for the Committee to examine how these work in practice, to what extent they successfully enable industry to build on basic research, and how they could be improved in the future.

Historically, the UK has not been as successful at commercialisation and development as it has been at basic research. The Industrial Strategy aims to address this through large targeted investments at specific industries. It is not clear that innovation research centres have successfully addressed this issue to date.

There are a range of views about the appropriate design of innovation-support institutions, ranging from the USA's Advanced Research Projects Agency (ARPA) to Germany's network of Fraunhofer Institutes and the UK's Catapult centres. An independent review is needed to understand the benefits and drawbacks of different approaches, and to consider how the UK could improve the design and structure of research centres in the future.

In some cases, research centres have funding only for academics and are designed to run alongside innovation programmes. It is not clear that these are more than the sum of their parts.

It is important that the impact of UK research funding is maximised. With a large increase in research funding planned by the UK Government, it is likely that the number of research centres will increase, as UKRI does not have the capacity to administer a large increase in small grants. A review would therefore be timely.

Key issues for centres include the structure to enable collaboration with industry, the relative levels of public and private funding and control, the degree of autonomy from Ministers, and the timescales over which funding is committed. For example, centres are generally funded for up to five years, which might be too short for some longer-term areas with large growth potential such as hydrogen energy systems. While much effort is focused on identifying areas for innovation funding, it is less clear that a lot of thought has been put into the design of research centres to ensure their success.

There will always be some misalignment between industrial growth opportunities for exports, the future needs of the UK, and UK industrial and academic comparative advantage, and it is not clear that Government balances these areas.

AIRTO (Association of Innovation, Research and Technology Organisations)

The UK has an extensive Innovation, Research and Technology (IRT) infrastructure with world class facilities, expertise and staff. This infrastructure covers a wide range of technologies and industrial sectors and comprises a range of different types of organisations such as Government laboratories, Research and Technology Organisations (RTOs) with the subset of more recent Catapult Centres, university applied research centres, and privately-owned research organisations.

This infrastructure's main focus is on providing research and innovation support to Government, the public sector and industry, but it also has a wider technical, innovation and public safety role beyond this. This wider role has been vital to the UK at times of national crisis (the Grenfell Tower fire, foot and mouth epidemic, Boston Manor viaduct safety, and nuclear plant closures for example). The sector is used also by many other parts of the world, helping the UK to export R&D services and expertise.

However, there is no systematic way of identifying which of this range of IRT organisations to turn to when faced with tackling a national crisis, to mobilise their support. This became particularly apparent in the current Covid-19 crisis as the Government had to resort to a call for organisations to register where they could help, rather than having a prepared database of IRT sector capabilities. These IRT resources are vital to addressing crises and playing a key role in recovery. They offer independent, objective expertise, and are well used to advising on and implementing the practical aspects of science and technology.

The issue is to investigate how better prepared the Government can be for using the extensive IRT resource at times of national crisis.

Major and minor crisis will be a regular occurrence in any country, and it usually falls to government to take the necessary steps to address these crises. Within the UK, the responsibility often partly or fully falls on the Department of Business, Energy and Industrial Strategy. A full understanding of the resources and capabilities immediately available to the UK Government is a key part of having an effective, practicable plan for reacting to crises, taking the required steps to address an individual crisis, and providing appropriate post-crisis support.

Going forward, post Covid-19, we should review how well prepared the UK is for the next such, similar or different, type of expected or unexpected crisis.

Government policy could be improved by having a clear strategy and plan of how to use the full capability of the UK's IRT sector, alongside university and industry resources, in a national crisis and post crisis. This will involve obtaining and maintaining a full understanding of the capabilities of the individual organisations comprising the IRT sector, their resources, and how to mobilise rapidly when necessary. This could be undertaken by BEIS or GOS staff or contracted to a third-party organisation. The 'owner' of the task will need to maintain up to date knowledge and key contacts in each organisation. The capabilities and contacts for each IRT organisation should be regularly reviewed to ensure effective and efficient preparedness.

Photonics Leadership Group

We encourage the BEIS Committee to look at the balance of the industry strategy between support for enabling technologies and support for vertical market focused challenges.

The current strategy of focusing on a finite number of high-profile vertical market areas risks undermining the UK vibrant enabling technology sector including the UK £13.5bn photonics industry.

A focus on support for projects from the industrial strategy with short term impact will cause a rise in dependency on importing key enabling technology. By not recognising the key role and strength of UK business in enabling technology and encouraging the development and adoption of more enabling technology in the UK we hamper UK productivity and are not making best use of our existing business assets.

Barriers to entry are built at the system level though the use of novel enabling components. To keep the highest value UK products competitive, we need to ensure UK industry strategy supports the development of enabling technologies that give those high-profile products long term differentiation and whose supply is secure in the UK.

Without a rebalancing the industry strategy, the UK will find itself in a future where it is dependent on importing an ever-increasing number of the key enabling components for high value manufacturing, the digital economy and the functioning of society. A future where we can no longer capture UK enabling strengths and where we risk assembling the innovations of others.

It takes time and considerable knowledge to develop robust reliable resilient enabling components and sub-systems to the level they can be confidently integrated into more complex products. E.g. light-based ranging systems into autonomous cars, or laser welding into the production line. These are skills we have in the UK that are being neglected and risk decline when the focus in the industry strategy is on rapid time to impact.

Very often we find there are highly focused international competitive UK suppliers, that potential UK users are unaware of, or key components manufactured and exported from the UK, before being reimported higher up the value chain. The enabling industries need focus in the industry strategy to help build more integrated UK based supply chains. Not only will this make the UK more resilient, it supports an improving trade balance, makes UK industry more environmentally sustainable and, by keeping supply chains close, makes UK industry more agile.

The industry strategy needs to balance support and recognition of enabling technologies with vertical markets. Vertical markets are of course important, but the current industry strategy is imbalanced and requires subtle realignment. For example, making it clear that a fraction of industrial strategy funds should be allocated to development of key enabling components, such as photonics, in each market focus area would go a long way to ensure more balanced investment and engagement with enabling businesses. This will help avoid situations, such as those seen in 5G deployment, by ensuring more enabling UK component suppliers are available alongside global competitors.

The industry strategy should also recognise the time and resource it takes to develop enabling components and where the UK has strength in this area. Development times

can be as long, if not longer than the higher-level system development, especially when high levels of robustness and resilience must be demonstrated. But those higher-level higher profile market focused systems and products cannot advance without advances in the enabling industries. This therefore also requires balance in the expectations of when industry strategy interventions will have impact. Not everything can be done in two years and when it is any differentiation may be short lived.

Skills strategy also needs greater focus on enabling industries, not only to support the continued growth of, e.g. the photonics industry where foreign investment continues to come to the UK because of those skills, but to support the wider, faster and more efficient integration of key enabling hardware in wider industry.

AIRTO (Association of Innovation, Research and Technology Organisations)

Anticipatory Regulation and its impact on Innovating Businesses and Public Safety. There are two strands:

- (1) Circumstances pertaining to areas that are subject to existing regulation but have since undergone changes in technology and business practice which render the existing regulation mismatched to newly emerged business approaches and practices. This results in the regulatory environment acting as a brake on business growth and UK competitiveness. A recent example is to be found in the space sector, concerning UK licensing requirements relating to the launch and close-proximity operation in orbit of new generations and large numbers of small satellites. These are technologies in which the UK is a global leader.
- (2) Situations where there is an absence of a regulatory framework within which to deploy innovative products and services, resulting in hesitancy on the part of both innovating businesses and their investors. This again impacts on the potential for UK growth and competitiveness. The current example is the application of new AI-based products and services. Here there are significant uncertainties concerning potential legal liabilities and public (non)acceptance of such services in the light of worries about the ownership, protection and privacy of the data on which such systems rely for their operation.

This issue falls squarely within the remit and responsibility of government and it impacts all eight of the topics of interest cited in the guidance document (as well as Access to Finance for innovating businesses and FDI from overseas businesses seeking to locate in the UK). There are also important implications for cross-departmental collaboration and policy alignment, as well as for international relations (including trade).

If these issues are not addressed the Government risks failing to reap full potential value from its investment in science and technology and from other initiatives. These include the major infrastructure projects and the drive for foreign investment. This will all negatively impact growth, jobs and the ability of the economy to reach net zero carbon and other key targets in the longer term.

Regulation needs to keep pace with innovation and to anticipate wherever possible the resulting changes to products, services, business practices and markets. It is important also to anticipate likely changes to consumer and supplier behaviour.

A notable example from recent decades where this has not happened is the internet.

In order to address this issue, there needs to be synergies between regulation (existing and needed) and emerging new technologies. To achieve these synergies will require both horizon scanning and consultation by BEIS, to identify the effect of current and the requirement for future regulation that does not inhibit new technologies and innovations being fully exploited in the UK and by UK industry. This can be viewed as regulation keeping pace with new technology, but a more effective policy will be for regulation to be used proactively to encourage the development and implementation of new technologies in the UK.

Prof. T Kenyon, University College London (UCL)

Advances in AI, big data, the Internet of Things, virtual reality, autonomous systems and robotics are set to bring major changes to the way we live and work. But will the UK be equipped with the right computing hardware to deliver on these challenges and achieve its strategic goals?

There is a need to consider the following:

- Whether conventional computing hardware is capable of delivering the many applications that are imagined for computing in the future. There are already some different new types of hardware in development, including quantum and neuromorphic computing systems.
- What characteristics are necessary in future hardware technologies (e.g. energy usage, security and speed requirements)?
- What is the Government's role in driving innovation in computer hardware technologies to realise these goals?
- How might innovations in hardware affect software development?

Climate change is climbing up the political agenda. The UK Government has committed to 'Net Zero' emissions by 2050 and is due to host COP26 in 2021. Current computing methods use significant amounts of electricity: Data centres are responsible for a significant and growing proportion of global electricity usage. In the medium term, the energy requirements of data centres will become unsustainable.

Alongside climate change, other challenges facing conventional computing systems include latency and privacy, particularly when data is sent to and stored in the cloud. The Industrial Strategy committed to having self-driving cars on roads by 2021, and in its recent response to the Online Harms consultation, the Government restated its aspiration for the UK to be 'the safest place to be online'. Privacy and security of computing systems is central to achieving such goals.

Conventional computers are reaching their limits in efficiency, speed and power. The number of transistors on a silicon chip, and therefore processing power, has been doubling about every two years (termed 'Moore's Law'). Over 10 billion transistors can fit onto a chip, but physical limits have meant fitting in more is becoming increasingly difficult: Moore's Law is coming to an end.

These challenges offer a timely opportunity to consider how the Government's strategic goals align with technological innovations. Government has a role in ensuring innovation policy supports the development of desirable computing hardware. This could take a 'mission-oriented' approach where policy is based on problem-specific societal challenges.

Government should also consider how innovation in hardware might have implications for software developers if new hardware is incompatible. Future hardware and software investments could consider desired outcomes and the technology required to achieve them. For example, autonomous vehicles requiring split second decisions may run best with neuromorphic hardware (due to reduced latency), whereas cryptography applications suit quantum computing. Complex calculations will still work best on a conventional computer.

This inquiry could consider the role of emerging computing technologies in the UK and investigate how science and innovation policy can place the UK in the best position for achieving its strategic goals, from decarbonisation targets to digital security ambitions. It could address the following:

- What characteristics or attributes do we want from computing hardware in the next ten years and beyond?
- What new types of hardware are currently in development and what benefits do they offer over conventional computing?
- How can government steer innovation towards achieving these goals and provide an opportunity for the UK to take the lead in this area?
- How can the UK work with international partners to support hardware developments?
- What are the implications for the UK's decarbonisation policy of not addressing the need for more energy-efficient computing hardware?
- What are the UK's capabilities in this field? How can they be supported?

Dr A R Goncalves de Pinho, University College London (UCL)

Technological and scientific advancements have the potential to transform our society and new disruptive technologies such as algorithmic decision-making, personalised medicine and autonomous vehicles are accelerating the pace of change. Regulators need to balance the risks they might pose for society, with the potential benefits. Traditional regulatory approaches work fairly well for less disruptive technologies and more stable industries. However, they struggle to cope with dynamic and multidisciplinary fields.

An inquiry could look into new approaches to regulating rapidly emerging and disruptive technologies. "Anticipatory and adaptive regulation", which is designed to respond to evolving markets in a proactive, iterative and participatory way, has been proposed as a way for regulators to respond to these technological and scientific disruptions.

Anticipatory and adaptive approaches are increasingly being used in different fields, and around the world. Methods such as sandboxes and testbeds are examples of strategies tried in the finance and autonomous driving sectors. Other tools include use of open data,

formal experiments and new methods of public engagement. We believe the Government has a role to play in the evaluation of those programs and in promoting a test-and-evolve mindset that will make industries more resilient and better equipped to cope with uncertainty. Anticipatory and adaptive regulation integrates different stakeholders' perspectives right from inception into regulatory processes. It is a future-facing, inclusive approach that aims to identify challenges in a timely fashion and fast-track disruptive innovation. However, it requires Government and regulators to be flexible and able to mobilise the right stakeholders quickly.

A number of UK regulators, such as the FSA and the HFEA, already do horizon scanning to identify emerging risks and opportunities that could impact their markets or regulatory systems. Unfortunately, they are still an exception.

Continuing to work towards 'event-driven' regulation leads to poor positioning of the regulatory systems to support innovation as it emerges, as well as delayed response in the prevention of public harm. The current debate on social media platforms and surveillance capitalism is a good example.

An inquiry could investigate new regulatory approaches, instruments, mechanisms and structural changes that could improve the UK's approach to regulating emerging technologies. In particular, it could seek to address the following questions:

- What are the barriers preventing effective regulation of rapidly emerging, disruptive technologies?
- How should the UK's approach to regulation change in order to be more effective?
- What approaches are other countries taking and what has worked well?

Government already does great work in horizon scanning and foresight. However, these skills need to be embedded in other institutions. Regulatory bodies need to be renewed and reimaged to facilitate collective anticipatory action. This means that regulators will need new skills. They will also need to work more closely with existing units, such as the Better Regulation Executive in BEIS.

In order to anticipate the intended and unintended impacts of new technologies, reflections need to be made on the appropriate governance framework. A closer look into new institutional mechanisms to keep regulators up to speed with the most effective tools is needed. RHC may provide one vehicle to help but will need to earn credibility in terms of its independence and capability. A commitment to investigate systemic regulatory questions around emerging technologies is crucial.

Direct incentives from Government are needed to support UK regulators to test, experiment and adopt new methods of regulation with the creation of more funds such as the Regulators' Pioneer Fund.

There is a need to create more joined-up regulation for industries that span more than one sector, moving away from individual regulatory action towards a coordinated approach between agencies. This will prove to be especially significant in post-Brexit times, where international collaboration in this field will be crucial.

AIRTO (Association of Innovation, Research and Technology Organisations)

Artificial intelligence (AI) is a fast-developing technology, with huge future benefits to Government, companies and individuals in fields as diverse as healthcare, security, food production and manufacturing. However, there are also potential risks with the technology, such as opaque decision making, discrimination, invasion of privacy, and its use for criminality. Deployment of AI has the potential to improve life and prosperity, but its development and deployment must take account of potential risks and abuse. Additionally, a legal framework must be developed that will give users and investors protection from unnecessary risks.

All those involved have to trust the technology and have confidence in its decisions. Such decisions are only as good as the data received by the system and the validity of the algorithms. Data quality standards and the testing of algorithms are technical areas which must be addressed.

It is therefore suggested that the Committee look into both the development of AI, and its control and regulation.

It is crucial that Government policy and regulation keeps pace with the rate of development and application of AI by developing both the technology and an appropriate legal and regulatory framework. This is necessary to ensure the UK can attain and retain a world-leading status in the technology, whilst providing a framework to minimise risks from misuse of the technology, to protect the rights and security of individuals, to define risk and liabilities for companies and investors, and to generate confidence in the specific decisions made by the technology. This will result in trust in the overall continuing development of digital technology and AI.

The UK Government is currently funding significant research and development into digital technology, and in particular AI. As with most new technologies, regulation will play a continuing role in its development and use. Therefore, in parallel with the Government's support for developing the technology, policy must be developed to ensure there is a balance between an effective framework for widespread use and commercial exploitation, and regulation concerning risk and liability, and to stop unacceptable, antisocial or criminal exploitation.

This should be accompanied by the development of appropriate technical frameworks and standards for the data quality and for testing and validating the reliability of AI decision making. The Department of Business Energy and Industrial Strategy has a clear role to play in developing and implementing this necessary new policy and ensuing regulatory framework. A proactive Government management of the technology will be a key part of the UK's success in being a world leader.

London First

The impact on business of the new points-based immigration system. In particular, restrictions on so-called "low skilled" workers and how will this impact businesses' ability to keep the economy at full strength.

The points-based system (PBS) will be the most fundamental change to immigration policy in the modern era and business has only ten months to prepare. There is a great

deal of work for the Government and business to do to ensure that the UK is ready for the end of the transition period, and the risks to business and the economy if we get it wrong are significant.

With the new rules planned to come into force in just 10 months, businesses need time to adapt. The Government should, therefore, create a temporary work route for key sectors like hospitality, social care, and logistics, and draw up a dynamic shortage occupation list as a strategic and fast-track system to meet labour needs in skills categories where there are critical shortages in fast growing and long-term growth areas. In addition, the Government should seek to engage more fully with business so that all sectors of our economy are ready for when the new arrangements come into force.

Daphne Jackson Trust

In the fast-moving world of STEM research, highly qualified and skilled individuals who temporarily step back from their research area quickly find themselves lagging behind their peers and, when seeking to return to work, often struggle to find research-based employment which fully utilises their knowledge and experience. This issue impacts significantly (though not exclusively) on women, who often find themselves taking a career break to bring up young children or to act as carers to elderly relatives. The deleterious effect of a career break can also be compounded by issues such as relocation, as a partner's career continues to develop, with a planned maternity break extending into a longer career break. In many cases, such a career break comes at a time when the researcher, their sponsors and hosts have invested a significant amount of time and money developing the skills and knowledge necessary to ensure that the individual is a valuable expert in their chosen STEM discipline. In order to re-enter the workplace at a level commensurate with their abilities, such individuals require more than a brief and intensive skills update, needing instead a longer and in-depth immersion in the area of knowledge in which they previously operated.

Highly trained STEM female researchers who do not return to STEM careers are a substantial loss to UK PLC. Once on a career break, there are few opportunities for women to return to research at the level commensurate with their skills and experience without help from a returners programme such as the Fellowships scheme offered by the Daphne Jackson Trust. According to the 2016 PwC Women Returners Report, 76% of professional women want to return to work after a career break, although 65% of those that do return in roles below their potential. The economic benefit of UK PLC of addressing the professional women career break penalty is calculated as providing an additional £1.7bn to the country's economic output. Given the convergence of overarching issues such as BREXIT and the challenges it represents for UK research (ref: the BEIS-commissioned Changes & Choices report), the goals of the Industrial Society (particularly the People {Skills & Education} section), the transformational impact of swiftly evolving technology on the employment market and the existential threat of COVID-19 and the demand for scientific innovation which it demands, it is essential that Government urgently identify mechanisms to leverage and scale up returners to STEM research.

Despite the benefits of bringing new perspectives to bear on entrenched problems, it can be a source of frustration that in seeking answers, Government can show a tendency to favour the new over existing exemplars, with demonstrable and auditable success rates. The Daphne Jackson Trust thus hopes that Committee will call upon organisations with

prior knowledge and expertise. The Trust has previous experience of working with select committees (2014:- Science & Technology Committee enquiry into Women in Scientific Careers; 2014:- BIS feasibility study on transitioning engineers back into engineering careers; 2013:- Sir John Perkins' Review of Engineering Skills) and would be pleased to reengage with the BEIS Committee at this critical juncture.

Specific consideration should be given to the following:

- increased Government funding and support for returners schemes, with the appropriate Minister and Department(s) championing the cause of women returners, codifying best practice, promoting initiatives that encourage sustained change, awarding success and identifying high profile champions;
- kite marks for commitment to gender equality to be established within all employment sectors along the lines of Advance HE's Athena SWAN charter;
- a voucher scheme to enable women returners to access sectoral-specific retraining, via appropriate professional bodies, trade associations and charities.

Centre for Ageing Better

Nearly one in three workers in the UK are aged 50 and over, however an estimated 1 million people between the age of 50 and the state pension age would like to be working but are not (Franklin 2014). Our increasing longevity is a huge opportunity, however policy initiatives on training, skills and employment support have not catered well for the needs of older workers with only minimal provision for those aged 50 and over. We ask the Committee to examine government's plans for employment support for older workers.

Only 10% of people aged 50–59 report they recently took part in training in 2015/16 and 86% of spending on adult education in the UK targets the under 25s (ONS 2018). As unemployment grows and the job market is impacted by Covid-19, older workers must be supported to retrain and return to work, or many will face long-term consequences of being under-pensioned in retirement. We need higher education, further education and training providers to have tailored strategies and dedicated funding for older adults to ensure we build a skilled workforce, encourage worker productivity and help grow the economy.

In 2019, just a third of over 50s who were made redundant found re-employment within three months and 1 in 5 people over 50s referred to the Government's work programme came out with a job: the worst outcomes of any age groups (L&WI 2016). During the pandemic, 3.4 million key workers are over the age of 50 and 130,000 are over 70, making up almost a third of all key workers (ONS 2020).

Older workers are the backbone of Britain's workforce and are vital to the economy and productivity of the UK. It's never been more critical that they are supported in their work and given the same access to training and reskilling. The potential productivity loss from a spike in early retirements is one that our economy cannot afford, particularly during the recovery phase of Covid-19. Spending by consumers over aged 50 was £319 billion in 2018, which is 54% of the total household consumer spending (ILC 2019). With potentially fewer jobs to go back too and a struggling economy, we urgently need older workers to be retained or retrained in the job market.

BEIS needs to work closely with DfE and DWP to pivot skills, apprenticeships, higher education and further education to suit the needs of older workers. There are opportunities with the National Skills Fund to have a wider conversation about how businesses can retain and retrain people across the life course and develop a full offer for older workers.

Strategies under development such as the Disability Strategy and the Work and Health strategy are not sufficient. There needs to be clear leadership to support this huge group of workers and align funds and policies. The proposals to introduce carers leave and consult on a day one right to flexible working are welcome steps. A tailored approach to employment support and skills training is needed alongside.

The Centre for Ageing Better is leading several projects to identify what works to get older workers back into the labour market. This includes a redundancy and retraining project with WMCA for over 50s who have been made redundant. This will compare the level and quality of training provision and increase the retention of skills and expertise within the employment sectors through redeployment.

Centre for Responsible Credit Ltd.

Insolvency and debt solutions. With the number of people in debt rising, and the levels of household debt increased dramatically by the Covid-19 outbreak, it is timely to re-examine the role of insolvency and other debt solutions to see if these are fit for purpose and correctly balance the interests of lenders and debtors and fit with wider economic and social objectives.

A range of insolvency and debt solutions are available to people in debt. Each has its advantages and disadvantages, and there is a lack of clarity for debtors as to which option is most appropriate. For example, many people enter Individual Voluntary Arrangements ('IVAs') when other options such as a Debt Relief Order would be better. A high proportion of IVAs also fail within the first two years. The failure to protect people from losing their main home in bankruptcy forces many into IVAs, which last for much longer and attract high fees. Many people also reject options that would give them at least a partial write off of their debt in favour of very long-term Debt Management Plans, despite much of the debt collected through those having already been written off by originating lenders and sold on the secondary market for a fraction of their nominal value. As we emerge from the Covid-19 outbreak, we need our insolvency and debt relief system to give insolvent households a fresh start and address the huge debt overhang on the economy. An improved system could play an important role in rebooting household consumption demand and reviving our economic growth prospects.

There needs to be an improved 'offer' of support to insolvent and debtor households, which protects essential assets such as homes and delivers fair outcomes for both lenders and debtors whilst also taking account of the need to address the large household debt overhang in the interests of the wider economy. Barriers to debt write off could particularly be removed for households whose lenders have already written off their debts on their own balance sheets and sold the debt on the secondary market. Improvements also need to be made to the Debt Relief Order process for debtors with no or very low incomes and no assets. The upper limit on debt levels for DROs should be removed. International

experience (e.g. US and Canada) also suggests that bankruptcy should not involve the loss of a debtor's main home. Finally, the length of IVAs is excessive in comparison with bankruptcy, and there have been many reports of 'mis-selling' in this market.

A Taylor

As an experienced debt adviser, I am very worried about the 'tsunami' of debt that will follow the Covid-19 crisis.

With many people currently unable to work, furloughed, made redundant etc, and the massive surge in claims for Universal Credit, it is inevitable that a significant percentage of the population are going to find themselves in unmanageable debt, above and beyond anything we have seen before. This would therefore be the optimum moment to look at the options for debt relief available and what can and should be done to improve them so that a generation do not find themselves overburdened by debt, which they simply could not have avoided.

Current options include insolvency—Debt Relief Orders, bankruptcy, Individual Voluntary Arrangements—and informal debt management plans, which include the option of debtors making £1 per month 'token offers' because they simply cannot afford to do anything else.

Creditors are increasingly taking County Court action to try to collect debts that can't be collected and issuing warrants of control to Enforcement Agents (bailiffs) when the money is not forthcoming. This does nothing but increase the debt and the suffering of debtors, while keeping the already pressured courts busy with paperwork.

As a debt adviser, I have seen a depressing change over the last few years, particularly since the economic crash and what Boris Johnson referred to today as 'the 'A' word', i.e. austerity. As debt advisers, we have found ourselves unable to offer solutions to debtors who simply cannot make ends meet. These are not debtors worried about their credit cards or loans, these are people who are having to cut back on one essential to pay for another. Sometimes the only thing I can do is offer a Foodbank voucher.

From my experience, the utility companies are still having a field day with their numerous tariffs and 'exit fees' which keep people trapped in bad deals. Council are still sending out the bailiffs to vulnerable and poverty-stricken households, regardless of whether there is any point in doing so. This is not money well spent by local authorities, who are themselves struggling to balance the books.

This must not be left to creditors, both priority and non-priority, to make up as they go along. There needs to be robust measures in place to support people coming out of this crisis, as there have been going into it.

The best solution available to a proportion of debtors is the Debt Relief Order (DRO). It is cheap for the debtor (£90), easy for the Insolvency Service to administer, but the parameters for eligibility to apply for a DRO will mean that a lot of people will not be able to access this form of debt relief. I would propose that the DRO boundaries are expanded. Does there need to be a cap on the total debt? Does a car have to be worth less than £1000? Is that practical?

IVAs -This is a self-regulated market where profit is put before common sense. There is not enough scrutiny of Insolvency Practitioners who advise customers to sign up for 5-year plans, which often involve high monthly payments that are not affordable, when a Debt Relief Order would have solved the issue within 12 months at a cost of £90.

While the process of applying for bankruptcy has been made easier the cost is still prohibitive to the average person. I am often asked how someone drowning in debt is supposed to find £680. For someone without assets, on a low income, they are effectively denied this form of debt relief.

StepChange Debt Charity

Stepchange Debt Charity is the UK's leading not-for-profit debt advice and solutions provider helping people who are struggling with problem debt. Through our subsidiary, StepChange Voluntary Arrangements, we provide IVAs to over a thousand people per year, or around 2% of market volume.

StepChange Debt Charity is asking the BEIS Committee to hold a targeted inquiry on Individual Voluntary Arrangements (IVAs). IVAs are a structured form of personal insolvency, falling under the policy remit of the Insolvency Service, an executive agency sponsored by the Department for Business, Energy and Industrial Strategy. IVAs usually last five or six years, with the promise of an element of debt write-off at the end.

IVAs can be an excellent option for people to deal with their debts. However, there are significant gaps in rules governing how people access IVAs through commercial volume providers which have created a growing risk of harm.

There are concerns that a growing number of IVAs are failing before the agreement ends, often early on, leaving tens of thousands of people thousands of pounds out of pocket, and in a worse position than when they started – and they will have started the process already in severe problem debt.

With the Covid-19 emergency creating additional financial stress for a large number of households, more financially vulnerable consumers could experience severe detriment if problems in the volume IVA market are not addressed.

Therefore, we are asking the BEIS Committee to look at three potentially harmful aspects of IVAs and the IVA market, which we believe require policy change. These three issues are:

- Problems with the conduct of IVA providers and the inadequacy of current regulatory oversight
- The practices of 'lead generators' including 'clone firms' who acquire potential IVA clients and the market for these leads
- Issues within the design of the IVA solution that create potential harm for consumers where the IVA does not complete.

The IVA

An Individual Voluntary Arrangement (IVA) is a statutory debt solution, available in England and Wales, where an individual enters into a formal agreement with their creditors within a framework of legal protections. These legal protections have important benefits for financially vulnerable consumers:

- Typically, a person entering an IVA will make monthly payments toward their debts, usually over five or six years. In some cases, people may also pay into the agreement by releasing equity (through re-mortgaging) or realising other assets.
- The amount that a person pays into the IVA will be less than the value of their debts. When the payments and other contributions due under the agreement have been made the balance of the debts are written off— an IVA is an insolvency solution and debt relief is fundamental to its purpose.
- While the agreement is in force, IVAs protect people from escalating debts by freezing further interest and charges; and creditors cannot and enforcement action on debts included in the IVA.

However, where an IVA does not successfully complete the benefits to consumers not only stop, but people can be left in a worse place than where they started:

- People do not get the debt relief—the IVA does not provide a fresh start
- They lose their protection from debt collection and enforcement action by creditors—the pressure from unmanageable debt starts up again, with all the harm this can cause.
- Previously frozen interest and charges can be re-applied increasing the amount of debt owed.
- In addition, fees paid to the IVA provider (typically around £3,000) are effectively wasted.

As IVA providers are paid from the monthly payments people make into the IVA; where the IVA does not conclude with debt relief money paid into the IVA will not reduce debts by the same amount. Where an IVA fails at an early stage, people may find that the majority of payments they have made have gone on fees, rather than paying off their debt.

So IVA's include an inherent risk of significant detriment for financially vulnerable consumers that need to be controlled effectively by competition or regulation. We believe that neither competition nor regulation are currently providing this control.

The volume IVA market

2019 saw the highest number of IVAs ever in a year – with over 77,892 new IVAs being registered. This is an increase of over 50% since 2010, at a time when other personal insolvency solutions grew more modestly or declined considerably (in the case of bankruptcy). As a result, IVAs now account for some 64% of all personal insolvencies.

The IVA market is dominated by 'high volume' firms (defined as providing more than 2% of all IVAs), with 14 IVA providers accounting for over 90% of all new IVAs registered in 2019, and just four IVA providers accounting for over 50% of all new IVAs registered in 2019.

It is therefore a highly concentrated market. There is limited headline price differentiation (IVA fees are largely set by industry agreement with creditor representatives). Consumers may be introduced to an IVA provider via online ‘lead generators’. We continue to see problems with misleading online promotions by lead generators, including infringement of StepChange and other charities’ brands. We are concerned that client acquisition through these lead generators contributes to bad practice in the commercial volume IVA sector.

As a result, IVA providers are not disciplined by competition in a way that ensures good outcomes for finally vulnerable consumers seeking help with unmanageable debts. This creates a compelling case for regulating the IVA market to ensure these consumers. However the way the volume IVA providers are currently regulated is fractured, partial and ineffective.

Regulation of volume IVA providers and Insolvency Practitioners.

Debt management services (including debt advice delivered by charities) are regulated by the Financial Conduct Authority. However IVA providers can seek an exemption from FCA regulation; in which case firms providing IVAs are not regulated as such. Insolvency law provides that an IVA can only be set up and managed by a licensed Insolvency Practitioner (IP). Oversight of IP conduct and standards is delivered by recognised professional bodies (RPB), effectively professional self-regulation.

In 2018 an Insolvency Service review of the monitoring and regulation of IPs found that in volume IVA providers the ‘IP is often an employee, supervising several thousand cases with little control or say over the actions and policies of the firm’. The review went on to highlight that RPB monitoring had found serious issues like poor advice, unclear justification for charging expenses and financial products being mis-sold to people entering IVAs. The Insolvency Service concluded that the RPBs follow up processes lacked robustness and that in ‘the majority of these cases no regulatory action has been taken’.

The Insolvency Service went on to publish in July 2019 a call for evidence on IP regulation that aimed, among other things to ‘measure current levels of confidence in the regulatory framework’. The Insolvency Service has not yet published a response, but over the past year, the RPBs have been looking at ways to improve monitoring and oversight of the IP market. That is welcome, but recent evidence of consumer outcomes suggests there is still a very long way to go.

Failing IVAs

The Insolvency Service publishes statistics on IVA outcomes, showing the proportion of IVAs that successfully complete and those that terminate early (fail to complete). This is a very important indicator of market health as a failed IVA exposes financially vulnerable consumers to the harm described above.

The most recent figures published in January 2020 shows large recent increases in the proportion of IVAs that terminated before completing. This is a cause for concern, particularly given the figures below showing an increasing proportion of IVAs failing at one, two and three years after being taken out:

- Current one-year IVA failure rates have risen from a recent low of 4.1% for 2013 registrations, to 8.4% for 2018 registrations, the highest rate since 2002.
- The 2-year failure rate: for 2011 to 2014 registrations the rate was around 11% before increasing in subsequent years to a rate of 19.5% for 2017 registrations. This is the highest rate since 2007.
- The three-year failure rate relating to 2016 registrations, of 25.1%, is the highest since 2009.

More recently, following a freedom of information request, the Insolvency Service has published figures showing IVA termination rates by different volume providers. This highlights substantial differences between providers, as the following table shows:

	Average*	Lowest*	Highest*
End of first year	8.4%	2.4%	15.9%
End of second year	19.5%	7.5%	29.1%
End of third year	25.1%	7.1%	25.8%

* Firms appearing in the data for each of these years, who were in top ten volume providers in each year

Taken together these figures suggest both a considerable decline in consumer outcomes, and a level of variation between firms that suggests the current oversight arrangements are not protecting financially vulnerable consumers.

Why look at this now?

We believe this is a very good time for the BEIS Committee to conduct a short-focused enquiry into the volume IVA market:

- There is evidence that IVAs are not working for an increasing number of financially vulnerable consumers
- This has been a focus of concern for some time but problems are still to be addressed.
- There was a 39% increase in IVAs in April 2020 compared to April 2019. With the Covid-19 emergency creating financial stress for a large number of households, more financially vulnerable consumers could experience detriment if problems in the volume IVA market are not addressed.

We believe that this enquiry could focus on two key questions:

- How improved oversight of the volume IVA market can improve outcomes for financially vulnerable IVA consumers.
- Whether the IVA itself needs to be reformed to be a more suitable product for the consumers it is now being aimed at.

J Southern

We need much more support for the development of co-operatives. Cash grants and interest free loans managed by the big five banks but with a special well-trained department in each. I worked for several years in the '90s as a business trainer, but we just need to let people get on with their initiatives.

There are now thousands of small businesses run co-cooperatively. Investors who play no part in the business are rightly only interested in profit. Reduce the incentive to make the money work this way.

Stop supporting the development of multinational businesses.

Power to Change

2024 will mark the twentieth anniversary of the legislation introducing the Community Interest Company (CICs were established by the Companies (Audit Investigations and Community Enterprise) Act 2004) and the tenth anniversary of the legislation updating the Cooperative and Community Benefit Society legal forms.

There are currently 19,000 CICs on the public register and over 6,000 Community Benefit Societies. They are run by local people, for local people. They tackle social isolation, build community cohesion and often provide services that are aligned with, or previously provided by, the public sector. We invite the Committee to review the Government's support for these types of community business and to explore what more could be done to make it easier for local communities to self-organise in this way.

The creation of CICs and the improvements to the Community Benefit Society legal form were both recommendations made in the 2002 Cabinet Office report, Private Action, Public Benefit. Each model has unique advantages.

CICs:

- are based on standard company law, including rules on insolvency, accountancy and governance;
- protect assets against distribution to members or shareholders;
- require that the company objects are in the community interest, with any changes subject to regulatory approval.

Community Benefit Societies:

- can issue withdrawable shares to the public that are exempt from expensive restrictions on financial promotions imposed by the Financial Services and Market Act 2000;
- benefit from provisions that make re-organisations, particularly mergers between societies, relatively easy to do;
- offer a democratic structure, where membership is drawn from the community and each member has one vote, regardless of how many shares they own in the society.

Both legal forms have proven popular with communities keen to take back control of the things that matter most to them – running pubs, shops, parks, libraries and much more. They are disproportionately represented in more deprived urban areas and more isolated rural areas. They are often both a response to austerity and a new vision for local economic development.

Government support for community business spans three departments and an independent regulator, with little evidence over the last two decades of significant attempts at coordination between these bodies:

- DCMS holds overall responsibility for policy on social enterprise.
- BEIS, through the CIC Regulator and Companies House, is responsible for the regulation of Community Interest Companies.
- The Financial Conduct Authority is responsible for the regulation of Community Benefit Societies.
- HM Revenue and Customs is responsible for the tax status of charitable Community Benefit Societies.

There is a strong argument in favour of closer alignment between the CIC and Community Benefit Society legal forms, either through new legislation or through consolidation under a single department. BEIS does not treat CICs in the same way as other companies. For example, its Small Business Survey reports on women-led SMEs and BAME-led SMEs but not on community-led SMEs. Similarly, the other responsibilities of the Financial Conduct Authority leave it with little capacity to be an effective regulator of Community Benefit Societies. For example, it uses the umbrella term “Registered Society” (which covers both Cooperative and Community Business Societies) for more than 70% of the entries on its public register, preventing independent scrutiny.

ShareAction

We propose the Committee examines how the Government can take action on financial risk related to the ‘S’ component of ESG (environmental, social and governance) factors. A fresh policy agenda is needed to get institutional investors engaging with companies in this area. ShareAction’s recent research has highlighted two especially pertinent aspects of ‘S’-related financial risk that need addressing: labour rights, and childhood obesity. Investors are not exerting their huge influence to improve standards in either area; the Committee should look at how Government policy can catalyse this.

Labour rights (domestic and international) and childhood obesity are issues entailing multiple financial risks. When compared to other aspects of ESG however (e.g. climate change), little has been done to mitigate them. An inquiry explicitly focused on ‘S’ factors would redress this. The Committee should look at how investors are thinking about ‘S’ factors, and why there is currently a lack of engagement. It should consider what role investors should be playing, and what good practice would look like. It should explore whether reporting standards in relation to ‘S’ issues are fit for purpose, and what the barriers to success on stewardship of assets in relation to these issues are.

Covid-19 has exposed the fragile state of our economy. It has raised questions about the welfare of those working throughout supply chains. The strain on the NHS has cast a spotlight on public health in general. The human cost of the crisis is clear; it has also starkly shown what the crystallisation of financial risk looks like. The FT reported that in the current downturn, 60% of European ESG ETFs outperformed the MSCI Europe Index. Mitigation of ESG risk is clearly in our long-term economic interest. In rebuilding the economy, BEIS must spur a greater investor focus on 'S' factors.

Many in the hospitality and retail sectors were already on low wages and insecure contracts, and Covid-19 has compounded this problem. We have seen from the labour of those still permitted to work, e.g. supermarket staff, how vital they are to keeping our economy moving. We need investors to act to rebuild a stronger economy, with a stronger workforce.

Similarly, although Covid-19 is an extraordinary event, it came amidst a long-term decline in public health. According to ICNARC, over 70% of Covid-19 hospital admissions are overweight or obese. Investors can also play a substantial role in improving the public's health.

Government policy should build on its existing work on climate-related financial risk, by improving disclosures to investors on 'S' issues. ShareAction's research has filled some of the data gaps; e.g. our 'Healthy Competition' report surveyed how UK food retailers were responding to regulatory and consumer trends in reaction to childhood obesity. The Government should drive provision of 'S'-related data, enabling investors to improve company standards.

Investors must also be compelled to use the data for engagement. The Government should introduce statutory duties of investors to be proactive on 'S' issues, and strengthen the UK Stewardship Code 2020, e.g. with a sanction mechanism for non-compliance. Our 'Point of No Returns: Part II' report, a survey of asset managers, found 61% of them had a weak/non-existent approach to human rights engagement, with a further 20% pursuing only reactive engagement. To change this state of affairs, Government policy must establish responsibilities for investors to act. This must be done in tandem with responsibilities for investee companies. New mandatory human rights due diligence reporting for companies is needed, so investor and investee work towards a common goal: to pursue better worker welfare, healthier lifestyles, and safeguarding financial assets in the long-term.

J Patel

The Government already has a competition policy on defence procurement in place, expressed in the Defence Industrial Policy published in December 2017. It states that the Government's default policy is to procure military equipment for the Armed Forces through fair and open competition.

However, this policy is not being applied as intended, not least, because MoD civil servants are hostile towards competitive markets, preferring instead to hand out uncontested single-source, development contracts on a preferential basis to the Select Few. The Government acknowledges this by saying (on p23) that 42% of new MoD contracts by value were placed via open competition in 2016/17, down from 64% in 2010/11 – which leads one to conclude that the trend is towards more of the same.

There is a suspicion that senior executives seconded from the defence industry and embedded within MoD, who remain in the pay of their employers, may have exercised their maligned influence to interfere with implementation of policy to serve their narrow commercial interests. Their presence at the heart of MoD's policy-making forums has only come about because senior civil servants are not up to the job.

Instead of facilitating a competitive market in defence goods and services, governments of all persuasions over the last several decades have succeeded only in presiding over market failure in defence procurement. The Government has admitted as much (on p23) of its DIP.

It would explain why defence contractors have failed to deliver equipment to the Armed Forces which is fit for purpose, adequately sustained in-service and constitutes value for money through-life, for as long as anyone can remember.

Markets in which the Government is the only customer matter because they happen to be some the most closed in the world, with significant barriers to entry. Indeed, such markets are more often than not, dominated by just a handful of players, the Select Few – leading to concentrations of economic power which entitles them to undue political influence.

The problem with the defence equipment market is the endless lobbying habits of incumbent businesses which insulates them from being usurped by agile and innovative start-ups, thereby preventing wealth being spread about.

This is further complicated by the fact that such markets are highly susceptible to cronyism—the nexus between the governing elite and the business elite that contrives to put the interests of the business community first, ahead of the wants, needs and expectations of ordinary citizens and the left-behind. Not least, because the twin evils of lobbying and corruption rear their ugly heads every time taxpayers' money crosses the boundary between the public sector and the private sector.

Consider this simple fact. According to statistical data cited by HoC Library Briefing Paper CBP 08486 (on p32), over 42% of MoD's expenditure on defence procurement for 2017–2018 amounting to over £15 billion was spent on just ten suppliers. What's more, this market share has remained pretty much the same over the last decade.

Even the then C&AG, Sir Amyas Morse (whose was previously Commercial Director at MoD) came around to the view that there is unhealthy market concentration in the defence industry. See his answer to Q503, oral evidence session before PACAC, HC 748, 24 April 2018.

It is hard not to conclude that this stranglehold by the Select Few has been the cause of poor performance and a lack of competitiveness – characterised by persistent delays, cost overruns and chronically weak export performance.

Market concentration has been allowed to grow unhindered over the last several decades because successive generations of MoD civil servants and Ministers haven't got a clue how free markets work, not least, because they have never "felt the heat" of competitive market forces in their lives.

The good news is that development of competition policy has now been taken out of the hands of MoD and transferred to BEIS under this pro-market, pro-competition

government—which opens up the possibility that the Business Secretary could exercise his powers to direct the Competition and Markets Authority to initiate an investigation into the condition of the defence equipment market.

Additionally, this government has now accepted that the existing competition policy used to procure defence equipment is not working as effectively as it would like, which is why it has made known its intention to publish a strategy on Maximising Competition in Defence Procurement, confirmed by the answer provided on 17 December 2018 to the written question number 198141 in the HoC.

Instead of following the usual tried-and-failed MoD-driven approach, this strategy should be led by BEIS informed by the CMA investigation with inputs from 10 Downing St, Cabinet Office, HM Treasury, FCO and MoD.

National Federation of Retail Newsagents

Within the mainland UK contracts to for wholesale delivery of news and magazines to retailers have been issued to just two companies—Smith News and Menzies Distribution. Each wholesaler has set delivery territories and is not permitted under the terms of their contract for providing a service outside of that set geographic area.

The areas defined in this “absolute territorial protection” are the same for 90% of the newspaper and magazine publishing groups.

For retailers this arrangement means that there is no choice as to who you take delivery from. Even if the other wholesaler’s depot is closer to your store or you are located on a territorial border, you have to take your supply from the wholesaler decided by the publishers and pay the service charge set by that wholesaler.

Like all monopoly situations, territorial protection has provided retailers with an expensive, poor quality service. While publishers continue to cut the margin received by retailers on sales, wholesalers continue to ratchet up the cost of having newspapers and magazines delivered to the store. Through the delivery charge, wholesalers push the costs of an inefficient delivery network onto the retailer sale in the knowledge that the latter cannot move to another wholesaler.

The level of service received by retailers is so often poor. Late supply, reduce numbers or missing or damaged copy are almost daily occurrences, causing disruption, particularly to the important home delivery market for whom there is little point of delivering newspapers that should have been on doorsteps at 6am at 10 in the morning or later because the wholesaler was “running late”.

With excessive costs and poor service, the wholesalers are damaging the independent retail sector, making news an unprofitable category, by encouraging consumers to read online and causing retailers to spend time putting things right; time that would be better spent helping customers and developing the business.

There seems to be a belief that the problems with the news supply chain are solely business to business and there is no consumer impact to be tackled. Of course, this is a mistaken

view as anything that impacts a business may well end up having an effect on customers, but it does allow unfair contractual positions to continue and be exploited by one side while allowing the other party no effective means of redress.

Even the complaints process and governing body that oversees complaints are formed by publishers and wholesalers, so in a sense they mark their own homework.

During the coronavirus emergency, the Government indicated the value of newsagents and convenience stores and the importance of people having access to newspapers. The Government needs to recognise that this is true in more normal times, not just in times of national emergency, and that, with more and more stores closing or turning away from news, if it does not take action to level the playing field, next time it looks to independent retail for support it is likely to find a much weakened sector.

Dr B Reddy, University of Cambridge

Currently dual-class stock is prohibited from the premium-tier of the London Stock Exchange. With dual-class stock, certain shares issued by publicly listed companies will possess enhanced voting rights. The structure enables founders to list their companies and divest of substantial equity (and grow the company through the issuance of further equity), while retaining control. The use of the structure has surged in recent years, in the US, particularly in the tech-sector. Many successful US companies, including Google and Facebook, have adopted dual-class stock structures, and other exchanges, such as Hong Kong, Singapore, Shanghai and Tokyo have recently relaxed their previous proscriptions of dual-class stock, ostensibly to attract the listing of high-growth, innovative companies. The use of dual-class stock can encourage flotations in the UK, especially of high-growth, tech-companies. Founders fear listing in the UK. They face a catch-22, since, with the premium-tier's one-share, one-vote requirement, it would entail them either ceding control to dispersed public shareholders (who could, indirectly, remove them from managing the company), or retaining control but, therefore, limiting the amount of stock they can sell themselves or issue for further growth. Dual-class stock solves the catch-22 and could allow a British Google to emerge.

There is a dearth of new listings on the London Stock Exchange, especially in the tech-sphere, making it more difficult for public investors to share in the success of high-growth tech-firms. Furthermore, deterrents to listing also close-off an avenue of finance and growth for successful British businesses. The lack of new flotations on the London Stock Exchange is a subject that generally deserves attention, and mechanisms to encourage further listings should be supported. Both private and listed British companies in the tech-sector are disproportionately the subject of foreign takeovers. With a weak pound, this trend is only likely to intensify, and the propensity for British businesses to follow companies, such as ARM, DeepMind and Skyscanner, into foreign ownership will continue. Dual-class stock can foster further listings, and, also, protect British businesses from predatory foreign acquisitions. There are also other strong public interest grounds to promote dual-class stock. Many recent corporate governance failings, such as at Carillion, can arguably be attributed to an inclination for boards to chase short-term profits to placate short-term orientated shareholders. Dual-class stock insulates management from the ability of public shareholders to remove them, and, therefore, enables a long-term approach to business.

It is now time to consult on dual-class stock with a view to relaxing the premium-tier prohibition. Although institutional investors fret that dual-class stock gives founders unaccountable leeway to cause their companies to take actions in their own interests to the detriment of public shareholders, research shows that in jurisdictions where dual-class stock is permitted, but which also embrace high standards of investor protection, the structure is not financially harmful to public shareholders. The insulation from short-term share price fluctuations that founders can garner through the adoption of dual-class stock enables them to take decisions in the long-term interests of their companies, which is beneficial to employees, customers, suppliers, society generally, and, in fact, all shareholders in the long-term. A relaxation of the rules on dual-class stock should be accompanied by a consideration of the investor protections that could additionally be implemented to give comfort to public shareholders that the structure will not be used for nefarious means. Transfer-restrictions and requirements for founders to retain sufficient skin-in-the-game, for example, can ensure investor confidence is not compromised and reduce the cost of capital for dual-class firms. A judicious and cautious opening of the premium-tier to dual-class stock is very much overdue.

J D Johnson

I'd like businesses to look into feminism. A Reciprocated fair pay, for both men and women. Also, the woman to have the same responsibilities and power input as a male. Their voice is just as equal and both important then a male's perspective. This a social affect that deserves its warranty to keep humanity combined. Same as there is more alienation fathers than there is women, but maybe if we treat them the same in a reciprocated welfare it would enlighten different aspects towards women also.

The Government specifically need to make a drastic change to professional sports players being women specifically, as a woman has to adapt her whole social behaviour to become a professional boxer, football player for instance. Can't have a family life etc. Due to keeping their professionalism. They need supporting in this dilemma immediately same pay as men, for instance an arsenal men's team will get payed a substantial amount to whereas a woman will get a lot less. It's inappropriate.

High Speed Rail Group

The Committee should look into how major infrastructure projects can level up the whole of the UK, and how a fully integrated high-speed rail network would boost productivity. This would look at rebalancing the economy, regeneration of the North, and how benefits to business can spread to support wide range of sectors including jobs, manufacturing, investment and export potential.

HS2 and NPR are the two flagship examples of such programmes, and besides reducing journey times and increasing capacity, they will also support business growth and job creation, both directly in the engineering and construction sectors, as well as in regional economies and supply chains. HS2 is also the only way to achieve a modal shift from aviation and road to high speed rail, as HSRG set out in HS2 – towards a zero-carbon future.

The Committee could review which institutions are required, how integration might work, how HS2 and NPR can deliver the best value for businesses and consumers, and how a

national high-speed rail network would level-up the UK. With the Notice to Proceed for HS2 issued and the project beginning in earnest, now is the perfect time to look into how best to maximise its benefits.

Major infrastructure projects will drive regional business growth as we look to rebalance our national economy. High speed rail will feed into local industrial strategies, bring Britain's towns and cities closer together, join up a fragmented union and close the productivity gap between London and the North.

Given the impact that Covid-19 is having on business, a Government-led public works programme to invest in major infrastructure could provide the shot in the arm that Britain's economy will need both during and following this difficult period, supporting resilience and growth in the national economy.

Major infrastructure projects also promote a range of other benefits, as HSRG show in the report *Why Britain Needs HS2*. HS2 will boost UK exports, skills, and build and grow businesses in the industry and beyond. The scheme is currently supporting approximately 11,000 jobs and is set to support 15,000 jobs by year end. Ultimately, it will underpin 400,000 jobs overall and 70% of these outside of London.

Combined with the environmental benefits of modal shift from air and road to rail, HS2 is essential for both joining-up Britain and a pre-requisite for a net zero future.

With Government pushing ahead with HS2 and Northern Powerhouse Rail, additional action can be taken to level up Britain, boost jobs, businesses, and productivity, and make the UK a world leader in engineering and manufacturing. The Government should consider how it views integration between schemes, as well as other projects that could contribute to maximising the benefits of an wider fully integrated high speed rail network, including major environmental benefits.

Such an integrated high-speed rail network would connect all the regions, major cities, and countries of the UK to help bring the country back together. More than this, the country is in a unique position to establish itself as a world leader in any number of industries that rely on HS2 and other major infrastructure projects for their success.

Besides engineering and manufacturing, a national high-speed rail network will make the UK a first port of call for expertise in civils, architecture, archaeology, design, and low carbon construction. Government support is needed to make this a reality, whether through a change in how infrastructure projects are assessed, the green book or through clearer commitments to make infrastructure a key priority for boosting businesses.

Wood Panel Industries Federation

The UK faces a crisis in supply of wood for the Wood Panel and construction industries on which thousands of jobs and the nation's house-building programme depend. The primary reason for this is the subsidy given to burning wood through the Renewable Heat Initiative which last year cost the Government almost £1 billion in subsidies with dubious environmental returns. Before the latter policy is perpetuated 2021, the Committee should look at the costs and benefits of burning a finite national resource in return for public subsidy.

The Wood panel industry plays an important role in contributing to the regional and national economies. This vital sector uses over 25% of the 11 million tonnes of wood delivered from UK forestry every year and are leading the way in driving the UK industry towards net-zero emissions. Manufacturing operations rely upon the sustainable supply of wood materials, which are in increasingly restricted supply, given that the UK will reach 'peak wood' availability in the early 2030s followed by a forecasted sustained drop soon afterward.

The rise of the wood fuel sector which consumes around 25% of the UK annual wood basket has distorted the market and created shortages in supply, which as a consequence manufacturers are having to resort to imports to sustain their manufacturing efficiency. The RHI has a considerable effect on the UK's wood basket and on wood security as a whole. The industry believes that the growth of the wood fuel sector should not come at the expense of the wood panel industry and its effect on wood availability. We wish to see the end to artificial stimulation of demand moving forward through reviewing biomass subsidies. The Wood panel industry plays a considerable role in the UK economy. With a GVA in excess of £850m per annum and an ability to meet 65% of the UK demand for wood panel products the wood panel industry is a UK success story. This industry supports at least 7,500 dependent jobs, with salary levels in the three companies well in excess of the UK average. They supply a business to business interface, supplying some of the UK's biggest brands including B&Q, Jewson, Wickes and Howdens and are central to delivering upon the UK Government's housebuilding pledge of 1 million homes by 2020 and a further 0.5 million by 2022. Manufactured wood-based panel products can be identified in virtually every home, office and shop and are extensively used in the construction, furniture making, packaging and transportation industries.

The continuation of the RHI beyond 2021 will have a detrimental effect on this vital industry by manufacturers choosing to import wood panel products rather than buy UK products. It will also significantly deplete the UK's wood basket at a rate that increased tree planting cannot restore and contribute to deteriorating air quality. At the end of 2019, the total committed spend for RHI over the previous 12 months was £908m with this expected to rise to over £1bn by the end of 2020. The RHI is the only tax pay subsidy mechanism that has survived the UK Government's Energy Policy reset of 2015 and the Government could adapt the following policy changes:

- (1) Advocate the removal of the subsidies which cover woody biomass and create a competitive, free market for all wood users competing for a finite resource base. Equalisation of the market would be the most desirable for wood-panel manufacturers and place all wood users on a level playing field.
- (2) Promote the adoption of a technology neutral approach ensuring that renewables subsidies are equalised and biomass does not receive a higher rate than is justifiable based upon the available evidence.
- (3) Encourage the restriction of the total quantity of wood supply that can be consumed as wood fuel by recipients of subsidy payments on an annual basis and/or restrict the type of wood that biomass plants in receipt of subsidies can use as fuel. This would involve establishing a hierarchy of wood use, whereby wood types facing competition (small/industrial roundwood, medium sawlogs, sawmill products and clean wood waste) would not be eligible for subsidy.

2 Annex 2: Supplementary evidence

Supplementary evidence to Citizens Advice Scotland's submission



Appeal number: NV/2019/0018/P

**FIRST-TIER TRIBUNAL
GENERAL REGULATORY CHAMBER
ENVIRONMENT**

CAROL MASON

Appellant

- and -

**THE SECRETARY OF STATE FOR
BUSINESS ENERGY AND INDUSTRIAL
STRATEGY**

Respondent

TRIBUNAL: JUDGE ALISON MCKENNA (CP)

Sitting in Chambers on 8 April 2020

MODE OF HEARING

1. The parties and the Tribunal agreed that this matter was suitable for determination on the papers and without a hearing, in accordance with rule 32 of this Chamber's Procedure Rules¹.

DECISION

2. This appeal is allowed.
3. The Secretary of State's Decision of 2 October 2019 is hereby withdrawn, and the matter is remitted to the Secretary of State to make a fresh decision, which must take account of my reasons set out below.

REASONS

A: Background to Appeal

4. The Green Deal is a statutory scheme intended to assist in increasing the energy efficiency of residential properties. The scheme operates through companies called 'Green Deal Providers'. Green Deal Providers offer loans and arrange the installation of relevant equipment at their customers' properties under a 'Green Deal Plan'. They are required to conduct themselves in accordance with a Code of Practice. If they breach the Code of Practice, they may be sanctioned.
5. This appeal concerns the Secretary of State's Decision on 2 October 2019 to impose the sanction of 'reduction' on GDFC Assets Limited ("GDFC") as a 'relevant person' in relation to breaches of the Code of Practice by a Green Deal Provider known as Home Energy and Lifestyle Management Limited ("HELMS"), in relation to Green Deal Plan ID AC0000117720.
6. Mrs Mason is a 'person directly affected' by that decision, because she entered into the Green Deal Plan referred to above in respect of her home. As such, she has a right of appeal against the decision to this Tribunal, pursuant to regulation 87 of The Green Deal Framework (Disclosure, Acknowledgment, Redress etc.) Regulations 2012².

¹<https://www.gov.uk/government/publications/general-regulatory-chamber-tribunal-procedure-rules>

² <http://www.legislation.gov.uk/uksi/2012/2079/contents/made>

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7. I am grateful to the parties for their clear written submissions. I have considered carefully the agreed hearing bundle comprising 208 pages.

B: The Law

8. The Green Deal Framework (Disclosure, Acknowledgment, Redress etc.) Regulations 2012 were made pursuant to powers contained in the Energy Act 2011.

9. The Regulations materially provide as follows:

24.— (1) *A green deal provider must—*

(a) *comply with any provisions of the code of practice which apply to green deal providers;*

...

53. *Subject to chapter 3, the Secretary of State may impose under this Part the sanctions of—*

(a) *cancellation or reduction on a relevant person;*

(b) *compensation further to cancellation on an improver or a notifier, as applicable;*

(c) *a compliance notice on a green deal provider;*

(d) *a financial penalty on a green deal provider;*

(e) *suspension on an authorised person other than a green deal provider;*

(f) *withdrawal on an authorised person.*

...

67.— (1) *This regulation applies where the Secretary of State is satisfied that there is a breach of the relevant requirements by a green deal provider and—*

(a) *the breach is severe; or*

(b) *there have been other breaches of the relevant requirements by the green deal provider in respect of the property or other properties.*

(2) *The Secretary of State may impose on the green deal provider one or more of—*

(a) *a compliance notice;*

(b) *a financial penalty;*

(c) *withdrawal.*

(3) *Where the Secretary of State is satisfied that the bill payer has suffered substantive loss, the Secretary of State may, in addition to any sanction imposed under paragraph (2), impose cancellation or reduction on the relevant person.*

...

72.— (1) *This regulation applies where under this Part—*

(a) *cancellation or compensation must or may be imposed;*

(b) *the following may be imposed—*

(i) *reduction;*

(ii) *a financial penalty;*

(iii) *suspension;*

(iv) *withdrawal.*

(2) Before imposing a sanction, the Secretary of State must give notice (an “intention notice”) to any person other than the relevant energy supplier whom the Secretary of State considers to be an affected person, specifying—

(a) that the Secretary of State intends to impose the sanction;

(b) that affected persons may make written representations and the time limits for such representations;

(c) where the Secretary of State intends to suspend or withdraw the authorisation of a green deal certification body, that the relevant members of the certification body may make representations concerning a deferral in accordance with regulation 81; and

(d) subject to paragraph (3), those matters which the Secretary of State would be required to include in a sanctions notice, if the sanction is imposed.

(3) Where the Secretary of State intends to impose a financial penalty, the intention notice need not include—

(a) how payment may be made; and

(b) details of the early payment discounts.

(4) Where after consideration of any representations the Secretary of State decides to impose the sanction, the Secretary of State must give a sanctions notice in accordance with regulation 78.

(5) For the purposes of this regulation, “affected person” means any person whose interests will be directly affected by the imposition of the sanction.

...

78.— *(1) A sanctions notice must be given to—*

(a) any person to whom the Secretary of State is required to give a notice under regulation 72(2); and

(b) where cancellation or reduction is imposed—

(i) the relevant energy supplier; and

(ii) the complainant, if that person is not the bill payer.

(2) A sanctions notice must include—

(a) the sanction imposed;

(b) the person on whom the sanction is imposed;

(c) the reason for imposing the sanction; and

(d) information on appeals which may be made under regulation 87.

(3) A sanctions notice containing cancellation, reduction, suspension or withdrawal must include the date on which the sanction has effect.

(4) A sanctions notice containing reduction must include—

(a) the total amount of the reduction;

(b) how the reduction has been calculated; and

(c) the revised amount due under the energy plan.

(5) A sanctions notice containing a financial penalty must include—

(a) the amount of the penalty;

(b) the period within which payment must be made;

(c) how payment may be made;

(d) details of the early payment discounts; and

(e) the consequences of non-payment.

(6) A sanctions notice containing suspension must include the date on which the suspension ceases to have effect.

...

79. Any sanction imposed under this chapter must be proportionate to the breach in relation to which it is imposed.

...

87.— (1) Subject to paragraph (5), any person directly affected by a decision of the Secretary of State—

(a) to refuse an application for authorisation under Part 3 to act as a green deal assessor certification body or a green deal installer certification body;

(b) to impose or not to impose a sanction under Part 8,

may appeal to the First Tier Tribunal.

(2) The Tribunal must determine the standard of proof in any case.

(3) The Tribunal may suspend a decision pending determination of the appeal.

(4) The Tribunal may—

(a) in relation to a decision under Part 3 or 8—

(i) withdraw, confirm or vary the decision;

(ii) remit the decision to the Secretary of State;

(b) in relation to a decision whether to impose a sanction under Part 8, impose a different sanction or take different action.

(5) A relevant energy supplier may not appeal under this regulation unless it is affected by a decision for a reason which is not connected with its collection of payments under a plan.

10. The Tribunal's jurisdiction in determining an appeal under regulation 87 above is *de novo* i.e. it requires the Tribunal to stand in the shoes of the Secretary of State and to take a fresh decision about whether to issue a sanction notice - and if so which type of sanction notice - on the evidence before it at the hearing, giving appropriate weight to the reasons for the Secretary of State's decision. The nature of such an appeal is described in *El Dupont v Nemours & Co v ST Dupont* [2003] EWCA Civ 1368 by May LJ at [96]³.

11. In taking a fresh decision, I note that the Tribunal is not required to undertake a reasonableness review of the Respondent's decision, but instead to decide whether it would itself issue the same Notice on the evidence before it. The Tribunal has no supervisory jurisdiction – see *HMRC v Abdul Noor* [2013] UKUT 071 (TCC)⁴.

³ <http://www.bailii.org/ew/cases/EWCA/Civ/2003/1368.html>

⁴ http://taxandchancery.ut.decisions.tribunals.gov.uk/Documents/decisions/HMRC_v_Abdul_Noor.pdf

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12. In *R (Hope and Glory Public House Ltd v City of Westminster Magistrates' Court)* [2011] EWCA Civ 31⁵, the Court of Appeal decided that “*careful attention*” should be paid to the reasons given by an original decision-maker, bearing in mind that Parliament had entrusted it with making such decisions. However, the weight to be attached to the original decision when hearing an appeal is a matter of judgment for the Tribunal, “*taking into account the fullness and clarity of the reasons, the nature of the issues and the evidence given in the appeal*”. The approach recommended in *Hope and Glory* was approved by the Supreme Court in *Hesham Ali (Iraq) v Secretary of State for the Home Department* [2016] 1 WLR 4799⁶.
13. Pursuant to rule 15 (2) (a) (ii) of the Tribunal’s Rules⁷, the Tribunal may when hearing an appeal admit evidence whether or not it was available to the previous decision maker. The burden of proof in a *de novo* appeal rests with the Appellant as the party seeking to disturb the status quo. The usual standard of proof to be applied by the Tribunal in making findings of fact is the balance of probabilities. Regulation 87 (2) requires the Tribunal to determine the appropriate standard of proof in hearing an appeal against a Sanction Notice. I have not received submissions on this point but consider it appropriate to direct that the civil standard (‘the balance of probabilities’) should be applied in this case.

C: The Facts

14. The background facts, which were not in dispute, may be summarised as follows.
15. Mrs Mason entered into a Green Deal Plan in relation to the instalment of solar panels on the roof of her property in Glasgow in October 2014. The Green Deal Provider was Home Energy and Lifestyle Management Limited (“HELMS”), which no longer exists. Before it was dissolved, HELMS was sanctioned for breaches of the Code of Practice with which Green Deal Providers are bound to comply.
16. Mrs Mason’s Green Deal Plan included provision for her repayments under a credit agreement with HELMS to be made to GDFC Assets Limited (“GDFC”). GDFC is therefore the ‘relevant person’ for the purposes of a decision whether to impose a sanction of cancellation or reduction under regulation 53 (a) of the 2012 Regulations, referred to above. It also provided

⁵ <http://www.bailii.org/ew/cases/EWCA/Civ/2011/31.html>.

⁶ <https://www.supremecourt.uk/cases/docs/uksc-2015-0126-judgment.pdf>

⁷ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/367600/tribunal-procedure-rules-general-regulatory-chamber.pdf

for the payments to which she was entitled on account of the energy produced by the solar panels (known as the ‘feed-in tariff’ or ‘FiT’) to be assigned to a third company, PVSI.

17. Mrs Mason complained to HELMS promptly that it had misled her about the cost of entering the Green Deal Plan. Her liabilities under the Plan were greater than she said she was told they would be and did not reduce her energy bill as she said she had been promised. She later complained to the Financial Ombudsman Service, but as HELMS had by then ceased to exist, no sanction could be imposed on upholding her complaint. This matter was therefore treated as referred to the Secretary of State under regulation 59 of the 2012 Regulations.
18. The Secretary of State, having received the Ombudsman’s analysis, initially proposed the sanction of cancellation of Mrs Mason’s Plan in a Notice of Intention dated 16 April 2019. However, after receiving representations from GDFC in response to the Notice of Intention, the Secretary of State decided instead to impose the sanction of reduction on GDFC. That is the decision of 2 October 2019 which is the subject matter of this appeal.

D: The Notice of Intention and the Sanction Decision

19. The Notice of Intention dated 16 April 2019 (page 65) informed GDFC that the Secretary of State had made certain initial findings of fact (set out in an annexe) and in reliance thereon proposed to impose the sanction of cancellation on GDFC in respect of Mrs Mason’s Plan. The initial findings of fact included the identification of four separate breaches of the Code of Practice which directly impacted on Mrs Mason’s ability to understand the nature of the transaction being offered to her, and contained the initial conclusions that *Mrs Mason would not have entered the credit agreement if not for HELMS’ breaches of the CoP* and that *Cancellation of the Plan takes Mrs Leach back as closely as possible to the position she would have been in had HELMS not breached the CoP*. The Notice of Intention also noted that *We cannot be certain of what was said by the sales representative when dealing with Mrs Mason. However, the pattern of behaviour alleged in the complaint is consistent with that upon which sanctions were imposed on HELMS by the Secretary of State ...on 19 November 2015 and in subsequent cases.*
20. GDFC made a 78 -paragraph representation in response to the Notice of Intention (page 71). It submits that Mrs Mason’s complaint that she was told the solar panels would be free is unsustainable because standard documentation was used by HELMS and signed by her. It is submitted that the provisional findings in relation to breaches of the Code of Practice were unsustainable and that, in any event, the Code of Practice did not apply to the FiT contract with PVSI. GDFC submitted that the Secretary of State’s approach to the initial fact-finding was flawed. Further, it was submitted that the proposed sanction of cancellation was both unreasonable and

disproportionate in its impact on GDFC, that it would provide Mrs Mason with the windfall of free panels and that her complaint about the FiT should be taken up directly with PVSI.

21. The Secretary of State considered only GDFC's submissions before reaching the final Sanction Decision, as Mrs Mason did not make any further representations.
22. I find it surprising that the Secretary of State does not refer to the Ombudsman's recommendations in either the Notice of Intention or the Sanction Decision. This makes it difficult to know what, if any, weight was given to the Ombudsman's findings of fact and conclusions thereon, reached after the Ombudsman's own investigation. It would appear that the Secretary of State relied on the Ombudsman's findings of fact and did not conduct his own investigation on factual matters, but this is not stated. The Ombudsman's findings are included as documentary evidence in the bundle now before me and I refer to them below.
23. The final Sanction Decision dated 2 October 2019 confirmed the findings of fact set out in the Notice of Intention to the effect that there were breaches of the Code of Practice. It concluded that it was *reasonable to assume that Mrs Mason may not necessarily have thought that the panels were 'free'. However.... the HELMS representative did mislead Mrs Mason by telling her that her bills would not rise and that her savings would be sufficient to cover her repayments under the Plan...*
24. The Secretary of State finally concluded that the sanction of reduction should be imposed in these circumstances, to take Mrs Mason closest to the position she would have been in if HELMS had not misled her. The Secretary of State assumed energy savings of £120 per year and reduced Mrs Mason's payments so that they matched this figure. This involved reducing her liability under the Plan by £4,324.92, including an immediate refund of £746.46 in respect of overpayments already made. This is the decision which Mrs Mason now appeals against.

E: The Appeal - Pleadings and Submissions

25. Mrs Mason's Notice of Appeal dated 5 October 2019 relied on grounds that, whilst the sanction of reduction seemed reasonable, the amount of the reduction did not take account of the financial burden she has already carried and would continue to face for the next nineteen years. In particular, she says she is concerned that she will have to pay for the maintenance or replacement of the panels and that she will not be able to repair her roof or sell her house with the panels and the financial arrangements in place. She states that the outcome she seeks is cancellation of the Plan and compensation.
26. The Secretary of State's Response to the Notice of Appeal relied on the Secretary of State's decision as reasoned and proportionate. It was submitted

that removal of the panels was not a realistic option as the contract in relation to the panels was with PVSI so cancellation of the Plan could not affect Mrs Mason's obligations in respect of the panels. It described the panels as a tangible asset which Mrs Mason receives a benefit from but does not address the question she raised in her grounds of appeal about her ongoing liabilities if the Plan continues in operation, albeit that her payments are reduced.

27. In her Reply, Mrs Mason says that she feels aggrieved and is suffering financial hardship. She says she will be paying for the panels and any maintenance for the next nineteen years.
28. GDFC, having received a copy of the Notice of Appeal, informed the Tribunal that it did not wish to be joined as a party to this appeal but did wish to place its submissions before me. In these submissions, it is noted *inter alia* that there appears to be no clear evidential basis for certain conclusions reached by the Secretary of State as relied on in the decision letter. This may arise from the fact that there is no reference to the Secretary of State's reliance on the Ombudsman's findings. GDFC states that PVSI bears responsibility for the maintenance and repair of the panels so Mrs Mason is free to pursue PVSI if she wishes.
29. In a written skeleton argument for the Tribunal, Charles Streeten, counsel for the Secretary of State, reiterated that the sanction of reduction imposed in this case was intended to put Mrs Mason as close as possible to the position she would have been in had the Plan taken effect as sold to her by HELMS. He submits that the reduction of Mrs Mason's liability under her Plan so that her payments match her assumed savings is a proportionate decision to which the Tribunal should give weight.

F: Evidence

30. No formal witness evidence was relied on by either party.
31. The contractual documentation and correspondence with HELMS and with the Ombudsman is exhibited as documentary evidence (pages 128 to 208).
32. The other documentary evidence in the Tribunal's hearing bundle was the Financial Ombudsman Service's report (page 56). This records that Mrs Mason's original complaint was about the fact that she had been told by HELMS that the solar panels were free because they were 'Government funded'. This of course turned out not to be the case and the Ombudsman records that her energy costs have increased, causing her financial hardship and stress.
33. The Ombudsman points to the fact that Mrs Mason's credit loan agreement was signed some two months after the other contractual documentation. This casts doubt as to what she was told about the credit agreement when she was told about the credit agreement when she entered into the Green Deal Plan. So, on balance she may well not have realised there was a loan involved.

-
34. The Ombudsman concluded that Mrs Mason would not have entered into the Plan if she had understood it, and that HELMS had misled her into doing so. It also concluded that she had suffered substantive loss as a result of HELMS' *unfair and misleading practices*. The Ombudsman found there to have been four breaches of the Code of Practice (considered to be *severe*) in Mrs Mason's case and recommended cancellation of Mrs Mason's Plan as a proportionate sanction, with a refund of the payments already made by Mrs Mason.

G: Conclusions

35. In reaching my conclusions on this appeal, I remind myself that I stand in the shoes of the Secretary of State and must make a fresh decision considering all the evidence before me as at the date of the hearing. I note that there is the information before me now which appears not to have been considered by the Secretary of State in making his decision on 2 October 2019.
36. I am satisfied that the legislative basis for issuing a sanction is met in this case, as follows:
- (i) I agree with the Secretary of State that the evidence shows on the balance of probabilities that HELMS committed a number of breaches of the Code of Practice, as specified, which put them in breach of the over-arching requirement to comply with the Code of Practice.
 - (ii) I agree with the Secretary of State's conclusion that these breaches were "severe" within the terms of regulation 67 (1) (a) and that Mrs Mason, thereby suffered "substantive loss" for the purposes of regulation 67 (3). This puts the Secretary of State in the position of being able to impose the sanction of cancellation or reduction on GDFC under regulation 67 (3).
37. This then raises the question of whether cancellation or reduction is the appropriate sanction. I note that regulation 79 requires any sanction imposed to be *proportionate to the breach for which it is imposed*. I cannot find in the Secretary of State's decision letter any proportionality analysis that links the seriousness of the breaches found to have been committed with the sanction imposed for those breaches. Looking at the Notice of Intention and the Notice together, it appears that the Secretary of State considered that cancellation or reduction were both proportionate to the breaches for which a sanction was merited, but that other factors influenced the final choice as to which of those sanctions to impose.
38. I find that the Secretary of State's reasoning on the question of the appropriate sanction is insufficiently clear for me to attach weight to it. It seems to me that a fresh decision should be made in this case. This should provide clear findings of fact and a clear explanation of why either sanction is merited, with

reference to the breaches themselves, in order to satisfy the proportionality requirement.

39. If the ability to put Mrs Mason as close as possible into the position she would have been if the Plan had taken effect as sold to her by HELMS is an appropriate factor to consider, then it seems to me that a more thoroughgoing analysis and a clear finding of fact as to her exposure to ongoing liability for the maintenance and repair of the solar panels should also be factored into that decision-making process.
40. Finally, whilst I am not here conducting a procedural review, I observe that I found it surprising that the Secretary of State considered it appropriate, having sought comments on the Notice of Intention to cancel Mrs Mason's Plan, to then decide to impose the sanction of reduction without any prior indication of this change of course. This meant that neither Mrs Mason nor GDFC were given the opportunity to comment on the proposed terms of the reduction or to dispute the calculations made in the final decision. It seems to me that it would have been fairer for the Secretary of State to have issued a fresh Notice of Intention inviting representations on the proposal to impose the sanction of reduction before issuing a final decision. In the absence of a second Notice of Intention, Mrs Mason had no alternative but to appeal to this Tribunal and this has undoubtedly been more resource-intensive for the public purse.
41. For all the above reasons, I have concluded that the Secretary of State's decision of 2 October 2019 cannot stand and so I allow this appeal and withdraw it. I remit the matter to the Secretary of State to make a fresh decision, in which he will exercise his own skill and judgement but must take into account all the evidence placed before me in deciding this appeal, and pay careful attention to the comments I have made in this Decision.

(Signed)

Judge Alison McKenna
Chamber President

DATE: 8 April 2020
Promulgation Date: 14 April 2020

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Appeal number: NV/2019/0019

**FIRST-TIER TRIBUNAL
GENERAL REGULATORY CHAMBER
ENVIRONMENT**

MARGARET LEACH

Appellant

- and -

**THE SECRETARY OF STATE FOR
BUSINESS ENERGY AND INDUSTRIAL
STRATEGY**

Respondent

TRIBUNAL: JUDGE ALISON MCKENNA (CP)

Sitting in public at Columbus House, Newport on 3 March 2020

**The Appellant appeared in person
The Respondent was represented by Charles Streeten, counsel**

DECISION

1. This appeal is allowed.
2. The Secretary of State's Decision of 2 October 2019 is hereby withdrawn and the matter is remitted to the Secretary of State to make a fresh decision, which must take account of my reasons set out below.

REASONS

A: Background to Appeal

3. The Green Deal is a statutory scheme intended to assist in increasing the energy efficiency of residential properties. The scheme operates through companies called 'Green Deal Providers'. Green Deal Providers offer loans and arrange the installation of relevant equipment at their customers' properties under a 'Green Deal Plan'. They are required to conduct themselves in accordance with a Code of Practice. If they breach the Code of Practice, they may be sanctioned.
4. This appeal concerns the Secretary of State's Decision on 2 October 2019 to impose the sanction of 'reduction' on GDFC Assets Limited ("GDFC") as a 'relevant person' in relation to breaches of the Code of Practice by a Green Deal Provider known as Home Energy and Lifestyle Management Limited ("HELMS"), in relation to Green Deal Plan ID AC0000089176.
5. Mrs Leach is a 'person directly affected' by that decision, because she entered into the Green Deal Plan referred to above in respect of her home. As such, she has a right of appeal against the decision to this Tribunal, pursuant to regulation 87 of The Green Deal Framework (Disclosure, Acknowledgment, Redress etc.) Regulations 2012¹.
6. The Tribunal convened an oral hearing on 3 March 2020. The Appellant attended in person and Charles Streeten, counsel, represented the Respondent. GDFC was aware of these proceedings but decided not to apply to be joined as a party. Its written submissions to the Respondent were included in the Tribunal's hearing bundle.
7. I am grateful to Mrs Leach and to Mr Streeten for their clear oral and written submissions. I have considered carefully the agreed hearing bundle comprising some 550 pages.
8. I reserved my Decision, which I now provide in this document.

¹ <http://www.legislation.gov.uk/ukxi/2012/2079/contents/made>

B: The Law

9. The Green Deal Framework (Disclosure, Acknowledgment, Redress etc.) Regulations 2012 were made pursuant to powers contained in the Energy Act 2011.

10. The Regulations materially provide as follows:

24.—(1) *A green deal provider must—*

(a) *comply with any provisions of the code of practice which apply to green deal providers;*

...

53. *Subject to chapter 3, the Secretary of State may impose under this Part the sanctions of—*

(a) *cancellation or reduction on a relevant person;*

(b) *compensation further to cancellation on an improver or a notifier, as applicable;*

(c) *a compliance notice on a green deal provider;*

(d) *a financial penalty on a green deal provider;*

(e) *suspension on an authorised person other than a green deal provider;*

(f) *withdrawal on an authorised person.*

...

67.—(1) *This regulation applies where the Secretary of State is satisfied that there is a breach of the relevant requirements by a green deal provider and—*

(a) *the breach is severe; or*

(b) *there have been other breaches of the relevant requirements by the green deal provider in respect of the property or other properties.*

(2) *The Secretary of State may impose on the green deal provider one or more of—*

(a) *a compliance notice;*

(b) *a financial penalty;*

(c) *withdrawal.*

(3) *Where the Secretary of State is satisfied that the bill payer has suffered substantive loss, the Secretary of State may, in addition to any sanction imposed under paragraph (2), impose cancellation or reduction on the relevant person.*

...

72.—(1) *This regulation applies where under this Part—*

(a) *cancellation or compensation must or may be imposed;*

(b) *the following may be imposed—*

(i) *reduction;*

(ii) *a financial penalty;*

(iii) *suspension;*

(iv) *withdrawal.*

(2) Before imposing a sanction, the Secretary of State must give notice (an “intention notice”) to any person other than the relevant energy supplier whom the Secretary of State considers to be an affected person, specifying—

(a) that the Secretary of State intends to impose the sanction;

(b) that affected persons may make written representations and the time limits for such representations;

(c) where the Secretary of State intends to suspend or withdraw the authorisation of a green deal certification body, that the relevant members of the certification body may make representations concerning a deferral in accordance with regulation 81; and

(d) subject to paragraph (3), those matters which the Secretary of State would be required to include in a sanctions notice, if the sanction is imposed.

(3) Where the Secretary of State intends to impose a financial penalty, the intention notice need not include—

(a) how payment may be made; and

(b) details of the early payment discounts.

(4) Where after consideration of any representations the Secretary of State decides to impose the sanction, the Secretary of State must give a sanctions notice in accordance with regulation 78.

(5) For the purposes of this regulation, “affected person” means any person whose interests will be directly affected by the imposition of the sanction.

...

78.— *(1) A sanctions notice must be given to—*

(a) any person to whom the Secretary of State is required to give a notice under regulation 72(2); and

(b) where cancellation or reduction is imposed—

(i) the relevant energy supplier; and

(ii) the complainant, if that person is not the bill payer.

(2) A sanctions notice must include—

(a) the sanction imposed;

(b) the person on whom the sanction is imposed;

(c) the reason for imposing the sanction; and

(d) information on appeals which may be made under regulation 87.

(3) A sanctions notice containing cancellation, reduction, suspension or withdrawal must include the date on which the sanction has effect.

(4) A sanctions notice containing reduction must include—

(a) the total amount of the reduction;

(b) how the reduction has been calculated; and

(c) the revised amount due under the energy plan.

(5) A sanctions notice containing a financial penalty must include—

(a) the amount of the penalty;

(b) the period within which payment must be made;

(c) how payment may be made;

(d) details of the early payment discounts; and

(e) the consequences of non-payment.

(6) A sanctions notice containing suspension must include the date on which the suspension ceases to have effect.

...

79. Any sanction imposed under this chapter must be proportionate to the breach in relation to which it is imposed.

...

87.— (1) Subject to paragraph (5), any person directly affected by a decision of the Secretary of State—

(a) to refuse an application for authorisation under Part 3 to act as a green deal assessor certification body or a green deal installer certification body;

(b) to impose or not to impose a sanction under Part 8,

may appeal to the First Tier Tribunal.

(2) The Tribunal must determine the standard of proof in any case.

(3) The Tribunal may suspend a decision pending determination of the appeal.

(4) The Tribunal may—

(a) in relation to a decision under Part 3 or 8—

(i) withdraw, confirm or vary the decision;

(ii) remit the decision to the Secretary of State;

(b) in relation to a decision whether to impose a sanction under Part 8, impose a different sanction or take different action.

(5) A relevant energy supplier may not appeal under this regulation unless it is affected by a decision for a reason which is not connected with its collection of payments under a plan.

11. This is the first appeal under these Regulations to require determination by the Tribunal. The Tribunal's jurisdiction in determining an appeal under regulation 87 above is *de novo* i.e. it requires the Tribunal to stand in the shoes of the Secretary of State and to take a fresh decision about whether to issue a sanction notice - and if so which type of sanction notice - on the evidence before it at the hearing, giving appropriate weight to the reasons for the Secretary of State's decision. The nature of such an appeal is described in *El Dupont v Nemours & Co v ST Dupont* [2003] EWCA Civ 1368 by May LJ at [96]².

12. In taking a fresh decision, I note that the Tribunal is not required to undertake a reasonableness review of the Respondent's decision, but instead to decide whether it would itself issue the same Notice on the evidence before it. The Tribunal has no supervisory jurisdiction – see *HMRC v Abdul Noor* [2013] UKUT 071 (TCC)³.

13. In *R (Hope and Glory Public House Ltd v City of Westminster Magistrates' Court* [2011] EWCA Civ 31⁴, the Court of Appeal decided that “careful attention” should be paid to the reasons given by an original decision-maker, bearing in mind

² <http://www.bailii.org/ew/cases/EWCA/Civ/2003/1368.html>

³ http://taxandchancery.ut.decisions.tribunals.gov.uk/Documents/decisions/HMRC_v_Abdul_Noor.pdf

⁴ <http://www.bailii.org/ew/cases/EWCA/Civ/2011/31.html>.

that Parliament had entrusted it with making such decisions. However, the weight to be attached to the original decision when hearing an appeal is a matter of judgment for the Tribunal, “*taking into account the fullness and clarity of the reasons, the nature of the issues and the evidence given in the appeal*”. The approach recommended in *Hope and Glory* was approved by the Supreme Court in *Hesham Ali (Iraq) v Secretary of State for the Home Department* [2016] 1 WLR 4799⁵.

14. Pursuant to rule 15 (2) (a) (ii) of the Tribunal’s Rules⁶, the Tribunal may when hearing an appeal admit evidence whether or not it was available to the previous decision maker. The burden of proof in a *de novo* appeal rests with the Appellant as the party seeking to disturb the status quo. The usual standard of proof to be applied by the Tribunal in making findings of fact is the balance of probabilities. Regulation 87 (2) requires the Tribunal to determine the appropriate standard of proof in hearing an appeal against a Sanction Notice. Having considered the parties’ submissions, I agree with them that the civil standard (‘the balance of probabilities’) should be applied in this case.

C: The Facts

15. The background facts which were not in dispute may be summarised as follows.

16. Mrs Leach entered into a Green Deal Plan with HELMS in 2014. HELMS had taken a lump sum from a company called the Green Deal Finance Company Ltd in return for the assignment of the benefit of the customer’s loan repayments to that company. GDFC Assets Ltd (“GDFC”) is a subsidiary of the Green Deal Finance Company, and the company to which Mrs Leach’s payments under the Plan were due. For this reason, although Mrs Leach’s Green Deal Provider was HELMS, it is GDFC which falls to be dealt with as the ‘relevant person’ for the purposes of a decision whether to impose a sanction of cancellation or reduction under regulation 53 (a) of the 2012 Regulations, referred to above.

17. Mrs Leach’s agreement with HELMS provided for the installation of solar panels on the roof of her property in South Wales. The solar panels were paid for, in part, by a regulated credit agreement (known as ‘Green Deal Finance’) and, in part, by a ‘Feed-in Tariff’ (‘FIT’) transfer option.

18. The FIT transfer option operates as follows. The FIT is a payment made by an energy supplier to people who produce renewable energy on a small scale, remunerating them for their contribution to the national grid. It is possible to assign the benefit of this payment to a third party. In Mrs Leach’s case, her FIT was assigned to a company called PV Solar Investments Limited (‘PVSI’), which is

⁵ <https://www.supremecourt.uk/cases/docs/uksc-2015-0126-judgment.pdf>

⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/367600/tribunal-procedure-rules-general-regulatory-chamber.pdf

legally distinct from HELMS and GDFC. The Secretary of State has no relevant powers in relation to PVSI.

19. The solar panels were fitted in October 2014 and in December that year Mrs Leach complained to HELMS that she was being charged in excess of £1 a day for the purchase of the solar panels. She said she had not understood that this would happen as she thought they were provided for free and she felt that she had been misled by HELMS about this cost.

20. The Secretary of State imposed a financial penalty on HELMS in 2015 for its breaches of the Code of Practice in other cases. HELMS is no longer in existence, having ceased trading and finally been dissolved in 2018.

21. Mrs Leach complained to the Financial Ombudsman Service, which investigated and issued a report concluding that Mrs Leach's Plan should be cancelled because it had been mis-sold to her by HELMS. However, the Ombudsman could not impose a sanction on HELMS as by then it no longer existed. Accordingly, the Secretary of State treated Mrs Leach's case as having been referred to him for determination of the relevant sanction under regulation 59 of the 2012 Regulations.

22. The Secretary of State issued a Notice of Intention to GDFC on 14 March 2019, in which he proposed to impose the sanction of 'cancellation' of Mrs Leach's Green Deal Plan.

23. GDFC made representations. Having considered GDFC's representations, the Financial Ombudsman again recommended the sanction of cancellation. However, the Secretary of State decided instead to impose the sanction of 'reduction' and issued a Sanctions Notice on 2 October 2019. It is this decision which is the subject of this appeal.

24. This factual background gives rise to a complex set of legal issues. As at the date of the hearing, I would summarise the relevant issues as follows:

(i) Mrs Leach apparently signed a credit agreement with HELMS, which partially financed the purchase and installation of the solar panels on her roof. She says she was misled into signing this contract, which she says she would not have signed if she had known that it would last for 23 years (until she was into her 70's) and as it charged an interest rate three times higher than that which she could otherwise have obtained with her excellent credit rating. There is doubt as to whether she did in fact sign all the relevant documents (see paragraph 39 below);

(ii) HELMS broke the terms of the Code of Practice in its dealings with its customers. It was penalised for this. It also received a financial penalty from the Information Commissioner's Office in respect of 'cold-calling'. It went into administration and it no longer exists. Whilst Mrs Leach points to the common personalities involved in HELMS and GDFC, they are legally separate entities;

(iii) Mrs Leach's credit repayments remain due and must be made to GDFC because HELMS had borrowed money from GDFC and agreed to repay it using Mrs Leach's payments. Mrs Leach's Green Deal Plan obliged her to make payments to GDFC;

(ii) Mrs Leach still has the solar panels on her roof. These produce energy but PVSI receives the payments for that energy under the contractual terms of Mrs Leach's Green Deal Plan as to the FIT transfer option. If Mrs Leach removed the panels or changed her energy supplier, she would be in breach of her subsisting contract with PVSI;

(iii) PVSI is contractually obliged to maintain and repair the solar panels for 20 years, but the liability for maintaining the roof underneath the panels obviously remains with Mrs Leach. She says that PVSI have not responded to her enquiries about maintenance and repair of the solar panels;

(iv) If Mrs Leach wishes to sell her house, she would need to pass on the solar panels and the contractual arrangements which surround them to her purchaser. She thinks this makes it unlikely that she could sell her house;

(v) Mrs Leach has not so far received the benefit of the reduced energy costs which she thought she would achieve under the Green Deal Plan. It is accepted that her costs exceed her savings. This is a breach of the so-called 'golden rule' imposed by regulation 30 of the 2012 Regulations. The Secretary of State has calculated that Mrs Leach can achieve annual energy savings of £120 from the solar panels, although this will vary over the lifetime of the Plan as usage and energy costs change. Mrs Leach disputes this figure, telling the Tribunal that she could obtain an energy savings of £100 per year at the very best;

(vi) The Secretary of State's decision of 2 October 2019 upheld Mrs Leach's ongoing legal liability to GDFC but reduced the amount she owed, so that her annual payments would match her assumed energy savings. This would, in the Secretary of State's view, put Mrs Leach in the position that she would have been in if the Plan had taken effect as sold to her;

(vii) However, Mrs Leach emphatically does not wish to remain in any kind of contractual relationship with GDFC or PVSI, especially for such a lengthy future period. She wants her contractual obligation to GDFC to be cancelled by the Secretary of State and for her credit payments to be refunded in total;

(viii) GDFC submits that, if Mrs Leach's Plan is cancelled, she will receive a 'windfall' in that she will have obtained the benefit of the solar panels for free. The effect of a cancellation would also be that GDFC would effectively have to compensate Mrs Leach for the loss of the FIT income, whilst PVSI continued to retain the benefit of the FIT transfer option. GDFC submits that this outcome would be irrational and disproportionate;

(ix) Mrs Leach told the Tribunal that she intends to bring proceedings against PVSI once these proceedings are concluded, as she wants the solar panels removed from her roof. She is still within the six-year time limit for bringing such proceedings. The

Secretary of State concluded that removal of the panels was not a realistic option, as in her submissions of May 2019 Mrs Leach stated that she did not intend to litigate (page 207). However, Mrs Leach had clearly changed her position on this point by the time of the hearing.

D: The Notice of Intention and the Sanction Decision

25. The Notice of Intention dated 14 March 2019 (page 154) informed GDFC that the Secretary of State had made certain initial findings of fact (set out in an annexe) and proposed to impose the sanction of cancellation on GDFC in respect of Mrs Leach's Plan. The initial findings of fact included the identification of four separate breaches of the Code of Practice which directly impacted on Mrs Leach's ability to understand the nature of the transaction being offered to her, and contained the initial conclusion that *Mrs Leach would not have entered the credit agreement if not for HELMS' breaches of the CoP* and that *Cancellation of the Plan takes Mrs Leach back as closely as possible to the position she would have been in had HELMS not breached the CoP*. The Notice of Intention also noted that *We cannot be certain of what was said by the salesperson when dealing with Mrs Leach. However, the pattern of behaviour alleged in the complaint is consistent with that upon which sanctions were imposed on HELMS by the Secretary of State ...on 19 November 2015*.

26. GDFC made a 92-paragraph representation in response to the Notice of Intention (page 160). It submits that Mrs Leach's complaint that she did not know she was entering into a loan agreement is unsustainable because standard documentation was used by HELMS and signed by her, she had made and produced contemporaneous notes which showed her understanding, and that her original complaint had actually been about the inadequate level of savings, so she has been inconsistent. GDFC accepted that HELMS had been penalised in the past for breaches of the Code of Practice but argued that they were different types of infringement, not amounting to a pattern of conduct which could be prayed in aid here. It also denied that there had been breaches of the CoP consistent with the Secretary of State's initial findings. GDFC submitted that the Secretary of State's approach to the initial fact-finding was flawed. Further, it was submitted that the proposed sanction of cancellation was both unreasonable and disproportionate in its impact on GDFC.

27. The Secretary of State considered submissions from Mrs Leach, responding to GDFC's submissions, before reaching the final Sanction Decision. It is clear from the papers before me that the Financial Ombudsman Service also provided representations on GDFC's submissions (see paragraph 39 below) but these are not referred to in the Secretary of State's final decision, so it seems they were not considered. The Secretary of State's decision letter dated 2 October 2019 (page 218) summarises GDFC's and Mrs Leach's submissions, and goes on to find that HELMS committed four substantive breaches of the CoP, amounting to a breach of the requirement to comply with the CoP contained in the Regulations. The Secretary of State found, inter alia, that *Mrs Leach did not understand the nature of the arrangement she was entering into.....Based on the documentary evidence it appears to the Secretary of State that is likely that Mrs Leach was made aware that the Plan was a credit agreement but was led to believe her savings under the Plan would off-*

set the loan repayments. It appears that Mrs Leach did not fully understand the nature of the Plan nor the savings risks involved. The Secretary of State concluded that Mrs Leach had suffered substantial losses as a result of the breaches and that the sanction of reduction, rather than cancellation, would put Mrs Leach closest to the position she would have been in if she had not been misled by HELMS.

28. The Secretary of State's decision was to impose the sanction of reduction, back-dated to December 2014 (the date of Mrs Leach's first complaint to HELMS). The reduction has the effect of reducing Mrs Leach's liability under the Plan from a total of £8,359.56 to £2,727.50 (a reduction of £5,632.06). This reduction is to operate in two parts: (i) an immediate refund of £1,132.29 to compensate Mrs Leach for the overpayments she has already made under the Plan; and (ii) a reduction in her daily charge to lower her monthly payments to £9.99. The Secretary of State concluded that the reduction of Mrs Leach's payments to around £120 a year would match her assumed energy savings and that this is how the Plan had been supposed to work.

E: The Appeal - Pleadings and Submissions

29. Mrs Leach's Notice of Appeal relied on grounds that (i) she has been left 'out of pocket' by the Secretary of State's decision; (ii) the solar panels are likely to require repair and replacement at her own cost; (iii) she will be unable to sell her house whilst the panels remain in place; (iv) her energy savings are in the region of £100 a year, but she could achieve twice that saving if she were permitted to use a different supplier. She seeks the cancellation of the Plan and refund of the total loan payments. In additional submissions, Mrs Leach states that she had understood from HELMS that the solar panels would not cost her any money, she did not realise she was entering into a credit agreement and would not have done so if she had understood this as she has an excellent credit rating and did not need to borrow at such high interest rates. She understood HELMS and PVSI to be effectively the same company given that they share the same address and same director.

30. The Secretary of State's Response to the Notice of Appeal relied on the Secretary of State's decision as one which was considered and proportionate, and asked the Tribunal to uphold it. It referred to the Secretary of State's consideration of GDFC's submissions and those of Mrs Leach, but not those of the Financial Ombudsman. It is submitted that removal of the panels is not a realistic option because of Mrs Leach's contractual obligation to PVSI, and that this factor 'strongly militates' in favour of upholding the sanction of reduction. It suggests that Mrs Leach had not disputed that she had understood the Plan to involve a credit agreement.

31. In her Reply, Mrs Leach submitted that the Secretary of State had missed the point that the Plan was supposed to deliver savings, not merely for her to 'break even'. She asks for an explanation as to why the initial proposed sanction of cancellation was changed to one of reduction and disputes the suggestion that cancellation would offer her a 'windfall'. She takes issue with the Secretary of State's conclusion that she was 'likely' to have known she was entering into a credit agreement, stating that it was just as likely that she did not know the nature of the

agreement and that the Secretary of State was wrong to suggest she had not disputed this, as she had been disputing it for five years.

32. GDFC confirmed that it did not wish to be joined as a party to this appeal and exhibits its submissions in response to the Notice of Intention (page 311).

33. In his oral submissions to the Tribunal, Mr Streeten described the Secretary of State's decision of 2 October 2019 as one that was full, gave clear reasons and was given in the light of all the evidence. He submitted that the Secretary of State was best placed to undertake the necessary evaluative exercise so that the Tribunal should give weight to his decision. He submitted that the Regulations' proportionality requirement related to the nature of the breach rather than the nature of the harm caused. In this respect it was not intended to punish the Green Deal Provider. The Secretary of State's decision was intended to put Mrs Leach in the position she would have been in had she not been misled as to the likely savings she would be able to make.

34. Mrs Leach interjected to say that her insurance guarantee in respect of the panels lasted for ten years only, leaving her exposed to liability for them thereafter. In answer to a question from the Tribunal as to whether, in reaching the reduction decision, the Secretary of State had considered Mrs Leach's exposure to liability by keeping the Plan in place, Mr Streeten replied that only matters placed in evidence before the Secretary of State had been taken into account.

35. In answer to further questions from the Tribunal, he submitted that the Secretary of State's finding that it was *likely* that Mrs Leach understood she was entering into a credit agreement should not be subjected to an overly-legalistic analysis and that it should be read benevolently to constitute a balance of probabilities finding.

36. In her submissions in reply, Mrs Leach asked rhetorically why she would have entered into a credit agreement on these terms? She said the answer was that she did not know it was a credit agreement. In relation to the sanction of reductions, she objected strongly to being tied into this agreement until she was in her 70s and her husband in his 80s. She said she had thought that she could still sell the house with solar panels on the roof, not realising at the time that she would have to pass on the credit agreement too. She said that the continuation of the Plan with reduction would affect her and her husband's credit score and their ability to borrow in the future.

37. Mrs Leach told the Tribunal that if she can get the Plan cancelled then she will bring proceedings against PVSI to have the solar panels removed. She was concerned that PVSI, like HELMS, would go into administration so that no one would have responsibility for the solar panels.

38. I asked Mr Streeten if cancellation had ever been imposed in a case of this nature and he said it had not, but that the Department's approach was evolving.

F: Evidence

39. No formal witness evidence was relied on by either party. There is a statement from Mrs Leach at page 374, which is undated and appears not to have been written for this appeal. The “contemporaneous notes” of a meeting with the HELMS representative are at page 384, but Mrs Leach says this was her husband’s note and she hadn’t been present at the meeting when this was written.

40. The documentary evidence in the Tribunal’s hearing bundle included two reports from the Financial Ombudsman Service, an email from an officer in Trading Standards Scotland (who had investigated HELMS’ activities in that jurisdiction), a letter from Mrs Leach’s Member of Parliament, and considerable copy correspondence between Mrs Leach and various bodies, including responses to her requests for information under the Freedom of Information Act 2000. Copies of the contractual arrangements between Mrs Leach and HELMS are exhibited (pages 356 to 373).

41. At page 539, Mrs Leach exhibits a copy of a letter sent to her from HELMS dated 29 August 2014, which confirms that her Green Deal Credit Agreement has been executed by HELMS. This date was before she herself first met the HELMS representative on 4 September. She has written a note that her husband met a cold caller from HELMS on 20 August and showed him their electricity bill, which seemed to have generated the 29 August letter.

42. The two reports prepared by the Financial Ombudsman Service are dated January and May 2019. In the first report (page 145), it is recommended that Mrs Leach’s Green Deal Plan should be cancelled because:

- *HELMS breached the COP by behaving dishonestly and unfairly towards Mrs Leach and failing to adequately explain the savings associated with her solar PV system.*
- *This behaviour by HELMS is consistent with that for which the company has already been sanctioned by the SoS.*
- *There have been other breaches of the relevant requirements by HELMS in respect of other properties.*
- *Mrs Leach has suffered a substantive loss in having entered into a credit agreement based on the HELMS’ unfair and misleading sales practices. We are satisfied that Mrs Leach would not have entered the credit agreement but for HELMS’ breaches of the Green Deal COP. We therefore consider cancellation of the agreement to be both proportionate to the breach and fair to Mrs Leach by returning her so far as possible to the situation she would have been in had HELMS not breached the COP.*

43. The report also concludes that Mrs Leach has been consistent in saying that she did not know that a form of loan was involved in her Plan. There is a further suggestion that one of the key documents was not signed by her, as her husband

apparently wrote her name on it in her absence. At page 152 of the bundle, it is stated that HELMS had *effectively accepted* this in an email to the Information Commissioner's Office.

44. In the second report from the Financial Ombudsman Service (page 208), written after sight of GDFC's representations on the Notice of Intention, the Ombudsman concluded that Mrs Leach was credible when she said she did not know she was entering into a credit agreement and that *"the documents alone would not be sufficient evidence of what she was told by HELMS' salesperson. We need to consider wider surrounding circumstances...there are some concerns about the documentation as well"* (page 211). Whilst leaving the final decision as to the appropriate sanction to the Secretary of State, the Financial Ombudsman Service's report comments (page 216) that:

"As HELMS no longer exists it is not clear what would happen if something goes wrong with the panels – who would provide the warranty? In addition, the consumers were expected to have the benefit of an insurance if the provider ceased to exist. But in several HELMS cases there is confusion as to what exactly happened with this insurance. The consumers are not sure of who they could turn to if something goes wrong with the solar panels."

Further, the Green Deal loan lasts for a very long term. So by simply reducing the loan (as opposed to cancellation) the consumers are left with a loan they did not want and which they claim weren't told of at the outset. And this problem is exacerbated where the customers were elderly when the sale was made....we have seen cases where the term of the loan runs until the consumers reach their 80s, 90s (and in few cases after they cross 100 years of age).

So, in a reduction scenario, even though the loan value gets reduced, the fact remains that the consumers are still liable for repayment of the loan into their 80s and 90s. That clearly distresses them. It doesn't seem right that due to HELMS' mis-sale such vulnerable consumers should continue to be liable for the loan repayments.

And as BEIS had pointed out, there appears to be multiple as well as severe breaches involving HELMS".

45. The email from Trading Standards Scotland (page 263) describes HELMS as operating in areas of low-income and focussing on an elderly demographic. The 'hallmarks' of a HELMS transaction are described, gained from a review of witness statements. This refers to a statement from the HELMS' representative that the solar panels are 'free' and that *'the Government pays for them'*. It states:

It is clear that they are not being told that the measures will require to be paid for and will require the consumer to enter into a Green Deal Finance Agreement. They are then presented with a HELMS contract, which they are told to sign, without proper explanation of what the implications are. The copy provided to the consumer is the 4th page of a carbonated document and is

practically illegible, leading to the consumer not seeing the cost of the measures. Consumers report being ‘bamboozled’, ‘confused’ and subjected to a blizzard of paperwork which the sales representative presents and instructs them to ‘sign here’. In the case of solar panels, a section of this contract titled FiT transfer (paid by investor) (sic) a figure of between £3,500 and £3,800 is inserted. Within the other forms presented is a form which effectively assigns the right to the Feed in Tariff to the company PV Solar Investments and records a ‘buy out’ price corresponding to the figure on the contract. Effectively, the consumer is now in a credit agreement spanning 23 or more years, without their knowledge, paying for the measures, and in the case of solar panels will receive no income from any excess electricity generated by them. The credit agreement itself is a multi-page document and the page requiring signature is headed “TOTAL ESTIMATED FIRST YEAR SAVINGS ACKNOWLEDGEMENT” and it is not readily clear that it is a credit agreement.

46. The letter from Mrs Leach’s MP (page 280) encloses a letter dated 11 December 2018 from the Rt Hon Clare Perry, then Secretary of State, regarding HELMS. She acknowledges that *many consumers say they were unaware they were entering into a credit agreement. The consumer’s position was often worsened because HELMS encouraged them to part-fund the installation by assigning the rights to any Feed-in Tariff from the measures to a separate company – one related to HELMS.*

47. Mrs Leach also exhibits her 2018 Solar Energy Calculator Results from the Energy Savings Trust, which set her installation costs of £8,000 against her total profit after 25 years of “*minus £1,900*”.

G: Conclusions

48. In reaching my conclusions on this appeal, I remind myself that I stand in the shoes of the Secretary of State and must make a fresh decision considering all the evidence before me as at the date of the hearing. I note that there is considerably more information before me now than appears to have been considered by the Secretary of State in making his decision on 2 October 2019 and I would not, in the light of all the evidence, make the same decision.

49. I find it difficult to give weight to the Secretary of State’s reasons in reaching a decision which was apparently made without considering the substantial body of relevant evidence and submissions which I have seen. Accordingly, my view is that the decision of 2 October 2019 must be set aside and re-made, taking into account the relevant factors which I have highlighted below.

50. Turning to the legislative basis for issuing a sanction, I agree with the Secretary of State that HELMS committed a number of breaches of the Code of Practice, which put them in breach of the over-arching requirement to comply with the Code of Practice. I agree that these breaches were “severe” within the terms of regulation 67 (1) (a) and that the bill payer, Mrs Leach, thereby suffered “substantive loss” for the purposes of regulation 67 (3). This puts the Secretary of State in the position of being

able to impose the sanction of cancellation or reduction on GDFC under regulation 67 (3).

51. I note that regulation 79 requires any sanction imposed to be *proportionate to the breach for which it is imposed*. I cannot find in the Secretary of State's decision letter any proportionality analysis that links the seriousness of the breaches found to have been committed with the sanction imposed for those breaches. Looking at the Notice of Intention and the Notice together, it looks as though the Secretary of State had considered that cancellation or reduction were both proportionate to the breaches for which a sanction was merited, but that other factors influenced the final choice as to which of those sanctions to impose. It seems to me that a fresh decision should provide a clearer explanation of why either sanction is merited, with reference to the breaches themselves, in order to satisfy the proportionality requirement. If the deciding factor is the ability to put Mrs Leach as close as possible into the position she would have been if the Plan had taken effect as sold to her by HELMS, then it seems to me that her unforeseen exposure to liability for the maintenance and repair of the solar panels must also be considered.

52. I also find it difficult to give weight to the Secretary of State's decision in view of the fact that it failed to make clear findings of fact on disputed matters. Mr Streeten submitted that the finding that it was *likely* that Mrs Leach understood she was entering into a credit agreement meant that the Secretary of State was satisfied on the balance of probabilities that this was *more likely than not*. He may be right, but it seems to me it could have been better expressed. Of more concern than the terminology, however, was the failure to balance GDFC's submission that Mrs Leach had been inconsistent in her approach and that her claim not to have understood the nature of the agreement was unsustainable against the other documentary evidence before me which suggests that HELMS' *modus operandi* had been found by the relevant authorities to include bamboozling its customers on this very point. A fresh decision must consider this evidence carefully and weigh it against GDFC's heavy reliance on the strictly compliant format of the contractual documentation.

53. The Secretary of State proceeded on the basis of his understanding that Mrs Leach was not intending to bring proceedings against PVSI for the removal of the solar panels however, as I have explained, she made a different submission to me. It follows that the Secretary of State's conclusion that the removal of the panels was not a realistic option, described in the Response as a material factor in deciding to impose the sanction of reduction rather than cancellation, cannot stand. Mrs Leach impressed me as a woman of great determination and resourcefulness. Over the past four years she has engaged with Trading Standards, the Advertising Standards Authority, The Financial Ombudsman Service, the Information Commissioner's Office, her Member of Parliament, and BBC Wales in her efforts to right the wrong she feels was done to her. If she says she intends to bring proceedings against PVSI then I would take her at her word. That being the case, it will be necessary for the Secretary of State to consider again whether cancellation or reduction is the appropriate sanction.

54. Finally, whilst I am not here conducting a procedural review, I observe that I found it surprising that the Secretary of State considered it appropriate, having sought

comments on a Notice of Intention to cancel Mrs Leach's Plan, to decide to reduce it without any prior indication of this change of course. This meant that neither Mrs Leach nor GDFC were given the opportunity to comment on the proposed terms of the reduction or to dispute the calculations there made. It seems to me that it would have been fairer for the Secretary of State to have issued a fresh Notice of Intention inviting representations on the proposal to impose the sanction of reduction before issuing a final decision. In the absence of a second Notice of Intention, Mrs Leach had no alternative but to appeal to the Tribunal and this has undoubtedly been more resource-intensive for the public purse.

55. For all the above reasons, I have concluded that the Secretary of State's decision of 2 October 2019 cannot stand and so I allow this appeal and withdraw it. I accept Mr Streeten's sensible proposal that in doing so I should remit the matter to the Secretary of State to make a fresh decision, in which he will exercise his own skill and judgement but must take into account all the evidence placed before me in deciding this appeal, and pay careful attention to the matters I have referred to in paragraphs 48 to 53 above.

(Signed)

Judge Alison McKenna
Chamber President

DATE: 3 April 2020
PROMULGATE DATE: 6 April 2020

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Formal minutes

Wednesday 8 July 2020

Virtual Meeting

Members present:

Darren Jones, in the Chair

Alan Brown	Paul Howell
Judith Cummins	Ruth Jones
Richard Fuller	Charlotte Nichols
Ms Nusrat Ghani	Mark Pawsey

Draft Report (*My BEIS inquiry: proposals from the public*), proposed by the Chair, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 14 read and agreed to.

Annexes agreed to.

Resolved, That the Report be the First Report of the Committee to the House.

Ordered, That the Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available (Standing Order No. 134).

[Adjourned till Thursday 9 July 2020, at 10.00am.]

List of Reports from the Committee during the current Parliament

All publications from the Committee are available on the [publications page](#) of the Committee's website. The reference number of the Government's response to each Report is printed in brackets after the HC printing number.

Session 2019–20

First Report	Future of the Post Office Network	HC 247
Second Report	The safety of electrical goods in the UK follow-up	HC 156
First Special Report	Energy efficiency: building towards net zero: Government Response to the Committee's Twenty-first Report	HC 124

Index

Prof. E. A. Kirk, University of Lincoln	5
Pumptec Engineering Group	6
UK Green Building Council	6
Sustainable Energy Association	7
Ecuity Consulting	8
Liquid Gas UK	9
H Lloyd, Facilitating the Future Ltd	10
Southwark Group of Tenant Organisations (SGTO)	11
Fuel Poverty Action	12
National Energy Action	13
B Fish	15
J Don	16
D P Haley	16
I McQuarrie	16
Civalli Insulation Alliance	17
Citizens Advice Scotland	17
G Ward	18
S Curry	19
Citizens Advice	19
Grantham Research Institute, London School of Economics (LSE)	20
National Energy Action	21
Prof S Bouzarovski, School of Environment, Education and Development at The University of Manchester	22
Dr J Rosenow, Regulatory Assistance Project (RAP)	23
Dr R Lowes, University of Exeter/UK Energy Research Centre (UKERC)	24
Bristol Green Capital Partnership	25
Policy Connect	25
Citizens Advice	26
National Energy Action	27
Prof J Watson, University College London (UCL)	28
OFTEC	29
Liquid Gas UK	30
SGN	30
Carbon Capture and Storage Association	31
Steve Green	32
J Hulton	32

Citizens Advice	33
J Honneyman	33
Good Energy	34
Comparison Technologies	35
N Hornsby	37
Zero Carbon Campaign	38
Grantham Research Institute, London School of Economics (LSE)	39
Aldersgate Group	40
Carbon Capture and Storage Association	41
Energy Intensive Users Group	43
Green Alliance	44
Dr Daniel Quiggin, Senior Research Fellow, Richard King, Senior Research Fellow, Energy, Duncan Brack, Associate Fellow, Energy, Environment and Resources Programme, Chatham House, Phil MacDonald, CEO, Ember and Shirley WWF UK	45
Grantham Research Institute, London School of Economics (LSE)	47
Dr N E. Vaughan, University of East Anglia (UEA)	48
Carbon Capture and Storage Association	48
Prof P Ekins, UCL	49
Bristol Green Capital Partnership	50
Dr P Dodds, University College London	50
London Councils	51
Dr Cristina-Steliana Mihailovici	52
Grantham Research Institute, London School of Economics (LSE)	53
Green Alliance	54
Greenpeace UK	55
Green Innovation Policy Commission	57
A Froggatt, Chatham House	58
Grantham Research Institute, London School of Economics (LSE)	59
Aldersgate Group	60
Institute and Faculty of Actuaries	60
Institute and Faculty of Actuaries	62
Carbon Watchdog	63
K Rigby	64
Global Warming Policy Foundation	64
Scottish Carbon Capture & Storage	65
Scottish Carbon Capture & Storage	65
Prof. M Bradshaw, UK Energy Research Centre (UKERC)	66
Oil Change International	67

Global Witness	69
Scottish Carbon Capture & Storage	70
Platform	71
N Hargreaves	72
Community Energy England	73
T Braunscholtz-Speight, Tyndall Centre for Climate Change Research, Department of Mechanical Aerospace and Civil Engineering, Faculty of Science and Engineering, University of Manchester	75
Prof K Chalvatzis, University of East Anglia (UEA)	76
Dr C Wilson, University of East Anglia (UEA)	77
Power to Change	78
BEAMA	79
Enertechos	80
S A Swan	82
R Pumfrey	82
Prof. L Sansom, Cranfield University	82
Nuclear Industry Association	83
Stop Sizewell C	84
PCAH (Parents Concerned About Hinkley)	85
Nuclear Industry Association	86
R Fulcher	88
C Wilson	88
C Megson	88
Dr W Bodel, The Dalton Nuclear Institute at The University of Manchester	89
Prof. F Livens, The Dalton Nuclear Institute at The University of Manchester	91
C Parry	92
Marine Energy Council	93
The European Marine Energy Centre	93
M Powner	94
Bristol Green Capital Partnership	96
Prof. S Bridle, Department of Physics & Astronomy at The University of Manchester	96
Aldersgate Group	97
G Elliott-Smith	97
Prof. M Shaver / Dr M Burgess, Both University of Manchester	98
D Chapman	99
Prof. W Holderbaum, University of Reading	99
Dr C Hoolohan (lead) and Dr A Browne, Tyndall Centre for Climate Change Research, The University of Manchester	100

CPRE, the countryside charity	102
J Smedley	103
P Chandler	103
Suffolk Energy Action Solutions	104
V Saunders	105
T Munden	106
L Walker	107
M Challoner Jones	108
C Allaby	108
A N Morley	108
A Bullard	109
E A Spain	110
Mrs P Dorcey	111
A Cardy	112
The Aldeburgh Society	113
F Gilmore	114
R S Pearce	115
M Mahony	117
M Manakides	118
R Farquharson	119
S J A Ive	119
S Steen	120
R Cooper	122
N Thorp, Beach View Holiday Park	123
W R Halford	125
L & D Chadwick	127
P Chadwick	128
Mr A Thomas	129
E Thomas	130
D Steen	131
Save Our Sandlings	131
N Thorp	132
F Cramb	134
CPRE, the countryside charity	135
Suffolk Preservation Society	136
V Hambley	137
B Chadwick	138

National Grid	139
Institute and Faculty of Actuaries	141
Which?	142
Which?	143
Which?	145
Which?	146
Which?	148
J Shepherd	149
Arco	150
London First	151
Policy Connect	154
Policy Connect	153
Dr G Dibb, University College London (UCL) Institute for Innovation & Public Purpose / UCL Public Policy	154
Aldersgate Group	155
AIRTO (Association of Innovation, Research and Technology Organisations)	156
Aldersgate Group	157
Chartered Management Institute	158
W Gammon, Church of England	159
Dr P Dodds, University College London	160
AIRTO (Association of Innovation, Research and Technology Organisations)	161
Photonics Leadership Group	162
AIRTO (Association of Innovation, Research and Technology Organisations)	163
Prof. T Kenyon, University College London (UCL)	164
Dr A R Goncalves de Pinho, University College London (UCL)	165
AIRTO (Association of Innovation, Research and Technology Organisations)	167
London First	167
Daphne Jackson Trust	168
Centre for Ageing Better	169
Centre for Responsible Credit Ltd.	170
A Taylor	171
StepChange Debt Charity	172
J Southern	176
Power to Change	176
ShareAction	177
J Patel	178
National Federation of Retail Newsagents	180
Dr B Reddy, University of Cambridge	181

J D Johnson	182
High Speed Rail Group	182
Wood Panel Industries Federation	183