

DEPARTMENT FOR BUSINESS, ENERGY AND INDUSTRIAL STRATEGY

GOVERNMENT RESPONSE TO THE ECONOMIC AFFAIRS COMMITTEE'S INQUIRY INTO THE ECONOMICS OF UK ENERGY POLICY

MINISTER: JESSE NORMAN – MINISTER FOR INDUSTRY AND ENERGY

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Introduction

The Government welcomes the Committee's inquiry into the economics of UK energy policy, and its final report "The Price of Power: Reforming the Electricity Market".

The Government notes the Committee's assessment that there are two key failures in the current electricity market: the first relating to security of supply and the second relating to the costs on consumers and businesses. The Government has considered the Committee's recommendations to address these challenges.

The Government's priority is to ensure that the country has secure energy supplies that are reliable, affordable and clean. The Government believes the current policy framework provides the tools to do this. It also believes that stability in this framework, insofar as it is compatible with policy goals, will help to keep costs down for consumers and businesses, and secure the economic benefits of the transition to a low-carbon economy.

Responses to the Committee's recommendations follow below.

Recommendations

Recommendation 1

In the light of the significant and ongoing concerns about the deal, if the Hinkley Point C project is to proceed the Government should:

- (a) Explain how it will replace the capacity expected to be provided by Hinkley Point in the event that completion of the project is delayed, given Hinkley Point C is due to provide 7 per cent of Britain's electricity in 2025.***
- (b) Provide a clearer statement of how the project will provide good value for money for the taxpayer, given concerns over the existing justification; (Paragraph 35)***

The Department for Business, Energy and Industrial Strategy submitted a note to the Committee in December on contingency arrangements in the event that Hinkley Point C is delayed. The note is attached as an Annex to this document.

Details of the Department's value for money case for Hinkley Point C were provided alongside the published contract with EDF.

Recommendation 2

The UK currently has a slim capacity margin. The emergency tools available to the Grid to manage the margin have been effective in the short term. The Government has however struggled to procure sufficient numbers of new power stations through the mechanism to ensure longer-term security of supply. (Paragraph 75)

Recommendation 3

The increased amount of electricity generated from intermittent sources presents new challenges for security of supply. As the proportion of electricity from these sources is projected to increase, tools to ensure cost effective back-up must be available and the cost of appropriate back-up incorporated into estimates of the cost of renewable generation. (Paragraph 81)

The Capacity Market is at the heart of the Government's plans for a reliable energy system and is the most cost effective way of ensuring the country has the electricity it needs now and in the future. It is providing the right investment incentives for a mix of capacity in the UK.

The Capacity Market auction held in December 2016 saw around 3.4 GW of new projects clear, of which 1.5 GW was new gas. Projects included a new CCGT plant (Centrica: Kings Lynn), a new OCGT plant (Spalding), and a variety of smaller scale, flexible gas resources. This is on top of Carrington CCGT (800MW) which opened on 13 March 2017. The Government was also pleased that the auction saw a range of innovative new "smart" projects succeed, including demand side response and battery storage.

A smarter and more flexible system offers significant benefits for consumers and the economy. If done in the right way, such a system will ensure the UK has a secure, affordable and clean energy system now and in the future. Last year the Department for Business, Energy and Industrial Strategy launched a joint call for evidence on

Smart Energy with Ofgem, which presented a proposal for how to enable and manage the transition to a smart energy system, and what steps needed to take to achieve this. There have been over 200 responses to the Call for Evidence and Government aims to have a joint BEIS/Ofgem Smart Systems Plan launched in Spring 2017, which will set out the specific measures to support smart energy, the sequencing of these measures and the timescales for doing so.

Recommendation 4

In 2014 10 per cent of the cost of electricity for domestic users was due to climate change policies. The Government's own analysis indicated that this is expected to rise to around a quarter by 2020. This is not transparent however as the cost of the policies is incorporated into electricity bills, making it difficult to scrutinise with any certainty. The Government should provide estimates for the cost to consumers of climate change policies as part of its quarterly energy prices publication and require providers to include a summary of this information on electricity bills. (Paragraph 95)

Recommendation 5

There is little transparency around the cost of climate change policies for industrial users. The Government should publish what effect the policies have on industrial energy bills—taking into account taxes, industry levies and the operation of the compensation schemes—and on industrial location. (Paragraph 111)

Recommendation 6

Comparisons with other countries are difficult but the Government itself has acknowledged that electricity prices for energy intensive industries in the UK are amongst the highest in Europe. The Government has estimated that even with its compensation schemes taken into account, around 13 per cent of industrial electricity bills for energy intensive industries are the result of climate change policies. This is a disincentive for such businesses to remain or to relocate operations to the UK. (Paragraph 115)

Recommendation 7

The move of the energy portfolio to the Department for Business, Energy and Industrial Strategy offers an opportunity to make sure that the costs to business are taken into account when making energy policy. We welcome the Secretary of State's recent commitment to ensuring electricity is affordable for industry. (Paragraph 116)

The Government provides forward visibility of the costs of the schemes covered by the Levy Control Framework budget, through the Office for Budgetary Responsibility's publications alongside the Budget.

Large energy suppliers already publish breakdowns of the makeup of energy bills on their websites as required by Ofgem. Adding further information to consumer bills would run counter to Ofgem's ambition to simplify bills.

The recent Committee on Climate Change report on the impact of energy policies on consumer energy bills found that the cost of climate change policies was more than outweighed by the savings delivered from energy efficiency schemes on average for household customers.

The Government recognises the importance of domestic consumers having regular, reliable data on the costs and impacts of Government energy policies and on energy prices and bills and we will be publishing our latest estimates in the near future.

The Government wants to make sure that the cost of energy is affordable, fair and internationally competitive, both for businesses and households. The Industrial Strategy Green Paper, published in January 2017, announced our intention to commission a review to look at the cost of energy and the opportunities to reduce the cost of achieving our decarbonisation goals in the power and industrial sectors.

Recommendation 8

The overarching aim of energy policy must be to keep the lights on. Low carbon but chronically unreliable electricity is not acceptable. Similarly very cheap prices at the expense of frequent shortages would be unacceptable. (Paragraph 126)

Recommendation 9

Security of supply should be the first and most important consideration in energy policy. Decarbonisation and affordability must be taken into account, but should not be prioritised ahead of security where there is any conflict. Successive governments are perhaps guilty of overlooking security at times: for example, the disincentives for private investment in electricity generation created by the growth of intermittent renewables. Moreover, affordability should not be neglected in the pursuit of decarbonisation. (Paragraph 127)

The Government agrees with the Committee that it is necessary to ensure that the country has secure energy supplies that are reliable, affordable and clean. Our policies enable us to make informed decisions to deliver on these objectives.

The Government does not agree that it has been guilty of overlooking security of supply. Even as the proportion of intermittent generation has grown, to the point where renewables provided nearly a quarter of the UK's electricity generation in 2015, the system has remained consistently reliable. The Government set, in December 2013, an enduring reliability standard for the GB electricity market equal to a loss of load expectation of 3 hours per year. This is the highest standard in Europe and translates as a system security level of 99.97%. National Grid has the tools it needs to manage the system and meet this reliability standard and Government will ensure that it continues to do so in future. In particular, the Capacity Market is at the heart of the Government's plans for a reliable energy system. Following four successful auctions, the Capacity Market is already securing the country's electricity from 2017/18 through to 2020/2021.

Recommendation 10

There is currently no robust and reliable data on whether measures to reduce the UK's carbon emissions have in fact resulted in the same emissions being exported to other countries due to the closure or relocation of energy intensive industries. We therefore recommend that the Government conducts and publishes such an analysis to assess the success of existing policy and plan future measures. (Paragraph 133)

The Government recognises that there is a risk that energy intensive industries may move their current production abroad and undertake future investment overseas in countries with lower policy costs than the UK. This may reduce emissions in the UK, but increase them abroad in the case of investment leakage and carbon leakage.

That is why the Government provides free allocation of EU ETS allowances to energy-intensive industries that are at risk of leakage. The Government also provides schemes to compensate eligible energy-intensive industries for the indirect costs of the EU ETS, UK Carbon Price Support mechanism, Renewables Obligation and Feed-in Tariffs schemes. In order to provide even greater certainty to these industries, Government has consulted on moving from compensation to an exemption for Renewables Obligation and Feed-in Tariffs policy costs, as well as introducing an exemption for Contracts for Difference costs.

As the Committee notes, this is a complex area. There are data limitations and difficulties in distinguishing between the range of factors that determine production locations. An evaluation strategy for our energy intensive industry relief schemes is in place and results will be expected by 2020.

Recommendation 11

In the longer term the UK will not meet the 2050 target without substantial progress in the decarbonisation of heating and transport. The development of new technologies will be an important element of this. We consider further how to encourage research below. (Paragraph 139)

The Government remains committed to meeting its climate change obligations and to the UK's Climate Change Act. Climate change remains one of the most serious long-term risks to our economic and national security. We recognise the important contribution the decarbonisation of transport and heat will make to meeting the 2050 target in the Climate Change Act and are already taking steps to decarbonise these sectors. The 2017 Budget put the UK at the forefront of global technological progress including through batteries for the next generation of electric vehicles.

For heating, the Renewable Heat Incentive is central to the Government's plans for the long-term decarbonisation of heating in the UK. The Renewable Heat Incentive was introduced to help accelerate the transition to low-carbon heating in the UK, giving help to all in moving from conventional forms of heating to low-carbon alternatives. The scheme provides financial incentives to households and non-domestic consumers, including public bodies and charities, to help bridge the gap between the cost of renewable heating systems and those conventional alternatives. By confirming the available budget up to 2020/21 and setting out a number of reforms to how the scheme will operate, the Government intends to provide the level

of certainty needed for consumers and industry to invest in renewable heating and for the market to transition towards being sustainable without Government support in future.

Heat networks also play an important part of our strategy for reducing our carbon emissions. A heat network is an infrastructure investment that makes it easier and cheaper to reduce carbon emissions from heating over time and deliver benefits such as reducing bills for consumers and supporting local growth. The £300m Heat Networks Investment Project provides capital funding to build heat networks, and is expected to draw in up to £2 billion of additional investment and lead to the construction of hundreds of heat networks in England and Wales. This investment support aims to deliver cost-effective carbon savings and help to create the conditions necessary for the development of a self-sustaining heat network market.

Recommendation 12

The Government should use the powers provided in the Climate Change Act to vary the required pace of emissions reductions in the electricity supply. This flexibility would allow time for the development of new technologies which will increase efficiency and reduce emissions in a cost effective way. (Paragraph 146)

The forthcoming emissions reduction plan will set out how Government will reduce emissions through the 2020s, across the economy and provide an important signal to the markets, businesses and investors. We are investing the time now to undertake critical preparatory work to ensure we get this right. This includes engaging across businesses, industry and other stakeholders on the shared challenge of moving to a low carbon economy.

Recommendation 13

The Government should set out plans to achieve its aim, as set out in 2015, of getting the government out of the electricity market as much as possible by 2025. The best way to do this would be through a single auction, designed to comply with the following principles:

- ***the required capacity is identified prior to the auction;***
- ***the desired level of carbon emissions is fixed;***
- ***all technologies are able to compete;***
- ***an appropriate levy on intermittent generators is designed to reflect the cost of back-up generation;***
- ***the cost of any updates to transmission networks are reflected in bids;***
- ***the auction is overseen by an independent body who, in light of the results of the auction, could make any necessary adjustments to the targets. (Paragraph 158)***

Recommendation 14

An auction run on the basis of these principles would ensure that consumers are paying the lowest prices for low-carbon electricity. (Paragraph 159)

Recommendation 15

The challenge is not to remove all government involvement. This is not possible given the present objectives of energy policy, which we accept as the correct ones. Our aim with the recommendation above is to identify a way for the necessary involvement of government to be limited to setting the parameters within which a market is left to identify the most cost-effective solutions. We believe our recommendation would lead to outcomes which would improve security, protect competitiveness and allow emissions reductions to be achieved more efficiently and at lower cost. (Paragraph 160)

We agree with the Committee that the Government should facilitate the operation of a competitive market that cost-effectively delivers secure supplies of power and carbon reduction. We also agree that Government needs to remain involved in setting the parameters for the auctions that will deliver the most cost-effective solutions.

The Government notes the Committee's recommendation of a different system of auctioning support for new generation. We believe the current system of competitive allocation of support works well, as demonstrated by the significant cost reductions achieved in the 2015 Contracts for Difference allocation round (about 20% lower than the levels of support under the Renewables Obligation). Government expects the current and future allocation rounds to deliver even lower prices. Industry values stability and the £730m that we have confirmed will be available for less established technologies this Parliament provides investors with confidence in the UK's regulatory framework.

Recommendation 16

The Government should establish an Energy Commission to provide greater scrutiny of energy policy decisions. This would be an independent advisory body, reporting to the Secretary of State, tasked with advising on the best way for all the objectives of energy policy to be delivered. (Paragraph 171)

Recommendation 17

It would be expected to monitor and advise on:

- ***security of supply, assessing changing patterns of demand and the balance of that demand with anticipated supply;***
- ***investment in new electricity generation and the adequacy or otherwise of the incentives in place to induce necessary future investments;***
- ***independent forecasts for supply and demand;***
- ***developments in new energy technologies and their possible impact;***
- ***oversight of the technology-neutral, competitive auction process recommended above; and***
- ***prices and affordability. (Paragraph 172)***

Recommendation 18

The Commission would cover all aspects of the energy market. It would work with those institutions that have been established through legislation such as

the Committee on Climate Change. It would produce an annual report and studies of particular aspects of the market. (Paragraph 173)

The Government already takes into account these factors when considering how best to achieve the objectives of its energy policy. We are not convinced that the establishment of a new statutory body to provide further advice is necessary and may instead create an additional level of bureaucracy in the policy making process.

Recommendation 19

The UK lags behind other countries in the proportion of its GDP it spends on energy research and development. The Government needs to ensure that the additional money pledged for energy research is used in the most cost effective way. (Paragraph 193)

Recommendation 20

The recognition of the need for some oversight of research funding is welcome. Nonetheless we consider the policies put forward do not address the fundamental concerns about the co-ordination of funding and research. (Paragraph 194)

Recommendation 21

Funding should be directed towards research that seeks to reduce the cost of new technologies and make them viable on a large scale. We support the proposal for a National Energy Research Centre, which would provide key leadership in the search for new methods of producing cheap clean energy and translating them into commercial applications. Much of the additional public funding for energy research should go into creating a world-class centre of this kind. (Paragraph 195)

Government is putting the UK's strengths in science, research and innovation at the heart of our industrial strategy. We are increasing research and development investment by £4.7 billion over the period 2017-18 to 2020-21. This equates to an extra £2 billion per year by 2020-21 and is an increase of around 20% to total government R&D spending, more than any increase in any parliament since 1979.

At Budget 2017, the Chancellor announced details of the Industrial Strategy Challenge Fund, which will support collaborations between business and the UK's science base. An initial investment of £270 million in 2017-18 will accelerate the development of disruptive technologies with the potential to transform the UK economy. The first wave of challenges includes two areas with relation to energy innovation:

- Leading the world in the development, design and manufacture of batteries that will power the next generation of electric vehicles, helping to tackle air pollution; and
- Developing cutting-edge artificial intelligence and robotics systems that will operate in extreme and hazardous environments, including offshore energy, nuclear energy, space, and deep mining

This funding is additional to Government's commitment to increase the UK's energy innovation investments, such that by 2021 they will have doubled to over £400 million per year. The Energy Innovation Board will form a strategic role in aligning domestic and international clean tech investments across Government and regulated bodies (Ofgem) to our priorities.

Government is implementing Sir Paul Nurse's recommendations and establishing a single strategic research and innovation funding body – UK Research and Innovation (UKRI). UKRI will catalyse a more strategic, agile and interdisciplinary approach to addressing global challenges and play a key role in helping the UK strengthen its competitiveness as part of the new Industrial Strategy. Government's reforms will strengthen the UK's world-class capabilities in research and innovation. They will deliver a system that is more agile, flexible and able to respond strategically to future challenges, delivering national capability that drives new discoveries and growth. This should enable the UK to remain a world-leader in the creation and application of new ideas and technologies. The Energy Innovation Board is working closely with Research Councils and Innovate UK, and will in future work closely with UKRI to strategically align energy innovation investments.

The Department for Business, Energy and Industrial Strategy has a £505 million programme over this Parliament which will invest in a portfolio of innovation projects across the energy sector. The aim of the Programme is to reduce the cost of decarbonisation by accelerating the commercialisation of innovative clean energy technologies and processes into the mid-2020s and 2030s.

Projects developed under the programme will tackle the particular market failures and market barriers to wider investment in energy innovation. In particular, Government will focus on investments which:

- Would not develop further at pace (at a commercial stage in the mid-2020s/early 2030s) without Government support and intervention
- Can be deployed at scale to significantly reduce carbon emissions
- Can reduce costs for energy consumers and businesses

Under the Programme, we are already investing in the following projects and will be adding to this list throughout the duration of this Parliament:

- Up to £1.3m in an Offshore Renewable Innovation Hub, which is led by the Offshore Renewable Energy Catapult and Knowledge Transfer Network to bring the offshore wind industry together to solve common innovation challenges;
- Up to £9m to reduce the cost of energy storage technologies (including electricity storage, thermal storage, and power-to-gas technologies);
- Up to £600,000 on feasibility studies for a potential first of a kind large-scale future energy storage demonstrator;

- Up to £7.6m for innovative demonstrations of energy demand side response technologies in UK businesses or public sector organisations to reduce their energy use in peak times and provide flexibility to the energy system;
- Up to £20m over 2016-18 to support innovation in the civil nuclear sector;
- Up to £9.2m over the next 4 years on an industrial energy efficiency accelerator to seek industry-specific solutions which are close to commercialisation, by leveraging private sector investment and strengthening UK supply chains to reduce energy costs for UK industry;
- Up to £9m for phase 5 of the BEIS Energy Entrepreneurs Fund, which seeks the best ideas from the public and private sector, particularly aimed at small and medium-sized enterprises, and supports the demonstration of state of the art energy technologies.

Annex A: Contingency arrangements in the event that Hinkley Point C is delayed

There are good reasons to be confident about Hinkley's delivery timescales but the Government will ensure progress is closely monitored, and the Capacity Market provides a mechanism to make good any delays in Hinkley delivering its capacity – just as it does with other capacity risks.

Although the three nuclear projects based on the same reactor technology as Hinkley Point C (HPC) are currently subject to delays, there are good reasons to be more optimistic about the prospects of delivering HPC to schedule (i.e. 2025). HPC is a different proposition – lessons have been learnt and many of the causes for delay in these earlier projects do not apply to HPC. For example, much of the delay at Flamanville is due to changes in regulation and design during the construction phase whereas HPC has already gone through the UK regulator's Generic Design Assessment which helps to minimise this risk.

There are also provisions within the CfD which incentivise delivery. EDF will only receive payment under the contract once the plant begins generating. If commissioning takes longer than four years (i.e. beyond 2029) then the delay will start to eat into EDF's 35-yr CfD, and there is a long-stop date of 2033 after which HMG can choose to terminate the CfD.

That said, as with all large and complex construction projects, there is a risk that HPC's delivery could be subject to delay which, if not correctly managed, could pose a significant risk to security of supply.

Robust technical advice, monitoring, assurance and governance arrangements are being put in place to give an early warning of any problems that may arise during HPC construction. Contractually, the developer (New Nuclear Build Generation Company Ltd) must appoint technical advisors to provide independent advice to the IPA and LCCC. LCCC also has access to detailed information obligations under the CfD – these are wide and ensure that accurate and timely information is provided at all times.

Together, the monitoring arrangements and contract provisions should ensure that any material risks of a delay to HPC's Commercial Operating Date are identified in good time.

BEIS's principal tool for managing to risks to security of supply is the Capacity Market (CM). Known or likely slippages in HPC's delivery can be mitigated through adjustments to the amount of capacity we secure in the annual CM auctions. This approach is not peculiar to HPC; it is the same used for all non-delivery risks.

There are two auctions for each CM delivery year – a four-year ahead (T-4) auction and a one-year ahead (T-1) auction. Almost all of the capacity for a CM delivery year is procured through the T-4 auction, as this provides time for new build capacity to be brought forward if necessary. The T-1 auction acts as a 'top-up' in the event that demand or supply differs from that forecast at the time of the T-4 auction. So, for example, the capacity we will need in 2025/26 (HPC's estimated delivery year) will be secured through a T-4 auction in late 2021, and a smaller T-1 auction in late 2024.

Decisions on the target amount to secure for a CM delivery year are based on advice from National Grid, in accordance with established processes. Specifically:

- Grid produces an Electricity Capacity Report (ECR), by 1 June of the year in which the auction/auctions are run, outlining the capacity requirements under various scenarios/sensitivities set to meet a standard of 3 hours of loss of load expectation.
- Grid's analysis is scrutinised by an independent Panel of Technical Experts who report formally to the Department along with input from Ofgem.
- BEIS officials then make recommendations, based on this advice, to the Secretary of State on the target capacity for a given delivery year. Ultimately the Secretary of State takes the final decision on the amount to secure through the auctions and has the power to deviate from Grid's recommendation, if he is minded to, having regard to the underlying and enduring reliability standard.
- Auction parameters, including target capacity, are reviewed in October and revised if necessary.

In determining their recommendation to BEIS, National Grid establishes a range of potential scenarios and sensitivities for electricity demand in the delivery year and for the amount of capacity needed through the Capacity Market to meet it:

- **NG's Future Energy Scenarios (FES)** –Differing assumptions on plant opening and closure times are also included in the scenarios to capture risks around plant delivery. National Grid currently takes a conservative view of HPC delivery in the scenarios used to inform CM targets¹. Information from the HPC governance arrangements outlined earlier will be factored into the development of these assumptions.
- **Sensitivities** –These are included to account for the range of uncertainty in assumptions such as weather, plant availability, demand and non-delivery risks².

These scenarios and sensitivities are then used in a robust optimisation process called Least Worst Regrets (LWR) to identify the optimal amount of capacity to secure for the delivery year in question. It does this by weighing up the cost to consumers of buying extra capacity which might not be needed if a scenario didn't materialise versus the risk of not buying enough capacity because a scenario did materialise.

It is through these scenarios/sensitivities and the LWR approach that delivery risks to HPC will be taken into account and reflected within recommendations on CM target capacity. We have used this same approach this year to account for the risk that coal plants might win CM agreements and then default and the risk that new gas power stations might win agreements but be delayed.

Of course, it is possible that delivery risks will significantly and unexpectedly worsen after a T-4 auction. If this happens, we have another opportunity to top-up any potential shortfall in capacity through the T-1 auctions (although T-1 auctions are

¹ The connection dates for HPC's 1st Unit within the 2016 FES scenarios range from 2026/27 to 2032/33.

² The non-delivery risk sensitivity currently focuses on coal plant, but in future this sensitivity could cover delays to CfD capacity (such as HPC) as well as CM-contracted capacity.

reliant on sufficient 'uncontracted' capacity³ being available at the time so there are limits to their ability to do this).

We will revisit our plans in the run up to HPC's delivery. Decisions will be taken in 2020/21 regarding the likelihood of a HPC delay (better information will be available by this date) and, in response, whether and how to make adjustments to the amount of capacity we secure through the T-4 auction that year. Decisions on target capacity will balance the risks associated with securing too much capacity (e.g. increasing CM costs) against too little (e.g. potentially increasing our reliance on later T-1 auctions to make good any shortfall). The HPC governance arrangements, coupled with the CM processes and annual cycle of auctions, mean that we will be well-placed to make these judgements and manage risks to security of supply arising from any possible delay to HPC.

³ Capacity that does not already a capacity market agreement from the earlier T-4 auction for that delivery year – this makes T-1 heavily reliant on delays to planned plant closures and additional Demand Side Response resources coming forward