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SNP Energy policy – Callum McCaig MP

The abolition of DECC – Statement from Angus MacNeil

The new department – Department for Business Energy and Industrial Strategy

ENERGY FOCUS



~~Didcot~~ **DECC demolished**
DBEIS rises from the ashes

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The journal of



PGES
All-Party Parliamentary Group
for Energy Studies



The All-Party Parliamentary Group for Energy Studies

Established in 1980, the Parliamentary Group for Energy Studies remains the only All-Party Parliamentary Group representing the entire energy industry. We champion cross-sector energy research and development. The Group's membership is comprised of over 100 parliamentarians, 100 associate bodies from the private, public and charity sectors and a range of individual members.

Published three times a year, Energy Focus records the Group's activities, tracks key energy and environmental developments through parliament, presents articles from leading industry contributors and provides insight into the views and interests of both parliamentarians and officials.

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Contents

Foreword Ian Liddell-Grainger MP, Chairman of PGES	3
Decarbonising Heat: Green Gas Mike Foster, Chief Executive – Energy & Utility Alliance (MARCH SPEAKER MEETING)	4
Decarbonising Heat: Supply of Renewable Gas Tony Nixon, Strategy and Innovation Manager – National Grid (MARCH SPEAKER MEETING)	6
Decarbonising Heat: What nest for the gas Grid? Neil Schofield, Head of External Affairs – Worcester Bosch (MARCH SPEAKER MEETING)	8
Academic Review - the future for energy Professor David Elmes, Warwick University (APRIL SPEAKER MEETING)	10
Academic Review - the energy trilemma Professor Gavin Gillmore, Kingston University (APRIL SPEAKER MEETING)	12
Academic Review - Change Ahead: Energy for Transport Doctor Adam Chase, E4Tech (for Imperial College) (APRIL SPEAKER MEETING)	14
SNP Energy Policy Callum McCaig MP, SNP Energy Spokesman (MAY SPEAKER MEETING)	16
PGES Summer Reception	18
Obituary - David Jefferies, CBE, CCMi, FEng, FIEE	20
Statement from Angus McNeil MP Chairman, Select Committee on Energy & Climate Change, on the abolition of DECC	21
Department for Business, Energy and Industrial Strategy The full list of ministerial responsibilities in the Department for Business, Energy and Industrial Strategy	22
Departmental Statements Written and oral statements	24
Parliamentary Record Select Committees, oral questions, debates and legislation	27

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CHAIRMAN'S FOREWORD



Every time I start this foreword, I write that we live in interesting times, but the past few months have been like no other – and certainly interesting for both UK energy policy, and for PGES.

However, I must add a personal sad note to reflect on the loss of David Jefferies CBE, who died earlier this year. It was with great sadness that we heard of the loss of David, who was a founding member of the group, was elected as a Life Member many years ago and served on Executive Council until his death in March. We will miss both him and his insight, charm and kindness.

This edition of *Energy Focus* is being published as the repercussions of the EU Referendum result to leave Europe are still being felt. We have a new Prime Minister, will have elections for the Leader of the Opposition, a new leader of UKIP, a new leader of the Green Party. DECC has been dismantled and a new department created, the Department for Business, Energy & Industrial Strategy.

Energy is bound to be affected by at least some of this.

The Group is well placed to be at the heart of helping energy policy makers to access the knowledge and understanding that is in the energy industry and academia. Our programme for the remainder of the year includes some important speakers as well as our House of Lords Dinner, which will be preceded by a new PGES Energy Policy Workshop.

That's why, whatever the future may hold for UK energy with the UK separate from the EU, I am confident that the Parliamentary Group for Energy Studies, along with its members, will be at the forefront of the policy discussion.

Ian Liddell-Grainger MP
Chairman, PGES
An All-Party Parliamentary Group

DECARBONISING HEAT: GREEN GAS

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MARCH SPEAKER MEETING: Address to the All-Party Parliamentary Group for Energy Studies



King Canute could not turn back the tides; he acknowledged his powers were limited. Similarly, UK politicians must recognise that our geographic location, climate and weather patterns are major determinants of future energy policy and that they can try but will fail to alter them. The energy trilemma, a phrase that rightly suggests the difficulty in balancing the competing demands of affordability, reliability and sustainability, should be set against the UK's particular energy needs.

As a result of natural gas abundance, the UK has the world's leading gas grid infrastructure in place, directly supplying the energy to heat 85 per cent of UK homes. It would be a travesty not to use this existing infrastructure as part of the solution to the trilemma, and "green" gas could be the key.

Heat demand is seasonal, no surprise there, but its peaks during the winter either need to be met by supply, or people will go cold, and no politician wants

that. Switching away from gas heating will mean households face considerable up-front costs, which are simply unaffordable. A recent study of Bridgend, produced by Wales and West Utilities, suggest that 81 per cent of households simply do not have the cash at their disposal to make that investment, without massive subsidies.

There is no definition of what "green" gas is; indeed this is part of the attraction in that there is no winner or silver bullet but instead

a range of green gases. Perhaps "low carbon" gas is a better description. First off the blocks is biomethane. This is the gas captured from waste processing, typically anaerobic digestion. The technology is proven, it has worked for years. Companies like Severn Trent clean up the biomethane from their Minworth sewerage works and inject the "green" gas into the grid.

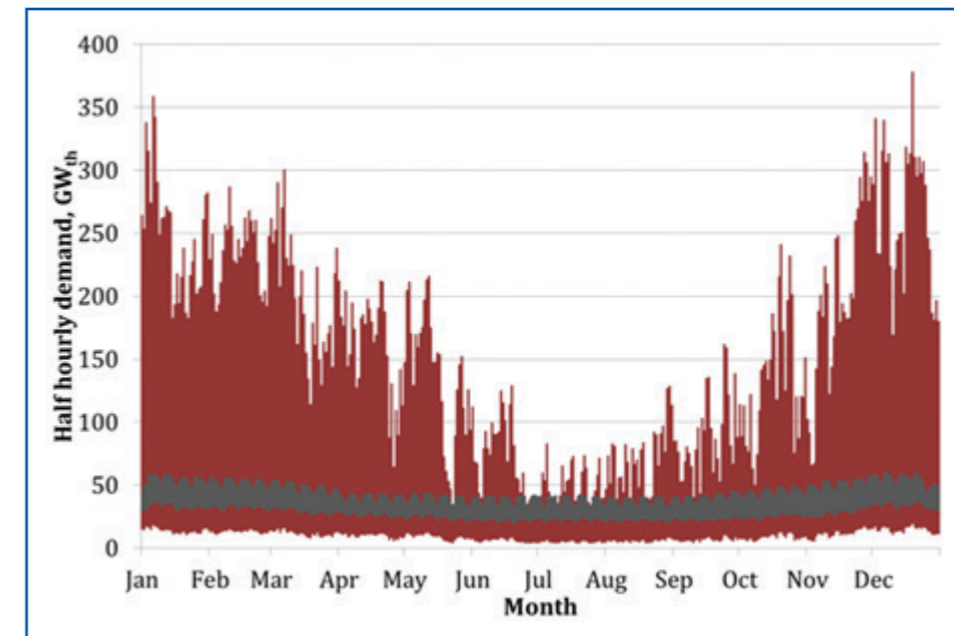
BioSNG is next; a "green" gas that achieves its status because it uses waste materials, usually sent to landfill or incineration, to create the gas. The process is technically complex, it involves Advanced Plasma technology. Ofgem have recently awarded National Grid funding to develop a commercial scale plant in Swindon, having seen the success of smaller trials of the technology. The alternative use

of waste gives the gas its "green" credentials. The Swindon plant envisages supplying gas for HGVs but there is nothing to stop it being fed into the gas grid for everyday use once it is blended to reach the gas quality standards required.

Another "green" gas is hydrogen, currently produced from natural gas using Steam Methane Reforming, where the carbon can then be captured. The question is how much hydrogen can be used and in what manner? It is possible, within existing gas quality guidelines, to mix up to 2 per cent of hydrogen into the blend that flows through the gas grid. Some studies suggest that up to 20 per cent might be feasible – remember this makes the overall mix of gas "greener". However, Northern Gas Networks are conducting a feasibility

study into 100 per cent hydrogen through the gas grid. Their Leeds 21 study is arousing considerable interest within the industry on the basis that it envisages using the existing gas grid, conventional heating systems such as central heating in the home but in a completely carbon free way.

This article is not designed to reach the conclusion that one single option can solve the UK's energy trilemma, there is no silver bullet. However, green gas, whatever the source, offers a viable way forward using our existing gas infrastructure. It means not turning our back on gas but embracing it. Overall, it could prove to be the most cost effective way of keeping people warm and meeting our international climate change obligations.



Half-hourly Heat and Electricity Demand

DECARBONISING HEAT: SUPPLY OF RENEWABLE GAS



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MARCH SPEAKER MEETING: Address to the All-Party Parliamentary Group for Energy Studies

Within the UK, the gas industry has been able to demonstrate it can facilitate the development of a renewable gas market through anaerobic digestion with over 50 plants connected producing enough gas to supply 155,000 homes (2TWh / annum) since 2013. This process can breakdown food waste, sewage and crops to turn into gas for injection into the grid.

However, National Grid and its partners have taken this to the next level in scale with the development of Bio Substitute Natural Gas (BioSNG). This technology can secure low carbon heat to millions of homes in a cost effective way for between a third to a half of all domestic customers served today.

Importantly, renewable gas requires little or no new infrastructure to replace fossil natural gas and can be injected

into the existing pipework – straight to people’s homes. This is sustainable, flexible, economic solution that could help the government meet its sustainability target. If more renewable or low carbon gas can be piped through the gas network then the life of the existing network, already substantially depreciated in terms of cost to customers, can be extended and puts the UK on the right trajectory to meet its carbon reduction targets.

Feedstocks – Is the source of energy sustainable?

Various experts have reviewed the availability of feedstocks including the Climate Change Committee. In their report on Bioenergy they concluded that a reasonable share of potential sustainable bioenergy supply could extend to 200 TWh of primary energy

demand in 2050, which would equate to between 70% to 100% of future domestic demand.

The dominant source of indigenous biomass is from waste and agricultural residues. These are seen as reliable feedstocks into the future as waste generation is unlikely to reduce significantly, even with increased recycling, as that will be countered by population growth.

How it works

The BioSNG process involves a number of stages and chemical processes to convert the waste into syngas and then convert into methane product and carbon dioxide by-product.

The three main process blocks are:

1. *Gasification* – production of synthesis gas (syngas) from

biomass-rich waste-derived fuels, followed by cooling, cleaning and polishing.

2. *Methanation* – including water-gas shift and methanation of the clean synthesis gas – both established technologies.

3. *Upgrading and distribution* – ensuring product meets grid standards and injecting it into the grid.

Demonstration and Commercialisation

To showcase the potential of BioSNG National Grid Gas Distribution, advanced waste to energy and fuels company Advanced Plasma Power, clean energy firm Progressive Energy and Schmack Carbotech have built a test plant at Advanced Plasma Power’s headquarters in Swindon.

This test plant is designed to demonstrate the technical potential of producing green gas, and has moved the technology from concept to reality. It will also act as a test bed to optimise the overall performance of the system.

Work has now started on a full commercial demonstration plant in order to encourage the roll-out of a large number of BioSNG plants across the UK. The commercial demonstration plant will be capable of heating 1600 homes or fuelling 75 heavy goods vehicles. It will enable the industry to better understand the contractual, commercial and engineering issues related to the construction and operation of such facilities, the offtake of the fuels it produces and the supply of feedstocks.

Ultimately it will help inform policy and investment decisions so that engineering contractors are willing to supply BioSNG facilities under a fixed price.

The journey to decarbonising heat

We use 321 TWh to heat our homes each year – that’s the equivalent of heating the water to run eight baths per day per household.

There is an opportunity for the UK to be less wasteful and reduce domestic demand by a third. So what does the opportunity look like?

- Seven million homes would benefit from solid wall insulation, which would reduce demand by 10%.
- The continuation of A-rated boilers at current replacement levels will reduce demand by 10%.
- Smart thermostats are beginning to catch on. If they’re GPS-enabled, and can turn on and off when needed, estimates suggest a further 10% reduction in demand.

Realistically we envisage BioSNG and anaerobic digestion facilities contributing in total around 80 to 120 TWh of renewable gas for injection into the gas grid, which combined with the above measures would result in renewable gas supplies for half our domestic energy needs. We believe this is a great opportunity to take further.

Addressing the gap

Should we choose the above path to decarbonising heat, the next stages would be to consider the introduction of Hydrogen into the existing gas networks across our cities and towns in the UK.

Hydrogen is produced effectively today, most commonly through Steam Methane Reforming, which allows natural gas to be turned into hydrogen and the carbon extracted. Combined with carbon

capture and storage the hydrogen produced under this process would be equivalent to other renewable sources.

The gas industry is leading on a number of projects to demonstrate the viability and flexibility that already exists to introduce hydrogen safely into the network.

National Grid has requested funding through the RII0 Network Innovation Competition, run by Ofgem, to demonstrate the capabilities of the network. The objective is to demonstrate that natural gas containing levels of hydrogen beyond those in the Gas Safety (Management) Regulations can be distributed and utilised safely & efficiently in a representative section of the UK distribution network. Working in partnership with Keele University and utilising the existing gas infrastructure on site the project has the potential to facilitate 25TWh of decarbonised heat, and more by unlocking extensive hydrogen use as exemplified by the Leeds H21 project developed by Northern Gas Networks.

Find out more about National Grids views on the Future of Gas at www.nationalgrid.com/futureofgas



DECARBONISING HEAT: WHAT NEXT FOR THE GAS GRID?



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MARCH SPEAKER MEETING: Address to the All-Party Parliamentary Group for Energy Studies

When I was asked to discuss the subject of 'Decarbonising Heat', the first thing that struck me was just how refreshing it was to see the very word 'heat' on the agenda. For 15 years, I – like many others – have been trying to have heat discussed as part of the ongoing energy debate because it represents 45% of the energy we consume as a nation; yet it would be fair to say it doesn't quite get the attention it deserves. The energy debates of the past have frequently been centred around electricity and keeping the lights on, yet the ratio of heat to electricity consumption within the home is around 3:1.

With nearly three quarters of the energy we consume within the home used for heating and hot water and around 85% of UK homes connected to the gas network, the significance of gas boilers within the ongoing energy debate is huge. 1.6 million boilers are installed in the UK every year, which equates to around 5,000 boilers a day; ultimately representing an industry worth somewhere in the region of £3.5 billion a year. Despite rarely grabbing the headlines, the heating industry is a real British success story and a sleeping giant when it comes to making an impact on our emissions.

Leading the way

The fact that the UK has the largest gas boiler market in the world is perhaps only natural given that we were actually the first to harness gas. Having been discovered by Scottish engineer, William Murdoch in the 1790's, we have continued to use it as a fuel for over 300 years. Murdoch's experiment with gas lighting set us down a path of longstanding industry pedigree in the UK.

What these points merge together to create is an argument that says in order to decarbonise heat, we should be asking how we decarbonise gas. The late Sir

David MacKay, in his capacity as scientific advisor to DECC, suggested that we should convert all 26 million of our homes to use electric heat pumps – rather than a gas boiler – as a primary source of heating and hot water. Unfortunately, despite attempts to stimulate the market for heat pumps through initiatives such as the Green Deal and Renewable Heat Incentive (RHI), sales stand at around 15,000 per year – the equivalent to just three days' boiler sales. The harsh reality is that renewables aren't making any impact on the Government's challenging domestic emissions targets which leaves us needing to explore the alternatives.

As a nation, we are hugely successful at making effective use of gas in our buildings and specifically, our homes. Therefore it seems the most sensible route forward would be for us to maintain this proven infrastructure and decarbonise gas. After all, why fix something that isn't broken?

A look into the future

Going back to William Murdoch, the kind of coal gas he invented – and that we used in the UK until the discovery of North Sea gas in the 1960's – actually contained around 50% hydrogen. Ironically, this is the very same element now being dubbed the future of our gas network.

There are already Government-funded investigations taking place to explore the potential for natural gas to be decarbonised through its conversion to hydrogen. This approach would not only allow a boiler to be kept as the lead heating technology within a property, but would also offer extremely low carbon, high temperature heating – with no need for insulation levels to be changed or heating systems to be overhauled. While extending this nationwide may yet be decades away, early indications suggest the approach is certainly feasible, not least because hydrogen can be produced as a by-product of other industrial processes such as nuclear power generation or hydropower.

A changeover as significant as this one might seem daunting, but so did the move from Town gas to natural gas in the late 60's and early 70's. As an apprentice with British Gas at around that time, I witnessed first-hand what a phenomenal exercise the conversion was with nowhere near the technology we have access to today. The belief back then was that it was only a matter of time before the nation would run out of gas altogether – speculation we now know not to be true, even before we consider the exploration of shale. Gas is still the most efficient and least damaging of the fossil fuels, so while a decision to convert the

grid wouldn't be taken lightly, we do at least have a track record of having carried out a not dissimilar overhaul in the past.

If the ultimate objective is to decarbonise heat, we would be foolish to try and do so by removing gas from 26 million homes. The UK is a gas-fuelled nation with a successful industry and an established infrastructure that works incredibly well. Why not leave our network buried in the ground and remove the carbon? The technology to make domestic appliances compatible with hydrogen is relatively straightforward, but given that the cost of doing so is relatively expensive, political will is sure to prove the deciding factor if we're really serious achieving our goal.



ACADEMIC REVIEW: THE FUTURE FOR ENERGY

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APRIL SPEAKER MEETING: Address to the All-Party Parliamentary Group for Energy Studies

At Warwick Business School, we look at how the industries that supply and use energy around the world are changing, what new business models are gaining success, how management practices are changing and how is the relationship evolving between those industries, governments and the public.

When discussing this with companies and policy-makers we debate the place where certain countries or markets lie on a set of spectra. I'd like to start by discussing these different spectra and then consider who is fit to take on the challenge:

Supply or Demand

There's long been a culture of seeing energy as a supply side challenge – find more oil or build another power station and the problem is sorted.

Only in 2012 did the energy industry bible, the International Energy Agency's World Energy Outlook start including a chapter on energy efficiencyⁱ. The IEA has recently started gathering data on the future investment needed to meet the world's needs for energy. In the 2014 World Energy Outlookⁱⁱ, future capital

investment in the more efficient use of energy was forecast to be just \$8Trillion out of \$48Trillion over 2014-2035 that included both the supply and demand sides of the equation – that's just 17% on the demand side or four times more investment in the supply side. In 2015 World Energy Outlookⁱⁱⁱ, forecast demand side investment had risen to nearly a third (32%) or 22Trillion out of \$68Trillion over 2015-2040. Now two data points are not a trend but as the goal here is to look into the future, this is a shift in investment from more supplies to tackling how energy is used in buildings, transport and industry. So fewer oilfields or power stations but more efficient cars, buildings and industrial processes.

Central or Distributed

Along with the supply side culture there has been a big is better culture. Big, centralised projects connected to a grid offer cheaper energy. With just a few signatures on a few big deals, the problem is sorted.

Locally produced and consumed energy is now more common; local solar and wind for example. This will change the way our

distribution networks and even the grid will need to operate. But the real prize is how this allows the more efficient use of energy overall by using the heat produced when electricity is generated - combined heat and power (CHP) systems at various scales and heat networks.

DECC's 2013 strategy for "The Future of Heating"^{iv} laid out the challenge that "Nearly half the energy we use in the UK is used for heating of one sort or another." I need to declare an interest here as part of my time is supported by the UK Research Councils to study heating and cooling as part of their End Use Energy Demand research programme – we see significant opportunities for the more efficient supply and use of heating and cooling. At the University of Warwick, we recently invested £10million in expanding our combined heat and power system and extend our heat network^v, something our Vice-Chancellor was happy to support when we explained how much it would reduce our gas bill, as it now has. Our use of CHP and a heat network takes the efficiency we use gas from 30-50% to 80-85% and save us 5000 tonnes CO₂ of emissions each year.

Smart or Dumb

Ask most people when did you last change your thermostat or reprogramme your central heating and hot water controls, you will get a blank look at best. The UK is in the midst of a major investment in the Smart Meter Rollout but interestingly we see the new generation of smart thermostats racing up on the inside lane. Whether from Nest, Hive or any other providers, discussion moves rapidly from smart thermostats to broader questions about the connected home and the internet of things. It's not just about energy; there's also security, wellbeing, entertainment, insurance and the apps that bring it all together. Google, Amazon, Apple, Samsung are all looking to take the lead with energy just one of many services.

There are two further spectra that we consider at the Business School but I'll keep my comments on these brief. Not because they're less important but they're more frequently debated at length in the UK.

Sustainable or Unsustainable

The challenges the UK faces in meeting its climate goals has been thoroughly analysed and the CCC's 5th carbon budget^{vi} is currently before Parliament. This sees significant decarbonisation of power, heat, buildings and transport, reflecting the need to address consumption as well as supply.

Governments or Markets

The Reset speech on energy policy by the DECC Secretary of State in November 2015^{vii} sought to redefine the relationship between state and markets. The UK has a history of raising energy to departmental status with more direct government involvement, then downgrading it. The challenge today is whether the transition we're now

in is ready for a lighter touch. Transitions need a long term view, the capabilities to innovate and the resources to invest in the changes needed.

Fit for the Challenge?

So if you choose a place along these spectra for a certain country such as the UK or even different markets within the UK, the question is then which industries involved in the supply and use of energy look fit for the challenge of achieving a different future. Competition used to be among the fossil fuel, supply side choices – Coal, oil, gas with the large power stations and the grid plus networks system we know today. Then renewables joined the supply side mix and we have seen their prices fall and installed capacity persistently beat our forecasts. While it has always been part of the mix, the question is whether the demand side will take an increasing role with a rising proportion of investment in more efficient buildings, transport and industrial processes.

There will always be a key role for Governments but let's look at the commercial players in this tournament. The oil and gas industry has long been the destination for much of the investment because it's had risks but delivered a high return. A 2014 look at dividend yield across various global industries put Oil and Gas second only to property development for top returns^{viii}. But the return on capital employed for the major oil and gas companies peaked in 2008, nearly halved by 2013^{ix} and now has slumped with hydrocarbon prices that look to be "lower for longer." Here in the UK, ONS statistics on company profitability show the North Sea oil and gas industry hitting an all-time low for net rate of return of 0.6% in Q4 2015, well below the UK's manufacturing sector at 7.2% or the service sector at 22%^x.

Returns in oil and gas measured this way used to vary between 20-60% and consistently outpaced the other sectors.

Across Europe, the power sector is having a tough time too. In 2013, Gerard Mestrallet, the then CEO of GDF Suez (now renamed Engie) led a delegation of the major power companies to the European Parliament and reportedly said^{xi} "European energy companies are experiencing difficulties for which there is no precedent: the impairment of their European assets, the early closure of power plants, and a reduction in investments amongst other problems. The entire sector's business situation is under severe pressure." Results since then have merely illustrated those pressures with losses and plans for companies like E.On and RWE to split themselves into "Old" and "New" parts.

Here in the UK, the CMA^{xii} investigation of energy markets is drawing to a close but I would suggest the broader structural challenges faced by the large power companies in Europe will have as greater an impact on their ability to invest in a different energy future.

If few governments have the resources to directly invest in large scale energy projects, this leaves the two traditional stalwarts of investment capacity looking smaller and less able to take on very large scale projects than in the past. So if we want to think about the future of energy, perhaps we need to think of a new mix between smaller and larger, be more joined up in considering consumption as well as supply, think more decentralised than central and consider smart as part of services that reach well beyond today's energy market. That expands the industries, companies, institutions and government departments involved.

i <http://www.worldenergyoutlook.org/weo2012/>
ii <http://www.worldenergyoutlook.org/investment/>
iii <http://www.worldenergyoutlook.org/weo2015/>
iv https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/190149/16_04-DECC-The_Future_of_Heating_Accessible-10.pdf
v https://www2.warwick.ac.uk/institute/news/intnews2/green_gown_2015/
vi <https://www.theccc.org.uk/publication/the-fifth-carbon-budget-the-next-step-towards-a-low-carbon-economy/>
vii <https://www.gov.uk/government/speeches/amber-rudds-speech-on-a-new-direction-for-uk-energy-policy>
viii http://about.bnef.com/content/uploads/sites/4/2014/08/BNEF_DOC_2014-08-25-Fossil-Fuel-Divestment.pdf
ix <http://www.guinnessfunds.com/wp-content/uploads/2014/06/2014.06-Return-of-returns.pdf>
x <http://www.ons.gov.uk/economy/nationalaccounts/uksectoraccounts/bulletins/profitabilityofukcompanies/octobertodecember2015>
xi <http://www.ft.com/cms/s/0/c5f0949e-9316-11e3-8ea7-001444feab7de.html#slide0>
xii <https://www.gov.uk/cma-cases/energy-market-investigation>

ACADEMIC REVIEW: THE ENERGY TRILEMMA

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APRIL SPEAKER MEETING:
Address to the All-Party
Parliamentary Group for
Energy Studies

The Energy Trilemma demonstrates that there is a balance required between energy security, equity and environmental sustainability. These terms can be defined as:-

- **Energy security – effective management of energy supply from domestic and external sources which includes energy infrastructure reliability and the ability of energy providers to meet demand.**
- **Equity – accessibility and affordability of energy supply across the population.**
- **Environmental sustainability – supply and demand side energy efficiency and the development of energy supplies from renewable / low carbon sources.**

What is the future for energy in the UK in the light of this?



If we consider two recent press stories one concerning 'fantabulous' results for the Gatwick oil well, and the other EDF and Hinkley delays – one might ask what is the future – hydrocarbons and nuclear? Government rhetoric certainly appears to revolve around filling our energy gap with shale gas (short-term) and nuclear (long-term) as base-line energy sources. In response to nuclear development delays the life of nuclear plants have been extended, and developing shale gas plays does not necessarily help our carbon budget, so we need to perhaps focus on other approaches.

There are many organisations focussing on this energy gap, with universities developing Energy research centres such as at Kingston University. Thirteen universities have also clubbed together to develop a national University Alliance Doctoral

Training Alliance (DTA) in Energy which will have 70+ Energy PhD students by the end of 2019. This should encourage those who seek to develop energy technologies. With more efficient renewables we can make a greater impact on carbon budgets.

Coming back to future UK Energy – there is much to commend a focus on energy efficiency. Perhaps we have not focussed enough attention on this? We all want to use, waste and pay less for energy. How can we then encourage people to take control of their own energy? The use of smart meters and understanding how we can best integrate smart systems into our decision making processes is one way forward. Smart meters / valves are only useful though if the way that we use such systems and how they relate to us is fully considered in the design process. Research at Kingston in Halls of Residence has shown that such systems can

lead to considerable savings (25% per year in energy bills).

Where other energy efficiencies are concerned – wind turbines can be made more efficient by utilising nano-coatings developed for aircraft which are designed to shed water, prevent the build-up of ice, improve fuel efficiency, reduce drag and improve performance. This is the focus of a British Council Newton Fund Workshop in China this August on 'Multidisciplinary issues of Wind Power in Cold Environments', when 17 early-career researchers will meet colleagues from China (the world's largest manufacturer of wind turbines). Ice formation on wind turbine blades can reduce power generation efficiency by as much as 50%. Similarly, the use of magnetic bearings means reduced wear on wind turbines components, maintenance being a significant issue for offshore fields.

One of the key aspects of UK government plans concerns shale gas development. However much is still unknown. Targets for exploration (e.g. Bowland Shale, north-east England) have been insufficiently characterized. In the USA 10+ wells / day are drilled to assess and develop shale gas. In the UK (due to political sensitivities and a lack of investment) only a handful have been drilled. Data on potential targets then is scarce and companies that have information are naturally unwilling to share. Many questions remain unanswered with different organisations holding fragmentary information. Some Universities are investing in their own research programmes – for example Kingston has a project to characterize Bowland Shale organic material. Shale gas is a logical way to bridge the energy gap but development continues to be hampered by poor

understanding of the resources beneath our feet.

Comments so far have concerned energy efficiency and generation with regards to domestic / business supply. However we also need to consider transportation. Recent announcements by VW concerning development plans for electric vehicles (EVs) after the diesel emissions scandal suggests where the future lies. EVs used to be seen as oddities with significant range issues. However some companies have made EVs fashionable. Good design will drive consumer confidence in energy efficient products. Kingston University have an e-bike (the Ion Horse) – an electric superbike (0-60 3 seconds, 160mph top speed, range 120 miles at legal speeds, 2013 e-bike record holder). Such headline products helps to popularise EVs.

It is interesting to note that UK Research Councils are currently growing investment in energy storage, efficiency and whole energy systems, although the biggest budget is for fusion research.

So to summarise what the keys are for the future for UK energy.

- The training of professionals so that they are not just engineers but can relate to the social, economic and political aspects of energy, to enable better communication with members of the public and politicians. Groups such as the PGES encourage this dialogue. It is easy for an academic to focus on detail and not see the bigger picture, and perhaps for politicians to not fully understand detail. Now is the time to enter into such dialogue and help organisations such as the DTA Energy programme design projects that make a real difference.

- Efficient use of energy and better design. Smart meters are only as smart as designers and users. We need to think more about the technology-user interface.
- Lastly we need to better quantify unknowns, e.g. shale gas.

So what are the solutions for our Energy needs? Is it in examples such as the 240m solar tower (250MW nameplate capacity; 1% of Israel's electricity); the Swansea Bay Tidal lagoon (320MW installed capacity, 155,000 homes, requested strike price £168 / MWh); or Hinkley nuclear power station (3.2 GW, 5 million homes, strike price £90 / MWh)? Whatever direction the UK takes, many potential developers are crying out for more stability in the energy sector for investors.

ACADEMIC REVIEW: CHANGE AHEAD: ENERGY FOR TRANSPORT

Doctor Adam Chase,
E4Tech (for Imperial College)
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APRIL SPEAKER MEETING: Address to the
All-Party Parliamentary Group for Energy Studies



It is axiomatic that there will be change in the UK energy system. However, 'energy' is often used as shorthand for electricity which is misleading and also ignores the important aspects of change that are system-wide. This talk provides a different perspective by looking at changes expected in one of the major energy end use sectors – road transport.

E4tech is a strategic consultancy whose work is focused on sustainable energy, working with companies, investors and government organisations worldwide since 1997. An extensive body of work on vehicles and fuels informs our perspective on the energy transition in all forms of transport.

Globally 23% of man-made CO₂ emissions are caused by transport, three quarters of which are from road transport, split roughly evenly between heavy duty vehicles (trucks and buses) and light duty (cars, motorcycles and vans). Road transport is a material global emitter, a problem compounded by the relative difficulty of applying

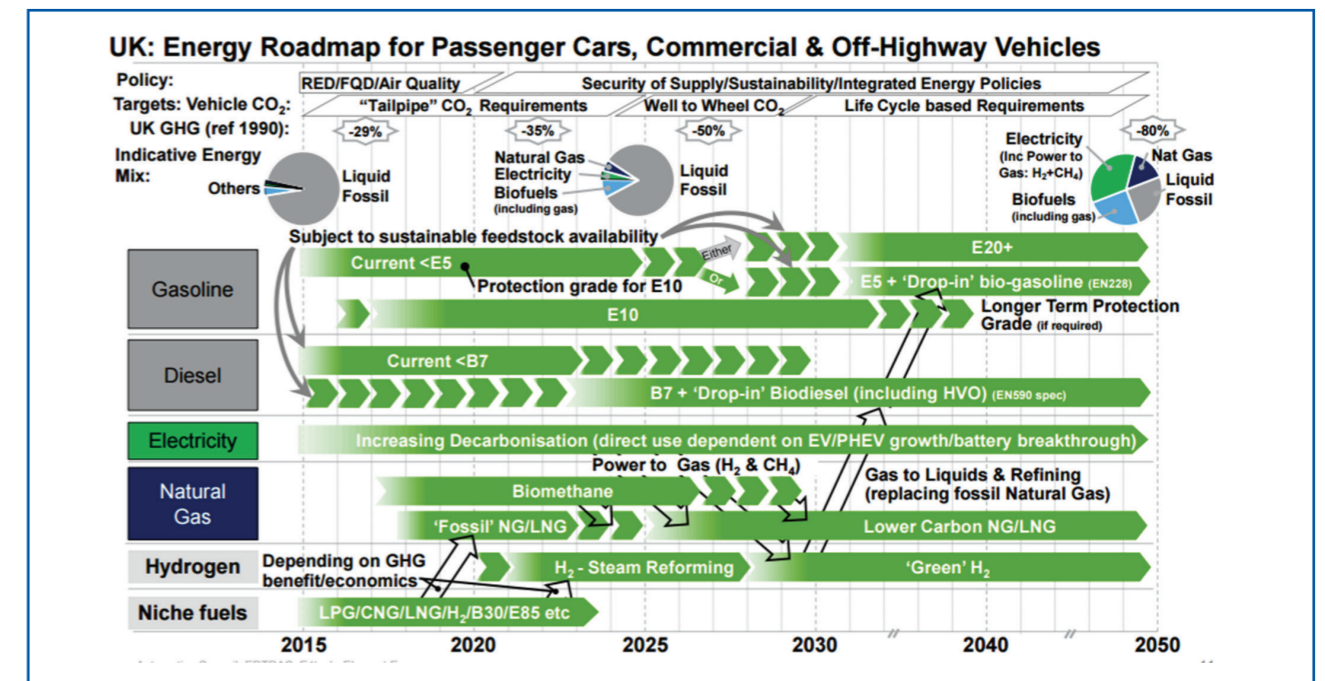
alternatives and the rising demand for transport globally. In the UK, transport is the only energy use to have increased in the four decades to 2010, though efficiency improvements have led to a modest decrease in recent years. This is as a result of vehicle efficiency standards, now widely recognised as a vital mechanism by energy and climate policymakers, and one that industry has responded to effectively.

Efficiency standards define a destination for auto companies, but it is roadmaps and the innovations within them that define the routes. Numerous such roadmaps have been developed, and it is instructive to look at those of the Automotive Council – a UK Government and industry co-operation – which are developed with a wide stakeholder consensus. The roadmap for energy, below, illustrates the complexity ahead.

In practice not all of these energy vectors can dominate and policy has a vital role to play. However policy should create sufficient certainty about the goals without preselecting the routes, allowing

different options to flourish in accordance with their potential. An important additional factor for road transport is the local pollution that accompanies many of the fuels (not just diesel). The current energy mix for road transport is comprised almost entirely of liquid fuels, largely of fossil origin. The rate of fleet turnover for all vehicles, and the difficulty of converting long distance heavy (i.e. high energy consuming) vehicles to other fuels, mean that in 2030 at least three quarters of the energy mix will remain liquid fuels. Future solutions need to address this reality and it is best to consider light and heavy duty vehicles separately.

Light duty vehicle powertrains are undergoing more innovation than at any time in the past 100 years. Not only are the immediate pressures of efficiency targets leading to dramatic improvements in internal combustion engines with more to come, but new energy vectors are becoming serious alternatives. Biofuels already make a small but growing contribution and hybridisation is a 'given' for most new cars, but it is when



the vehicle can be recharged externally that the energy equation changes significantly. Plug in hybrids and full battery electric vehicles are coming to market in force, offering potential real world efficiency gains, access to increasingly zoned cities and a driving experience that drivers enjoy. Drawbacks remain for consumers in the form of higher purchase cost and slow recharge time. Whilst both will be mitigated to some extent by innovation, there are other considerations for the energy system that remain unresolved. Use of electricity to decarbonise transport relies upon accelerating efforts to decarbonise electricity generation. Also, recharging places demands on local electricity distribution infrastructure that impose upstream costs which need to be reallocated.

System considerations lead to hydrogen, sometimes called the 'ultimate fuel' due to its zero emission potential. Low carbon hydrogen can be made from a variety of sources such as natural gas with CCS, or (intermittent) renewable electricity for which it offers a low cost option for

long term bulk storage. Fuel cell cars (and buses) are entering the market in limited numbers, but they rely upon hydrogen infrastructure development which is in its infancy and has an attendant first mover disadvantage, with a dozen stations currently being built in the UK. Hydrogen and fuel cell vehicles are at the extreme end of the energy economist's spectrum of market failures, but their potential benefits in the long term mean that serious attention is still merited.

There are several energy options for light duty vehicles and it is certain that the powertrains of the future in this sector will be highly electrified, in some cases in combination with an alternative form of propulsion system for increased range. **Heavy duty vehicles** on the other hand have a much smaller number of viable alternatives, with electric propulsion an unrealistic prospect for long distance transportation (without viable technologies to transmit power to moving vehicles or store large volumes of hydrogen). Sustainably sourced biofuels offer a realistic option for lowering

CO₂, especially if made in a form that can be blended into diesel without requiring engine changes. Natural gas and its low carbon substitute biomethane are a near term alternative, although methane leakage throughout the supply chain negates some of the benefits. In the medium term heavy duty vehicle fuels could also include renewably produced alcohols, ethers and synthetic fuels. Pragmatic vehicle operators will only consider alternatives if there are obvious economic and technical advantages relative to diesel, though it is worth noting that there are twenty times fewer heavy than light vehicles and even fewer buyers (fleet operators) to be influenced.

In summary, the energy vectors for transport are in flux and are increasingly linked to the wider energy system. Future policies should therefore be considered in that context. The destination is becoming clear, but there are many routes and none of them are easy. One thing is certain however, policy has an increasingly valuable role to play in reinforcing the direction and speed of travel.



SNP ENERGY POLICY

Callum McCaig MP, SNP Energy Spokesman
callum.mccaig.mp@parliament.uk

MAY SPEAKER MEETING: Address to the All-Party Parliamentary Group for Energy Studies

The SNP's energy policy is focused on taking the natural resources of Scotland and utilising them in the best way for long-term use and benefit to people living in this country, and on this planet. Scotland is an energy rich nation, yet levels of fuel poverty are unacceptably high. We need to change that, and we need to do it without compromising our environment and our safety.

There is potential for us to build on our impressive renewable deployment, if we take action now. Scotland can be a world leader in marine renewables by harnessing the skills and expertise of our globally renowned subsea sector. Over the past forty years we have witnessed remarkable engineering achievements in the oil and gas industry, so it makes sense to embrace that home-

grown intelligence and adapt it to other energy trades.

Using the powers at Holyrood, in particular: planning; building regulations; climate change legislation, we have pursued a different path from the UK Government. We have a ban on nuclear energy and a moratorium on unconventional onshore oil and gas extraction, and even took the step to designate energy efficiency as a National Infrastructure Priority.

We have pushed the powers at Westminster to change direction and support renewables; investment in carbon capture storage; change transmission charging that disincentivises electricity production in Scotland; undertake a full scale review of oil and gas taxation; and review the policy framework around electricity storage. Exporting

Scottish produced renewable electricity to the rest of the UK would be win-win. We would see investment and jobs in Scotland and cheaper decarbonisation for UK energy consumers.

In order to meet our ambitious climate change targets currently legislated for at 42% by 2020 (but with a commitment to increase this to 50%) the SNP-led Scottish Government has a commitment to see 100% equivalent of Scottish electricity consumption generated from renewables. It is important to note that this is not 100% of electricity consumption, as we believe thermal generation, particularly gas, is a necessary party of a balanced electricity mix.

In Scotland onshore wind is a success which we believe has a role to play in a balanced energy mix going forward, so it should be

supported in its efforts to reduce its costs through the CfD bidding process. The early closure of the Renewables Obligation and the prolonged uncertainty over future CfD allocation has in our view damaged investor confidence unnecessarily and will either make meeting decarbonisation unlikely or at very least more expensive.

Scotland has a quarter of Europe's offshore wind and tidal potential and a tenth of the wave potential so we are of the firm view that with the right support marine renewables in Scottish Waters will play a key role in electricity generation and supply to our nation and beyond. Under the SNP's leadership we are at the forefront of marine renewables development. Statoil is to commission the world's first floating wind farm off the coast of Peterhead, and the Scottish Government has supported the development of wind and tidal electricity generation through Wave Energy Scotland and the world-leading European Marine Energy Centre on Orkney.

The closure of Longannet power station in March signalled the end of coal fired energy generation in Scotland and was hastened by the additional costs that producers there faced through discriminatory transmission charging. Longannet had a £40m per annum charge to connect to the grid, and a new Combined Cycle Gas power plant with connection charges in the region of £20m; an identical plant in the

south of England would be paid to connect. Locational Transmission Charging is failing Scotland and its defined purpose of promoting electricity production close to dense population (read London) is not working. Like the UK generally, Scotland needs a balanced energy mix - locational transmission charging is the greatest impediment to that and it must be scrapped.

The SNP has a long standing opposition to nuclear power based on cost and decommissioning. Utilising planning legislation we took the position that there will be no new nuclear in Scotland, but the Scottish Government has worked constructively with EDF, the owners of Hunterston and Torness, to safely extend the operation lifetimes of those two stations. The plants themselves come offline in the 2020s and we want to see the capacity replaced with renewable combined with CCS enabled gas plants. The SNP group at Westminster has opposed the construction of the new Hinkley Point C reactor and in our alternative queen's speech called for the programme to be scrapped and investment redirected to renewables, electricity storage and CCS to provide a secure, safe and affordable energy supply.

The North Sea oil and gas sector remains fundamental to the UK's primary energy demand. Regrettably, successive UK Governments have not followed the SNP's calls for the creation

of an Oil Fund to smooth out the peaks and troughs in what is a volatile commodity market - a move which would undoubtedly have helped deal with the current low oil price. Despite the incredibly difficult economic position in the North Sea, production did rise last year and the industry made strong efforts to reduce costs to adapt to a 'lower for longer' business. We welcomed the moves to reduce the headline rate of tax, but remain of the view that a full sale review of the tax system is required if the aims of the Wood Review to Maximise Economic Recovery of the 20bn barrels is to be achieved.

Devolution is meant to provide the nations of the UK with the opportunity to do things differently, but in when it comes to energy it is failing. At the General Election the SNP won more than half the vote, the Tories won only a single seat, but there is no flexibility in the UK Government's energy policy to allow a different approach in Scotland. Supply margins are tightening and major questions exist about the twin pillars of their policy of Nuclear and Fracking. A diverse energy mix is required and in Scotland there is both potential and desire to deliver that, but without recognition of the differing needs our enormous potential will not be realised. Without change we are facing a tremendous waste not just for the people of Scotland, but for everyone on these isles.

PGES SUMMER RECEPTION TUESDAY 29TH JUNE 2016

Sponsored by
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Guest of Honour
Philip New, CEO of Energy
Systems Catapult



Philip New, Steven Edwards, Elizabeth Warwick, Ian Liddell-Grainger



Ian Liddell-Grainger MP



Stephen Edwards
Wales & West Utilities



Philip New
Energy Systems Catapult



John Quigley, Andrew Cowgill, Barry King,
Tahir Majid, Will Chilvers



Andrew Furlong, Louise Kingham,
Graham Ward, John Hall



Paul Troughton, Patrick Liddy,
Lord Redesdale



Ann Robinson, Louis Pickersgill



Martin Fry, Graham Ward, Louise Kingham



Mike Gibbons, Angus MacNeil MP,
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Claire Nequest, Louis Pickersgill, Paul Needley

OBITUARY

David George Jefferies, CBE, CCMI, FREng, FIEE
Born December 26 1933, died March 19 2016

David Jefferies, long serving member of the PGES Executive Council and former chairman of National Grid, died suddenly aged 82 after returning from a holiday in South Africa.

He was one of our founding members and was awarded Life Membership many years ago. As such was an active supporter of the Group, regularly attending meetings and events.

Keen to encourage, taking time to offer help and assistance, David was much respected figure in energy.

He played a central role in the privatisation of electricity and was later caught in a fierce political row over remuneration for utility chiefs. He was an electrical engineer with unusually wide hands-on experience of the distribution and generation of power.

A man of great persuasive charm, David was a formidable negotiator. The structure put in place in the 1990 privatisation was much in tune with his thinking.

David was born at Newham in East London on Boxing Day 1933 and educated at local schools, with an interlude as an evacuee in Devon during the war. He studied electrical engineering at South East Essex College of Technology before joining the Southern Electricity Board, where he rose to be area manager for Portsmouth in and chief engineer.

David served as chairman of London Electricity Board before becoming deputy chairman of the Electricity Council in the run-up to privatisation. He moved to the Central Electricity Generating Board (a rare step) as director for the North West. Subsequently he was also chairman of Viridian, the parent company of Northern Ireland Electricity.

David served as a director of the Strategic Rail Authority, was chairman of the construction and civil engineering group Costain and was involved in a number of smaller companies. In later years he travelled to many other countries offering advice on industry restructuring and the introduction of private capital.

He was at various times president of the Institute of Energy, the Electricity Association and the Institution of Electrical Engineers, a board member of the Royal Institution and master of the Wax Chandlers' Company. He was appointed CBE in 1990. He will be sorely missed by the Group.



David at one of the many PGES functions he attended. David was an active member of PGES and served on Executive Council for many years.

STATEMENT FROM ANGUS MACNEIL

On 14th July 2016, Angus Brendan MacNeil MP, Chair of the Energy and Climate Change Committee, issued the following statement in response to the announcement that the Department of Energy and Climate Change is to be abolished.

"The Government has announced that it will abolish the Department of Energy and Climate Change and transfer its functions to other Government Departments, notably the new Department of Business, Energy and Industrial Strategy. The exact details remain unclear.

My Committee's reports have recently identified serious concerns about reduced investor confidence in the UK energy sector. An historic agreement at COP21 in Paris last December still requires ratification, and the fifth carbon budget is still yet to be set in law. While Members of my Committee differed in their views on the European Union, the immediate impact of the vote to leave has been to amplify uncertainty at a time when major investment is needed to deliver affordable, clean and secure energy. In this context, I am astonished at the Prime Minister's decision to abolish DECC.

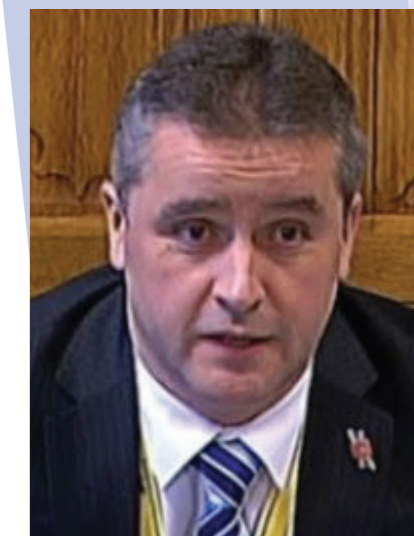
DECC's disappearance raises urgent questions. To whom falls the central statutory obligation, contained in the Climate Change Act 2008, to reduce the UK's carbon emissions by 80%

from their 1990 baseline? Which Department will take responsibility for the energy and climate aspects of negotiations to leave the EU? Who will champion decarbonisation in Cabinet? Who will drive innovation in the energy sector?

Turning to my Committee and the crucial role we play in scrutinising the Government's energy and climate change policies, we are established under Standing Orders of the House of Commons. There will be no immediate change to our remit, operations or membership, which can only be done by order of the House. I am immensely proud of our work over the last year to hold the Government to account on achieving a balanced energy policy, setting the agenda on an innovative future energy system, and influencing the Government's long-term approach to climate targets. Over the coming weeks I will speak to colleagues to explore how we can ensure that effective Parliamentary scrutiny on the crucial issues of energy and climate change continues."

When asked by *Energy Focus*, Angus added, "I HOPE that Theresa May is not taking her eye of the ball as regards to energy. Especially important around security of supply in coming winters - nothing ends a Government or a Prime Minister faster than an energy crisis."

On 18th July, the Prime Minister, Theresa May, MP, issued



a statement including the following:

"The Department for Energy and Climate Change and the remaining functions of the Department for Business, Innovation and Skills have been merged to form a new Department for Business, Energy and Industrial Strategy, bringing together responsibility for business, industrial strategy, and science and innovation with energy and climate change policy. The new Department will be responsible for helping to ensure that the economy grows strongly in all parts of the country, based on a robust industrial strategy. It will ensure that the UK has energy supplies that are reliable, affordable and clean; and it will make the most of the economic opportunities of new technologies, and support the UK's global competitiveness more effectively."

DEPARTMENT FOR BUSINESS, ENERGY AND INDUSTRIAL STRATEGY

The full list of ministerial responsibilities in the Department for Business, Energy and Industrial Strategy (BEIS) has now been confirmed. (1st August 2016)



The Rt Hon Greg Clark MP - Secretary of State for Business, Energy and Industrial Strategy

Following his appointment as the Secretary of State, Greg Clark said the department was “charged with delivering a comprehensive industrial strategy, leading government’s relationship with business, furthering our world-class science base, delivering affordable, clean energy and tackling climate change”.



Nick Hurd MP, Minister of State for Climate Change and Industry

The minister is responsible for:

- climate change
- carbon budgets
- international climate change, including International Climate Fund
- climate science and innovation
- green economy, including the Green Investment Bank
- industry and enterprise
- advanced manufacturing
- materials
- automotive



Jo Johnson MP, Minister of State for Universities, Science, Research and Innovation (joint minister with Department for Education)

The minister is responsible for:

- higher education
- science and research
- life sciences
- agri-tech industrial strategy
- innovation
- space



Baroness Neville-Rolfe, Minister of State for Energy and Intellectual Property

The minister is responsible for:

- energy (with the Minister for Industry and Energy)
- nuclear
- oil and gas, including shale gas
- low carbon generation
- security of supply
- electricity and gas wholesale markets and networks
- energy efficiency and heat, including fuel poverty
- smart meters and smart systems
- international energy
- energy security, including resilience and emergency planning
- intellectual property
- EU single market
- Lords lead on all BEIS issues



Margot James MP, Minister for Small Business, Consumers, and Corporate Responsibility
The Parliamentary Under Secretary of State supports the Minister for Climate Change and Industry.

Responsibilities include:

- small business (including the Small Business Commissioner, Groceries Code Adjudicator, Pubs Code Adjudicator)
- enterprise and British Business Bank
- retail sector
- consumer and competition (including energy retail markets, competition law and Companies House)
- deregulation and regulatory reform
- labour markets including trade union and employment law
- corporate governance
- local growth
- Insolvency service
- Land Registry
- Ordnance Survey
- postal affairs
- Royal Mail
- EU structural funds
- national minimum wage



Jesse Norman MP, Minister for Industry and Energy
The Parliamentary Under Secretary of State supports the work of the Minister for Climate Change and Industry and the Minister for Energy and Intellectual Property.

Responsibilities include:

- industrial policy (supporting the Minister for Climate Change and Industry)
- technology
- infrastructure/construction
- aerospace
- professional services
- rail supply chain
- energy policy (supporting the Minister for Energy and Intellectual Property)
- nuclear
- oil and gas, including shale gas

There are two Joint Permanent Secretaries: **Alex Chisholm** and **Sir Martin Donnelly KCB CMG**.

DEPARTMENTAL STATEMENTS

Department for Energy & Climate Change.

Statement by the Rt Hon Amber Rudd, Secretary of State, 13th June 2016

The Council, chaired by the Dutch Presidency, featured discussions around a central theme of energy security.

The meeting began with the Council approving a General Approach on the proposed Decision with regard to intergovernmental agreements (IGAs) in the field of energy.

For the second agenda item European Commissioner Miguel Arias Cañete opened a policy debate on Gas Security of Supply by calling for improvements to regional cooperation, solidarity and the transparency of commercial gas contracts. This was in order to address vulnerabilities that still exist in the case of major disruptions to gas supplies. Interventions from Member States were mixed; some supported the Commission's approach whereas others referenced the need for a more flexible, voluntary approach to regional configurations. There was further discussion on the concept of solidarity arrangements and how these

would apply not only to EU Member States but to Energy Community States; a group of countries from South East Europe and the Black Sea region.

Later, the Dutch Presidency presented their conclusions on electricity market design which they hoped would provide guidance to the Commission on their proposals due out by the end of the year.

In the afternoon the Council listened to presentations from the Dutch Presidency on the security of supply of medical radioisotopes to promote a longer term, more sustainable market. This was followed by a presentation from the Slovak Minister on their forthcoming Presidency's work programme.

The Council ended with an update from Commissioner Cañete on recent events in international relations as well as progress on implementing the Commission's strategy on LNG (liquefied natural gas) storage which is to be implemented later this year.

Department for Business, Innovation and Skills

Extract from "Cutting Red Tape - Review of the energy sector"

This report, produced by the Department for Business, Innovation and Skills summarises the findings of the Cutting Red Tape review of regulatory barriers to growth, productivity and innovation in the energy sector.

The review is one of a series that examine whether legislation can be simplified or improved to reduce unnecessary burdens on business.

It can be found on <https://www.gov.uk/government/publications/energy-sector-cutting-red-tape-review>

Introduction

This report summarises the findings of the Cutting Red Tape review of the energy sector.

This review examines whether legislation and its implementation can be simplified or improved to aid compliance and to reduce unnecessary burdens on business.

This is one of a series of Cutting Red Tape reviews that aims to address issues such as overlap and duplication between regulators, or to identify instances where the legislation, guidance or the approach to implementing regulations is unclear, confusing or unnecessarily burdensome. Each

review is a short, sharp investigation of stakeholder experiences and evidence; they are carried out by a small review team and typically involve a six to eight week fieldwork phase.

This review was run jointly by the Cabinet Office, Department for Business Innovation and Skills (BIS), the Department of Energy and Climate Change (DECC) and the Office of Gas and Electricity Markets (Ofgem).

Executive summary

The Cutting Red Tape Review went public on 16th July 2015 via an online call for evidence. We spoke to 35 companies face-to-face and received a further 36 detailed submissions via email and our website. Companies and trade bodies involved in the energy sector told us that the most significant burdens in the sector were driven by regulation and enforcement, which they considered to be overlapping, duplicated, and not specific enough or not designed with businesses in mind. Smaller companies were particularly affected by the issues raised as they have fewer resources and less cash flow to afford the time and costs of these burdens. Our key findings from the stakeholder consultation process are:

a) Sometimes regulation and enforcement isn't specific enough, or is designed in a way

which doesn't consider the range of businesses and business models they affect – leading to unnecessary burdens. Business told us that regulations don't distinguish between a very competitive business to business market, and a less competitive domestic market. We were also told that there is no regulation specific to energy storage and that the permitting regime for offshore renewables is too complex and not designed with businesses in mind. Wind farms told us that the lack of guidance on negotiating with airfields during the mitigation planning process causes a significant financial burden and we were told that aviation interests continued to hold up schemes because of their lack of responsiveness.

b) Data Reporting is too frequent, overlapping and can be too onerous. There are multiple and frequent overlapping data requests each requiring a slightly different format, unnecessarily taking time away from businesses. Specific regimes which businesses told us had particularly onerous reporting requirements were the CRC Energy Efficiency Scheme [CRC], Energy Savings Opportunity Scheme [ESOS] the Climate Change Levy [CCL], the Carbon Price Floor [CPF], the Renewables Obligation [RO] and the Energy Company Obligation [ECO]. Businesses also told us of a number of EU or international treaties which cause reporting or financial burdens including REMIT and the EU Emissions Trading System [EUETS].

c) Adhering to the required legislation, codes, rules, and other statements can be burdensome because they are difficult to locate, expensively governed, and sometimes contradictory. The first burden was as simple as locating all of these rules in their most up to date format. Businesses told us the Licences required to supply energy had grown in complexity and that code changes are costly, especially as they continually change. We were told connecting to the grid can be complicated and expensive, particularly when the infrastructure needs upgrading.

d) The scale of change and lack of clear direction from Ofgem and the Department of Energy and Climate Change (DECC) has led to significant opportunity costs and lost investment. Businesses told us that the scale and process of change is costly, and largely due to the lack of a joined up approach between all the bodies in the energy sector. We were told that because energy projects take years, and sometimes decades, to complete longer term vision would help secure investment. Businesses told us that they need clear guidance which can be relied upon so they know they can proceed with projects with greater certainty and reduced risk. Companies felt that Ofgem's dual role of regulator and enforcer was not working.

In response to these findings, in this Parliament the Government will commit to achieving the following:

a) A longer term narrative with a clear approach to policy, which considers the breadth of the market. The forthcoming Strategy and Policy Statement, which DECC will aim to consult on by Summer 2016, will outline the respective responsibilities of DECC and Ofgem. DECC will also develop, and publish by the end of 2016 a clearer approach to working and communicating with stakeholders in an effective and efficient way and will produce a regular (e.g. annual) forward look – outlining the priorities and key changes in the energy sector over each coming year including, where appropriate, a timetable for Contracts for Difference. Ofgem is committed to "getting out of the way" while maintaining vigilance to protect consumers, introducing clear and robust Impact Assessments for regulatory changes. As part of its Innovation Plan to be published by Budget 2016, Ofgem will continue to consider where its regulation could be more agile, for example to give greater flexibility to accommodate local energy solutions, demand-side and flexible response services, and storage. **These next steps will address the findings in paragraph a and d.**

b) A more joined up approach. DECC and Ofgem have formed a Working Group to look at data and information requests issued by both organisations. This will develop a more streamlined and, where possible, shared approach to making information and data requests to the industry by Summer 2016. This will support industry and reduce burdens by making sure that bodies are as joined up as possible. **These next steps will address the findings in paragraph b.**

c) Simplifying processes and rules, and adopting a risk based approach to compliance. Ofgem is committed to moving to a more principles-based and risk-based approach to regulation, to reduce the size of the supply licence and reducing reliance on prescriptive rules. This will focus on helping companies to do the right thing, as opposed to waiting for them to get it wrong. "Licence Lite" is an option introduced by Ofgem that helps new businesses enter the electricity supply market. DECC will continue to simplify and standardise the reporting processes for Energy Company Obligations (ECO). DECC is currently collaborating on an HMT led review of the business energy efficiency tax landscape and associated regulations, which sought the views of industry on simplification through a consultation process. The review, which DECC aims to complete by Spring 2016, is considering options to streamline energy and emissions reporting. Additionally, the CMA is currently investigating, as part of its energy market investigation, the governance of the Industry Codes and is due to publish its final report in June 2016. **These next steps will address the findings in paragraph c.**

PARLIAMENTARY RECORD

SELECT COMMITTEES: REPORTS AND INQUIRIES

1st March 2016 – 21st July 2016

House of Commons

Select Committee for Energy and Climate Change

Energy revolution Inquiry announced 24 March 2016 Energy and Climate Change Committee inquiry into disruptive technologies that could change the energy sector. **This inquiry is open** and accepting written submissions; the deadline for these was May 3 2016, but late submissions are still being considered.

UK new nuclear: status update Inquiry announced 17 March 2016 Energy and Climate Change Committee inquiry into financing new nuclear projects. **This inquiry is open** and oral evidence is ongoing.

23rd March, The committee heard from Dr Simon Taylor, Lecturer in Finance, Judge Business School, Cambridge University, Peter Atherton, Managing Director, Jefferies, and Dr Douglas Parr, Chief Scientist and Policy Director, Greenpeace UK; Vincent de Rivaz, Chief Executive Officer, Humphrey Cadoux-Hudson, Managing Director, Nuclear New Build, EDF Energy, Tom Samson, Chief Executive, NuGeneration, Zhu Minhong, General Manager of International Nuclear Business Development Department, General Director of UK Nuclear Projects, China General Nuclear, and Alan Raymant, Chief Operating Officer, Horizon Nuclear Power.

24th May Evidence was given by Vincent de Rivaz, Chief Executive Officer, and Humphrey Cadoux-Hudson, Managing Director, Nuclear New Build, EDF Energy; Andrea Leadsom MP, Minister of State, and Hugo Robson, Chief Negotiator, Department of Energy and Climate Change.

Competition and Market Authority's energy market investigation Inquiry announced 24 June 2016 Energy and Climate Change Committee inquiry into CMA's final proposals and their impacts on consumers. Committee held a one-off evidence session on Tuesday 5 July 2016.

Evidence was given by Luke Watson, Chief Executive Officer, GB Energy, Gillian Cooper, Head of Retail Energy Markets, Citizens Advice, Pete Moorey, Head of Campaigns, Which?, Professor Catherine Waddams, Professor of Regulation, Norwich Business School, and Audrey Gallagher, Director of Energy Supply, Energy UK; Martin Cave, Member of the Competition and Markets Authority energy market investigation panel, Competition and Markets Authority; Roger Witcomb, Chair of the Competition and Markets Authority Energy market investigation panel, Simeon Thornton, Project Director, and Susannah Meeke, Director, Remedies, Business and Financial Analysis, Competition and Markets Authority.

Leaving the EU: implications for UK energy policy Inquiry announced 07 July 2016 Energy and Climate Change Committee inquiry into implications for UK energy policy leaving the EU. **This inquiry is accepting written submissions;** the deadline is Wednesday 14 September 2016.

Leaving the EU: implications for UK climate policy Inquiry announced 05 July 2016 Energy and Climate Change Committee inquiry into implications for UK climate policy leaving the EU.

This inquiry is accepting written submissions; the deadline is Monday 22 August 2016. **Investor confidence in the UK energy sector** Inquiry announced 16 September 2015 Energy and Climate Change Committee inquiry into the factors that contribute to investor confidence in the energy sector. **This inquiry is open.**

On 28 June 2016 the Committee received a response from the Government. During the public session with Andrea Leadsom MP, Minister of State, Department of Energy and Climate Change, the Chair announced that the Committee would be asking the Department for a revised response which addresses the Committee's recommendations in more detail.

Low carbon network infrastructure Inquiry announced 17 September 2015 Energy and Climate Change Committee inquiry into the UK's electricity infrastructure. **Report published 17 June 2016.** Awaiting Government response. Details can be seen on subsequent pages.

2020 renewable heat and transport targets Inquiry announced 09 March 2016 Energy and Climate Change Committee inquiry into meeting UK's 2020 renewable heat and transport energy targets. **This inquiry is open** and oral evidence is ongoing.

Pre-legislative scrutiny of the Government's draft legislation on energy Inquiry announced 21 January 2016 Energy and Climate Change Committee inquiry into pre-legislative scrutiny of the proposed energy legislation. Report published on May 4th 2016.

Select Committee for Science and Technology

Smart meter Inquiry. Inquiry announced 18 March 2016.

Science and Technology Committee inquiry into smart meters. **This inquiry is open**, the Committee is still accepting submissions.

On 3rd May 2016 Evidence given by Nick Hunn, Chief Technology Officer, WiFore Consulting Ltd, Pam Conway, Head of Smart Strategy, British Gas, and Dr Sarah J Darby, Environmental Change Institute, University of Oxford; Lord Bourne of Aberystwyth, Parliamentary Under-Secretary of State for Climate Change, Daron Walker, Senior Responsible Owner, Smart Metering Implementation Plan, Department of Energy and Climate Change, and Sacha Deshmukh, Chief Executive, Smart Energy GB.

Select Committee for Environmental Audit

Sustainability and HM Treasury Inquiry announced 18 December 2015

Environmental Audit Committee inquiry into the role of HM Treasury in sustainable development and environmental protection.

On 5th Tuesday July The committee heard from Lord Deben, Chair, Committee on Climate Change and Matthew Bell, Chief Executive, Committee on Climate Change. Then from Matthew Knight, Business Development Director, Siemens and Barbara Vest, Director of Generation, Energy UK. Finally Estelle Brachlianoff, Senior Executive, Vice-President UK and Ireland, Veolia, Jerry McLaughlin, Director, Economics and Public Affairs, Mineral Products Association and Dan Cooke, Director of Communications and External Affairs/Chairman of Communications Committee, Viridor/Chartered Institution of Wastes Management.

Energy and Climate Change Committee

Home energy efficiency and demand reduction Fourth Report of Session 2015–16 12th March 2016

Summary

Improving home energy efficiency is a 'win win' for households and the UK as a whole. It enhances the UK's energy security, cuts the carbon emissions from our building stock, and reduces costs—the cheapest energy is the energy that we don't use. From the consumer perspective, the benefits include lower energy bills, warmer homes that are more comfortable to live in, and improved wellbeing. Insulating draughty homes can also save vulnerable people from fuel poverty—a problem which remains unacceptably prevalent across the UK.

The Government's recent efforts to improve household energy efficiency have consisted of supplier obligations—such as the Energy Company Obligation (ECO)—and the market led 'pay-as-you-save' Green Deal. These policies have proved inadequate. ECO has delivered many improvements but at much lower rates than previous supplier obligation schemes. The Green Deal did not increase demand for energy efficiency significantly and fell far short of original ambitions for the scheme. Beyond well-documented issues around complexity and cost, the Green Deal failed to address the hassle factor that can prevent customers signing up.

The energy efficiency supply chain has also been affected by inconsistent and unpredictable policy signals as policies have been chopped and changed. In the last year the Government has announced an end to the Green Deal and it has reneged on a longstanding commitment to require all new homes to be zero carbon from 2016 onwards. Sudden policy changes in this area, like other areas of energy policy, have created uncertainty in the market. It is crucial that the Government establishes a stable long term framework for energy efficiency.

While we welcome the fact that Government has set out plans for the energy efficiency supplier obligation beyond ECO in 2017, we have serious concerns regarding the Department's proposed approach to tackling fuel poverty through energy suppliers. The importance of saving people from fuel poverty cannot be overstated, but we heard that the Government's decision to use the new supplier obligation to do so may be misguided and that we are the only country in Europe to take this approach. Commercial energy suppliers may not be best placed to reach those households who need it most, and a scheme which places costs on the very households it is designed to help is inherently regressive. Moreover, given the huge number of homes yet to benefit from energy efficiency measures, the reduced ambition of the new supplier obligation is a major disappointment.

The Government must do much more to reduce consumer energy bills by improving the energy efficiency of new and existing homes. Locally-led and area-based approaches have great potential. There are examples of good practice across the UK—including in Scotland—that should be drawn on. Zero carbon homes was a positive and ambitious policy, which could have saved future homeowners money on their energy bills. It should be reinstated. Alternatively, the Government should set out a similar policy that will ensure that new homes generate no net carbon emissions and are inexpensive to heat and light. The Department must also reinvigorate the 'able-to-pay' market. There is now no support to help households who wish to install energy efficiency measures but cannot meet the costs upfront. DECC should contemplate using the 'pay-as-you-save' mechanism, as well as the infrastructure behind the Green Deal Finance Company, when considering how to assist 'able-to-pay' households in the years ahead. DECC must also seriously look to drive demand by pressing ahead with developing incentives such as the introduction of stamp duty and council tax reductions for efficient homes. The impact of these ideas must be properly assessed and support mechanisms must be in place to protect vulnerable consumers.

The Government must promptly demonstrate a renewed commitment to tackling energy efficiency by establishing adequate policies with long-term, ambitious objectives, which restore confidence to the industry. There are a huge number of homes yet to benefit from better energy efficiency. The UK housing stock is amongst the least energy efficient in the developed world. If the Government takes concerted action now it can help to insulate consumers from future energy price rises, while preventing the requirement for widescale retrofits and costly energy efficiency programmes in the future. Success in energy efficiency will only be achieved if a genuinely cross-departmental approach is adopted by Government. All of Government should see taking action on energy efficiency not as a cost today, but as an important investment for the future.

The full report can be found on <http://www.publications.parliament.uk/pa/cm201516/cmselect/cmenergy/552/552.pdf>

Setting the fifth carbon budget **Fifth Report of Session 2015–16** **27th April 2016**

Summary

The Climate Change Act commits the UK to reducing carbon emissions by at least 80% by 2050, compared to 1990 levels. To meet this target, the UK Government sets carbon budgets, or caps in emissions, for each five-year period between 2008 and 2050. The budgets are important stepping stones on the path to 2050 and provide the certainty needed for policy decisions and investment to take place.

The level of four carbon budgets have so far been set in law, covering the period up to 2027. The UK is currently on track to meet the first three carbon budgets but there are questions about whether adequate policies are in place to meet the emissions reductions needed in the late 2020s under the fourth carbon budget period. As required by the Act, the Secretary of State must set the level of the fifth carbon budget (for the period from 2028 to 2032) by 30 June 2016.

In November 2015, the Committee on Climate Change (CCC) published its advice on the level of fifth carbon budget and recommended that it should be set at 1,765 million metric tons of carbon dioxide equivalent (MtCO₂ e), including 40 MtCO₂ e emissions from international shipping. The CCC has produced robust advice that is in line with previous budgets and with the overall trajectory towards meeting the 2050 target.

Our principal recommendation is that the Government should set the fifth carbon budget at the level recommended by the CCC. Should the Government deviate from the CCC's advice on the level of the fifth carbon budget, we will be looking carefully for a robust evidence-base on any alternative level proposed.

Further recommendations we make include:

- The fifth carbon budget should include emissions from international shipping, as advised by the CCC. We also urge the Government to work with international partners to secure an agreed international mechanism for controlling international aviation emissions.
- In the light of the climate agreement in Paris, the CCC and the Government must carry out further analyses as to what levels of emissions reduction may be required in the future to meet the more ambitious goal of limiting global temperature increase to 1.5 degrees Celsius.
- It is important that genuine action takes place in the power sector, not least as electrification of other sectors such as heat and transport becomes more prominent. The Government should set a power sector carbon intensity target of 100 gCO₂ / kWh for 2030 to provide the investment certainty needed.
- Uncertainties about the UK's share of the EU Emissions Trading System (ETS) cap for the period of the fifth carbon budget result in uncertainties in the share of the budget for the non-traded sectors such as heat, transport and buildings. We support the CCC's approach to dealing with the problem, that is to fix the net carbon budget for the traded sector at 590 MtCO₂ e over 2028–2032, thereby limiting emissions for the non-traded sector. However this support is conditional on Government clearly explaining how any discrepancies will be dealt with once the UK's share of the EU ETS cap is known.

Effectively meeting the Climate Change Act and the commitments made in Paris will require action across the board. The Government's emissions reduction plan, which it said it will publish by the end of the year, will be crucial in providing policy certainty across sectors. We will pay close attention to the development of this plan. We have already set out in recent reports what more Government must do to build investor confidence and tackle energy efficiency, and our scrutiny of DECC's policies in heat and transport is also underway.

The full report may be found on <http://www.publications.parliament.uk/pa/cm201516/cmselect/cmenergy/659/659.pdf>

Pre-legislative scrutiny of the Government's draft legislation on energy **Sixth Report of Session 2015–16** **26th April 2016**

Summary

The Government's draft legislation on energy, as published on 21 January 2016, has the potential to support Ministers in their aim of increasing competition in the energy market and reducing costs for consumers. But it should be amended to ensure that Ofgem and Government are transparent about the costs and benefits of the decisions that they make using their powers under the legislation, and that industry is able, where appropriate, to challenge them.

We agree with the proposals to give Ofgem the power to initiate modifications to industry codes in relation to next-day switching and half-hourly settlement. The current situation in which only industry can suggest changes does not serve customers as well as it might. But Ofgem's new powers should be tempered with an industry right of appeal to the Competition and Markets Authority on the merits of any code change, and with the publication by Ofgem of an impact assessment of any proposed alteration.

Similarly, we agree in principle with the proposals to introduce competitive tendering for some onshore transmission assets, which also have the potential to lower costs for consumers. But, first, there is a differential impact in Scotland compared with England and Wales, which needs to be addressed to ensure that there is a level playing field for transmission projects throughout Great Britain. Secondly, Ofgem should have to publish a project-specific impact assessment when it decides whether and how to tender an asset. And thirdly, the Government should set out how it will ensure the current planning regime in Scotland does

not prevent or delay the development of competitively tendered projects there.

Finally, we agree that the Secretary of State should be granted an extension to her powers so that she can not only continue to oversee the roll-out of the smart-meter programme, but deal with its outcomes. But, given the ongoing concerns about whether the roll-out deadline will be met, the Government must ensure that all those involved in the rollout are clear about their responsibilities and able to deliver on them by 2020. We urge Members of Parliament to press the Government on this point during the passage of this legislation through Parliament.

The full report can be found on

<http://www.publications.parliament.uk/pa/cm201516/cmselect/cmenergy/776/776.pdf>

Low carbon network infrastructure

First Report of Session 2016–17 17th June 2016

Summary

Networks are at the heart of the UK's low carbon ambition. Our inquiry into low carbon network infrastructure has identified that they face three interwoven challenges. Firstly, new energy sources—in electricity, gas, and heat—need connections to, and consequent reinforcement of, the grid. Secondly, some of these sources are variable in output, such as wind and solar electricity: system operators must therefore employ new tools to balance supply and demand. And thirdly, networks' efforts to overcome these obstacles must not be impeded by outdated and inflexible regulation and governance. Significant infrastructural development is needed, but incurs considerable expense of both time and money. Deployment of new technologies is crucial to achieving these goals while controlling cost.

The recent rise of new connection requests is astounding. For example, the UK's installed solar capacity is approaching levels previously expected by 2030, stacking pressure on regional distribution networks. There is a need for better integration of connection and planning-consent processes. More forward-looking investment by network companies may also be helpful in reversing the slowdown in connections, but Ofgem must assess the best way of recovering costs for such investment. Connection costs remain geographically skewed. Ofgem should assess the costs and benefits of levelling connection costs across Great Britain. Network charges incurred by consumers also vary considerably by location. Moreover, transmission charges for generators in the UK remain high by EU standards.

The Government must investigate the disadvantage UK generators may consequently face against other European generators as Great Britain becomes more interconnected. The UK's gas grid must adjust to unorthodox cleaner fuels. To assist this transition, Ofgem should assess safe levels for injection of green gases into the current network and the Government should set targets for their deployment. We welcome the Government's ambitious target for district-heating networks, which are an alternative approach to the electricity and gas networks in providing heat. However, district heating needs a regulatory framework to encourage investment and complement existing voluntary schemes in safeguarding consumers.

Networks have a number of tools to balance variable energy sources:

- Storage technologies, from enormous hydroelectric reservoirs to household batteries, can store electricity at times of peak for use at times of need. However, the deployment of storage is obstructed by archaic regulation and unfair 'doublecharging', both of which the Government must address urgently.
- Demand Side Response could empower consumers large and small to manage their energy use in line with system-wide need, but a more detailed Government strategy is needed to help this solution reach its full potential.
- Greater interconnection with European neighbours will improve the UK's ability to meet peak demand, though we note that Great Britain is likely to remain a net importer of electricity.
- Low carbon network infrastructure.

These challenges can only be met within an appropriate governance, regulatory and operational framework.

Network companies have generous allowances for early-stage testing of the technological solutions they need, but the UK struggles to bring these innovations into commercial reality. More and more electricity generation occurs at the regional distribution, rather than national transmission level, but Distribution Network Operators remain somewhat blind to their energy flows and passive in managing them. There must be a transition to fully-functional Distribution System Operators which balance and control their local grids. At transmission level, we recommend creating an Independent System Operator (ISO). The Government must set out its intentions regarding an ISO, and consult on a detailed, staged plan for their implementation. Networks are transforming. We recognise that this presents challenges for the Government but it has been slow to present a clear, holistic plan for the evolution networks need. It seems instead to have disconnected policy ideas at various stages of implementation. We are concerned that the roll-out of smart meters is not progressing quickly enough to achieve the necessary mass to truly create a smart energy network. Our central message to the Government is that it must address the network system as a whole, learn lessons from policy lags in the key areas we outline, and develop its change readiness so as to meet the ambition of low carbon network infrastructure.

The full report may be found on

<http://www.publications.parliament.uk/pa/cm201617/cmselect/cmenergy/267/267.pdf>

The future of carbon capture and storage in the UK: Government Response to the Committee's Second Report of Session 2015–16

First Special Report of Session 2016–17 29 June 2016

On 10 February 2016 the Energy and Climate Change Committee published its Second Report of Session 2015–16, Future of carbon capture and storage in the UK (HC 692). On 28 June 2016 the Committee received the Government's response to the Report.

Full details can be found on

<http://www.publications.parliament.uk/pa/cm201617/cmselect/cmenergy/497/497.pdf>

Setting the fifth carbon budget: Government Response to the Committee's Fifth Report of Session 2015–16

Second Special Report of Session 2016–17 5 July 2016

On 27 April 2016 the Energy and Climate Change Committee published its Fifth Report of Session 2015–16, Setting the fifth carbon budget (HC 659). On June 30 2016 the Committee received the Government's response to the Report.

This can be seen on <http://www.publications.parliament.uk/pa/cm201617/cmselect/cmenergy/518/518.pdf>

Home energy efficiency and demand reduction: Government Response to the Committee's Fourth Report of Session 2015–16

Third Special Report of Session 2016–17 5 July 2016

On 12 March 2016 the Energy and Climate Change Committee published its Fourth Report of Session 2015–16, Home energy efficiency and demand reduction (HC 552). On 4 July 2016 the Committee received the Government's response to the Report.

This can be seen on <http://www.publications.parliament.uk/pa/cm201617/cmselect/cmenergy/542/542.pdf>

Pre-legislative scrutiny of the Government's draft legislation on energy: Government Response to the Committee's Sixth Report of Session 2015–16

Fourth Special Report of Session 2016–17 13 July 2016

On 4 May 2016, the Energy and Climate Change Committee published its Sixth Report of Session 2015–16, Pre-legislative scrutiny of the Government's draft legislation on energy (HC 776). On 12 July 2016, the Committee received the Government response to the Report.

Full details may be found at

<http://www.publications.parliament.uk/pa/cm201617/cmselect/cmenergy/581/581.pdf>

PARLIAMENTARY ORAL QUESTIONS AND DEBATES

1st March 2016 – 21st July 2016

House of Commons

Fiscal Support for Oil and Gas Industry

Stuart Blair Donaldson (West Aberdeenshire and Kincardine) (SNP)

1 March 2016: Column 799

Community Veto on Clean Energy

Jeremy Corbyn (Islington North) (Lab)

8 March 2016: Column 941

Swansea Bay tidal lagoon project

Byron Davies (Gower) (Con)

16 March 2016: Column 944

CCS Funding (Peterhead)

Clive Lewis (Norwich South) (Lab)

23 March 2016: Column 1559

Energy Questions: 24th March 2016

Indebted Prepayment Customers

Colleen Fletcher (Coventry North East) (Lab)

Liz McInnes (Heywood and Middleton) (Lab)

Dawn Butler (Brent Central) (Lab)

Caroline Flint (Don Valley) (Lab)

Lisa Nandy (Wigan) (Lab)

Onshore Wind

Tom Pursglove (Corby) (Con)

Cat Smith (Lancaster and Fleetwood) (Lab)

Jim Shannon (Strangford) (DUP)

Ms Margaret Ritchie (South Down) (SDLP)

Energy-Saving Products: VAT

Tim Loughton (East Worthing and Shoreham) (Con)

Clive Lewis (Norwich South) (Lab)

Gas-fired Power Stations: Capacity Mechanism

Jeremy Lefroy (Stafford) (Con)

Callum McCaig (Aberdeen South) (SNP)

Amanda Milling (Cannock Chase) (Con)

Mr Dennis Skinner (Bolsover) (Lab)

Dr Alan Whitehead (Southampton, Test) (Lab)

Low-carbon Economy

Jeff Smith (Manchester, Withington) (Lab)

Mary Creagh (Wakefield) (Lab)

Barry Gardiner (Brent North) (Lab)

Zero Emissions

Andy Slaughter (Hammersmith) (Lab)

David Mowat (Warrington South) (Con)

Jonathan Reynolds (Stalybridge and Hyde) (Lab/Co-op)

Fuel Duty

Mr Barry Sheerman (Huddersfield) (Lab/Co-op)

Biomass

Nigel Adams (Selby and Ainsty) (Con)

Rebecca Pow (Taunton Deane) (Con)

Shale Gas

Mr David Nuttall (Bury North) (Con)

Renewable Energy: Subsidies

Jason McCartney (Colne Valley) (Con)

Retail Energy: Switching Suppliers

Jake Berry (Rossendale and Darwen) (Con)

Oil and Gas

Kirsty Blackman (Aberdeen North) (SNP)

Tidal Lagoon Energy

Carolyn Harris (Swansea East) (Lab)

Energy Storage Devices

Matthew Pennycook (Greenwich and Woolwich) (Lab)

Columns: 1733 - 1747

Topical Questions

Departmental Responsibilities

Jeff Smith (Manchester, Withington) (Lab)

Supplier Switch time for Consumers

David Rutley (Macclesfield) (Con)

Consumer Boiler Upgrades

Mark Menzies (Fylde) (Con)

Roll out of Smart Meters

Dawn Butler (Brent Central) (Lab)

Reintroduction of zero-carbon policy for homes

Rebecca Pow (Taunton Deane) (Con)

Energy Efficiency Measures

Sir David Amess (Southend West) (Con)

Columns: 1748 - 1751

Solar Power

Caroline Lucas (Brighton, Pavilion) (Green)

Rebecca Long Bailey (Salford and Eccles) (Lab)

19 April 2016 Column: 771-772

Scotland's Energy Policy

Marion Fellows (Motherwell and Wishaw) (SNP)

11 May 2016 Column: 609

Energy Questions: 12th May 2016

New Energy Technologies

Mark Pawsey (Rugby) (Con)

David Mowat (Warrington South) (Con)

Margaret Ferrier (Rutherglen and Hamilton West) (SNP)

Michelle Donelan (Chippenham) (Con)

John Pugh (Southport) (LD)

Smart Meters

Chi Onwurah (Newcastle upon Tyne Central) (Lab)

Andrew Bridgen (North West Leicestershire) (Con)

Jim Shannon (Strangford) (DUP)

Offshore Wind: Scotland

John Nicholson (East Dunbartonshire) (SNP)

Callum McCaig (Aberdeen South) (SNP)

Electricity Pylons: Sensitive Environments

Dr James Davies (Vale of Clwyd) (Con)

Sue Hayman (Wokingham) (Lab)

Energy Bills

Will Quince (Colchester) (Con)

Margaret Greenwood (Wirral West) (Lab)

Andrew Stephenson (Pendle) (Con)

Lisa Nandy (Wigan) (Lab)

Energy Tariffs

Andrew Bingham (High Peak) (Con)

Pre-pay Meters

Jessica Morden (Newport East) (Lab)

Clive Lewis (Norwich South) (Lab)

Liz McInnes (Heywood and Middleton) (Lab)

State Aid Clearance: Scottish Islands

Mr Alistair Carmichael (Orkney and Shetland) (LD)

Mr David Nuttall (Bury North) (Con)

Coal-fired Power Stations

Christina Rees (Neath) (Lab)

Amanda Milling (Cannock Chase) (Con)

Renewable Heat Incentive

Mary Robinson (Cheadle) (Con)

Jonathan Reynolds (Stalybridge and Hyde) (Lab/Co-op)

Dr Alan Whitehead (Southampton, Test) (Lab)

Solar Photovoltaic Systems

Helen Hayes (Dulwich and West Norwood) (Lab)

Solar Thermal Support

Tom Brake (Carshalton and Wallington) (LD)

Green Research and Development

Maria Caulfield (Lewes) (Con)

Barry Gardiner (Brent North) (Lab)

Biomass Heating Industry: Renewable Heat Incentive

Ronnie Cowan (Inverclyde) (SNP)

Oil and Gas: North Sea

Hannah Bardell (Livingston) (SNP)

Mr Peter Lilley (Hitchin and Harpenden) (Con)

Column: 695 - 710

Topical Questions

Departmental Responsibilities

Debbie Abrahams (Oldham East and Saddleworth) (Lab)

Fracking Locations

Michael Tomlinson (Mid Dorset and North Poole) (Con)

Lisa Nandy (Wigan) (Lab)

Rachael Maskell (York Central) (Lab/Co-op)

Michelle Donelan (Chippenham) (Con)

Roll out of Smart Meters

Henry Smith (Crawley) (Con)

Zero-carbon Homes

Tom Brake (Carshalton and Wallington) (LD)

Aviation Carbon Dioxide

Emissions

Dr Tania Mathias (Twickenham) (Con)

Modular Power Stations

Bob Blackman (Harrow East) (Con)

Pre-payment Meters

Mary Creagh (Wakefield) (Lab)

Diesel Fumes

Mr Barry Sheerman (Huddersfield) (Lab/Co-op)

Column: 711 - 716

Redirection of Investment to renewables

Mike Weir (Angus) (SNP)

7 June 2016 Column: 1033

Electricity Sector in Northern Ireland

Mr Laurence Robertson (Tewkesbury) (Con)

8 June 2016 Column: 1171

Tidal Lagoons

Neil Parish (Tiverton and Honiton) (Con)

Chris Evans (Islwyn) (Lab/Co-op)

13 July 2016 Column: 281

Energy Questions: 14th July 2016

Geothermal Energy

Steve Double (St Austell and Newquay) (Con)

Alan Brown (Kilmarnock and Loudoun) (SNP)

Mr Philip Hollobone (Kettering) (Con)

Energy Infrastructure: Use of British Steel

Tom Pursglove (Corby) (Con)

Christina Rees (Neath) (Lab)

Jeremy Lefroy (Stafford) (Con)

Margaret Ferrier (Rutherglen and Hamilton West) (SNP)

Andrew Stephenson (Pendle) (Con)

Energy Market Competition

Oliver Colvile (Plymouth, Sutton and Devonport) (Con)
Dr Alan Whitehead (Southampton, Test) (Lab)
Callum McCaig (Aberdeen South) (SNP)
Barry Gardiner (Brent North) (Lab)

EU Referendum: Climate Change Commitments

Paul Blomfield (Sheffield Central) (Lab)
Mr Jim Cunningham (Coventry South) (Lab)
Mr Peter Lilley (Hitchin and Harpenden) (Con)
David Mowat (Warrington South) (Con)

EU Referendum: Policy Implications

Kirstin Oswald (East Renfrewshire) (SNP)
Dr Andrew Murrison (South West Wiltshire) (Con)
Liz Saville Roberts (Dwyfor Meirionnydd) (PC)

Energy Bills

Mark Pawsey (Rugby) (Con)
Michelle Donelan (Chippenham) (Con)
Rob Marris (Wolverhampton South West) (Lab)
Jim Shannon (Strangford) (DUP)
Barry Gardiner (Brent North) (Lab)

Smart Meters

Stephen Metcalfe (South Basildon and East Thurrock) (Con)
Craig Williams (Cardiff North) (Con)
Mr Barry Sheerman (Huddersfield) (Lab/Co-op)
Mr David Hanson (Delyn) (Lab)
Barry Gardiner (Brent North) (Lab)

Retail Energy Market: Switching

Mims Davies (Eastleigh) (Con)
Dr Lisa Cameron (East Kilbride, Strathaven and Lesmahagow) (SNP)

Low Carbon Economy

Luke Hall (Thornbury and Yate) (Con)
Mark Menzies (Fylde) (Con)

EU Referendum: Investment in Power Sector

Mary Creagh (Wakefield) (Lab)
Ms Tasmania Ahmed-Sheikh (Ochil and South Perthshire) (SNP)
Deidre Brock (Edinburgh North and Leith) (SNP)

Energy Tariffs

Ben Howlett (Bath) (Con)

Security of Electricity Supply

Sir David Amess (Southend West) (Con)
Richard Graham (Gloucester) (Con)

Shale Gas

Antoinette Sandbach (Eddisbury) (con)
Column: 405 - 421

Topical Questions

Departmental Responsibilities

Mims Davies (Eastleigh) (Con)

Solar Panels

Barry Gardiner (Brent North) (Lab)

Fracking at Frodsham Marshes

Graham Evans (Weaver Vale) (Con)

Hinckley Point

Ben Howlett (Bath) (Con)

Pre-payment Meters

Sir David Amess (Southend West) (Con)

VAT on Energy

Steve Double (St Austell and Newquay) (Con)

Vattenfall Review

Margaret Greenwood (Wirral West) (Lab)

Gas fired Power Stations

Christopher Pincher (Tamworth) (Con)

Capacity Auction

Dr Alan Whitehead (Southampton Test) (Lab)

Investment Opportunities

Bob Blackman (Harrow East) (Con)
Column 421 - 425

All-Ireland Energy Market

Dr Alasdair McDonnell (Belfast South) (SDLP)
20 July 2016 Column: 808

LEGISLATION

1st March 2016 – 21st July 2016

Government Bills

No records

Private Members' Bills

Carbon Emission Reductions Bill 2016-17

Baroness Featherstone

1st Reading 15th June 2016 House of Lords

2nd Reading date tba

Energy Measures (Cost Effectiveness and Efficiency) Bill 2016-17

Lord Foster of Bath

1st Reading 14th June 2016 House of Lords

2nd Reading date tba

The 2015-16 session of Parliament has ended and these Bills will make no further progress.

Department of Energy and Climate Change (Abolition)

Peter Bone MP (Con, Wellingborough)

Commons

1st Reading 29th June 2015

Off-Shore Wind Farm Subsidies (Restriction) Bill 2015-16

Christopher Chope MP (Con, Christchurch)

Commons

1st Reading 6th July 2015

Public Nuisance from Wind Farms (Mandatory Liability Cover) Bill 2015-16

David Davis MP (Con, Haltemprice and Howden)

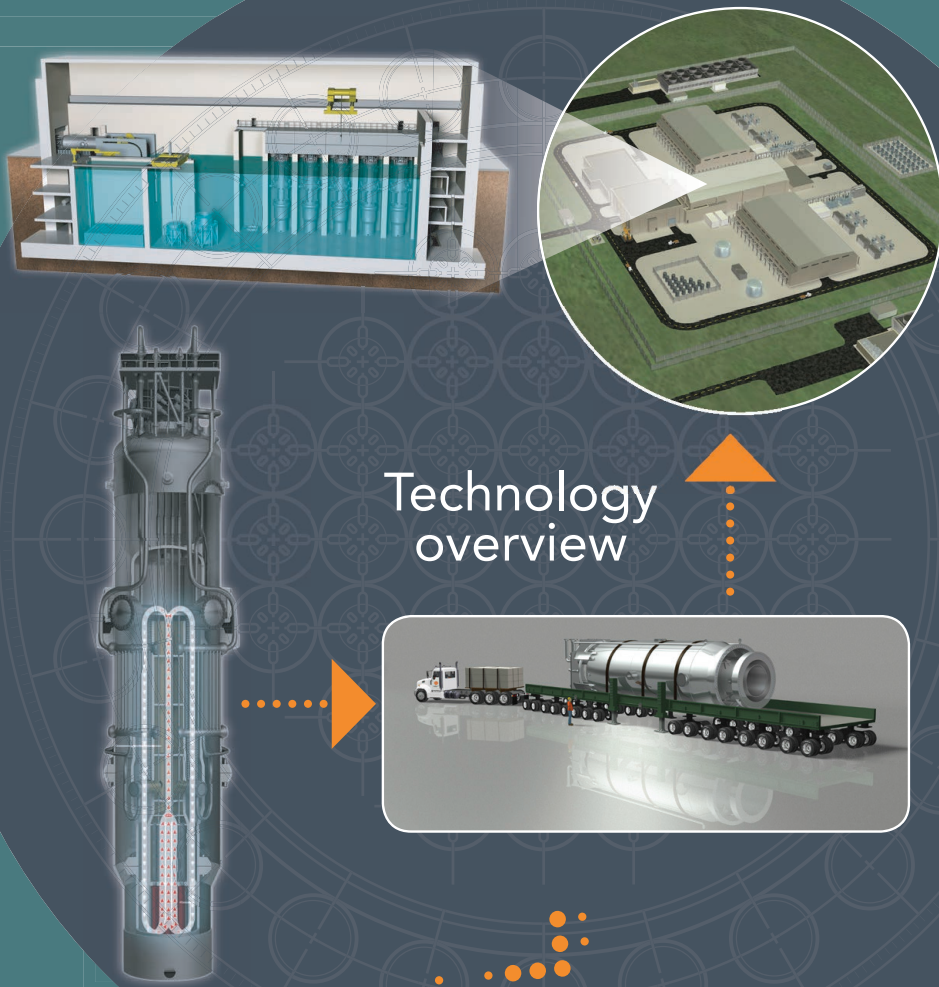
Commons

1st Reading 21st July 2015

NUSCALE POWER: AN SMR OPPORTUNITY FOR THE UK

NuScale Power is one of the world's most advanced developers of small modular reactor (SMR) technology, bringing scalability, flexibility and factory fabrication to nuclear energy.

Up to 12 of our 50 MWe NuScale Power Modules can be installed in a single facility, generating up to 600 MWe of reliable, cost-competitive, low carbon energy.



Technology overview

With the backing of our major investor, Fluor Corporation we expect to be generating for our first U.S. customer by the mid-2020s.

We also see our technology being manufactured, deployed and generating electricity in the UK within a similar timeframe.