

# Energy UK response to the Infrastructure Finance Review consultation

5 June 2019

## About Energy UK

Energy UK is the trade association for the GB energy industry with a membership of over 100 suppliers, generators, and stakeholders with a business interest in the production and supply of electricity and gas for domestic and business consumers. Our membership encompasses the truly diverse nature of the UK's energy industry – from established FTSE 100 companies right through to new, growing suppliers and generators, which now make up over half of our membership.

Our members turn renewable energy sources as well as nuclear, gas and coal into electricity for over 27 million homes and every business in Britain. Over 730,000 people in every corner of the country rely on the sector for their jobs, with many of our members providing lifelong employment as well as quality apprenticeships and training for those starting their careers. Annually, the energy industry invests over £11bn, delivers £88bn in economic activity through its supply chain and interaction with other sectors, and pays £6bn in tax to HMT.

## Introduction

Energy UK welcomes the opportunity to respond to HM Treasury' Infrastructure Finance Review consultation. This paper presents our response to relevant key questions and outlines our key recommendations. We have chosen to present our response per topics (i.e. power, transport, etc.) rather than answer each question individually.

Since privatisation around 30 years ago, the sector has invested over £170bn to radically transform itself and reduce the reliance on carbon-intensive fuels such as coal. And this is just the beginning: a similar amount now needs to be invested again by 2030 to further decarbonise our power sector through maintaining an energy generation mix, ensuring there is enough electricity to power the increase of electric vehicles, decarbonising heating and the development of new technologies, such as carbon capture, utilisation and storage. At the same time, it is essential that customers' bills are kept down through innovation and competition, and that the government considers the net impact of its policy decisions on customers' bills.

Energy UK has been working on a wide-ranging report titled 'Future of Energy' which looks to address the key issues impacting the UK energy system from the consumer perspective. The chapter 'Funding future electricity generation and system services' address the challenges and requirements on infrastructure finance and future investment needed in the UK energy industry<sup>1</sup>.

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<sup>1</sup> Energy UK, Future of Energy report, April 2019

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## Ensuring long term investment in the energy sector to deliver a low carbon system

### 1. Contracts for Difference and Capacity Market deliver for the market and consumers

#### 1.1. Mechanisms for low carbon generation

Energy UK firmly support the Government's approach to enabling long-term investment through frameworks such as the Capacity Market (CM) and Contracts for Difference (CfD). There is no need for radical change to mechanisms that have to date delivered security of supply and decarbonisation at significantly lower costs than expected.

The Electricity Market Review (EMR) framework, underpinned by the Capacity Market and Contract for Difference regimes, has provided investors with the confidence to invest and as such has seen the cost of capital fall across the sector. However, recent activity with the suspension of the Capacity Market, which must be reinstated as soon as possible, and other uncertainties are impacting on investors' confidence across the industry.

The CfD regime has delivered significant cost reductions to date in low-carbon generation, particularly given the latest contracts for offshore wind in 2017. These reductions have helped to drive down the cost of renewable energy generation, and in turn, keep customers' bills down. We encourage government to reintroduce Pot 1 technologies into the auctions to enable the cheapest forms of renewable energy to compete and further suppress consumer bills. We believe this should be the main mechanism for financing low-carbon infrastructure, outside of large high-risk infrastructure projects, for the years to come.

Some companies are developing renewable energy sites, such as onshore wind, financed through Power Purchase Agreements (PPAs) without the need for government price stabilisation contracts; this is an important alternative to the CfD scheme. However, the PPA market is illiquid and will not provide the volumes of mature renewables required to decarbonise at least cost. Therefore, there continues to be a need for a support mechanism for larger scale schemes to provide price certainty (rather than top up subsidies) and deliver the capacity required.

Finally there continues to be a need to support new or developing technologies (often described as immature technologies) through research and development as well as strong investment in our networks to ensure that they are able to facilitate the higher levels of demand and flexibility expected in the future system.

#### 1.2. Weathering downturns

The current two-way CfD scheme is a good example of scheme design that minimises the negative impacts of downturn conditions on the financing of projects. By guaranteeing the level of payments received by low carbon generators for the first 15 years, the CfD provides investors with increased protection against price volatility and certainty on their investment. The cost of the scheme is based on the difference between the wholesale electricity price and the CfD strike price.

The CM scheme is a reverse auction where generators bid in at what they see the minimum payment they need to receive on top of the wholesale electricity price paid by suppliers for them to operate sustainably. Both the CfD and the CM are funded through customer bills; however, it should be recognised that higher levels of low marginal cost generation, such as offshore wind, 'cannibalise' wholesale market prices, resulting in reduced prices overall for the consumer. HM Government should always consider the net cost to the consumer rather than purely focussing on difference payments.

The CfD contracts offer long term protection against potential downturn market conditions with 15 year contracts. Whilst 15 year contracts are welcome, longer contracts (e.g. 20 years) would further reduce risk, thereby reducing the cost of capital and overall cost to consumers. The CM contract lengths vary between one, three or 15 years.

Over the years, the cost of both schemes has been going down due to advances in technologies and economy of scales. This has led to more competition among power plants, where previously expensive technologies such as offshore wind have become affordable and therefore more competitive and attractive. Ultimately, as costs go down customers benefit. The framework also allows for a UK plan where Scotland, Wales and Ireland can commit to longer term targets and deliver a pipeline of projects to the auctions. Ultimately, this competition leads to costs coming down for consumers.

## 2. Creating certainty out of uncertainty

### 2.1. Clear and consistent energy policy

This consultation comes at a time of uncertainty for the UK energy industry, whether it is Brexit and the uncertain future of the UK's role in the EU Emissions Trading Scheme, or the challenges to future investment in new nuclear generation.

Fundamentally it is essential that the Government policy framework ensures that there continues to be the investment required to maintain security of supply and meet the UK's legally binding carbon targets. To achieve this most efficiently, and at the least cost to consumers in the short and medium-term, Energy UK believes that the policy framework must include:

- a revenue stability support mechanism to drive investment in low carbon generation;
- a capacity market that is technology-neutral;
- a wholesale market that is supported by an effective carbon price; and
- flexibility markets which are open and liquid.

Where Government provides a clear steer, it can provide the industry and investors with certainty on future policy outcomes. For example, the recent announcement on the Government's Offshore Wind Sector Deal shows how the Government, working with the industry, can provide certainty and support a growing industry in the UK.

However, recent policy changes and a lack of signposting, as well as limited frameworks beyond 2020, mean the development of power projects is becoming increasingly risky. Changes to policy and regulation should therefore be carried out via a well-understood and transparent process so that investors can manage potential changes to policy-related revenues and costs with some degree of certainty. Each government should set out its energy policy objectives over the life of the Parliament.

Government can provide clear signals for investors looking to finance energy technologies that offer economic value, with a framework that enables those projects to formulate a viable business case. Regulation should therefore give investors clear sight of potential revenue streams, to some degree of certainty, by setting out an annual policy statement that provides advance notice of future market changes.

### 2.2. Recognising and supporting all technologies

Energy UK and its members recognise that onshore wind is now the cheapest form of new power generation in the UK and we are working to further drive down the costs of low carbon generation through competitive processes to the benefit of customers.

Going forward, it needs to be recognised that using the wholesale price to benchmark the level of subsidy may no longer be relevant, due to the phasing out of fossil fuels. The ambition should be to hold competitive auctions which provide projects at a price that is derived from competitive market pressures, rather than an arbitrary £/MWh target set by policymakers.

We believe that the rolling EMR five-year review process provides a critical framework to ensure that it continues to evolve. This gives a clear trajectory regarding when industry will need to work with government to consider how mechanisms may need to adapt or be replaced, such as when the

wholesale price will no longer be a crucial part of the power market due to zero marginal cost plant dominating the system.

The CfD has given confidence to the energy sector and investors, and should be the main tool to support low carbon investment through the 2020s. However, despite having seen reducing costs of low carbon technologies such as offshore and onshore wind, solar and biomass over the past decade, some technologies are excluded and, therefore, these mechanisms are not delivering an optimal outcome.

A better outcome for customers would be to ensure that CfD auctions are technology-neutral and do not exclude low-cost options such as onshore wind, especially in light of the positive precedent set by the recent announcement on renewable participation in the CM.

As such the current schemes supporting the energy sector, CfD and CM, should be maintained or expanded until we are confident that our carbon commitments can be fulfilled and the right energy mix is in place to support a low carbon economy in the long term.

### Key points

- **The Contract for Difference and the Capacity Market are the best approach to enable long term investment in low carbon generation and maintain security of supply at lowest cost to consumers.**
- **Energy UK and its members recognise that onshore wind is now the cheapest form of new power generation in the UK and we are working to further drive down the costs of low carbon generation through competitive processes to the benefit of customers.**
- **Recent policy changes and a lack of signposting, as well as limited frameworks beyond 2020, mean the development of power projects is becoming increasingly risky.**
- **Government should produce a long-term vision for the UK including the contributions expected from Scotland, Wales and Ireland. This enables the regions to develop a pipeline of projects to allow for healthy competition in future auctions.**
- **Each government should set out its energy policy objectives over the life of the Parliament.**
- **The CfD should be technology-neutral to ensure all developed and developing low carbon technologies have access to long term funding that reflects the evolution of the market, i.e. lower costs driven by technology advances and deployment at scale.**
- **Energy UK welcomes the recent announcement to allow renewable participation in the CM which is a positive move to ensure security of supply at the least cost.**
- **A clear long term vision and 5-year clarity on expected volumes, allows the supply chain to maximise the creation of jobs and has positive impacts on the wider economy.**

## New funding models for large scale infrastructure, new nuclear and CCUS

### 1. The energy system as the foundation for our low carbon society

The CM and CfD schemes have allowed to create a pipelines of new low carbon projects and support existing plants needed during the transition to a low carbon power system. The EU Emissions Trading System (EU ETS) which requires heavy-energy using installations throughout the EU to purchase allowances for each tonne of carbon they emit has also help to drive decarbonisation by promoting investment in low carbon, clean technologies.

However, infrastructure and larger projects require finances on a different scale, automatically attracting a higher risk in terms of capital recovery. Such a risk can be a serious deterrent to private investors who will not want to bear the risk on their own. In this case, new ways to reward the risk must be found and, similarly to the insurance market, the risk must be shared among various partners, public and private.

Appropriate frameworks are needed for large, high-risk infrastructure such as new nuclear and carbon capture, usage and storage (CCUS) where private markets cannot deliver based on current market arrangement alone. These projects need a collaborative approach with Government and private funds to mitigate risk and reduce costs.

CCUS is now rising back up the government agenda due to increasing pressure to accelerate action to mitigate climate change. Government set up the CCUS Council in 2018 with the purpose of reviewing progress of the government's commitments made in the Clean Growth Strategy. At the same time the CCUS Cost Challenge Taskforce was set up to inform and propose a strategic plan for supporting the development of CCUS in the UK, in order to meet the government's stated ambition of having the option to deploy CCUS at scale during the 2030s, subject to costs coming down sufficiently.

More recently the industry-led CCUS Advisory Group was formed to advise on the critical challenges that face CCUS as identified in the Government's CCUS Deployment Pathway. This group is due to report to BEIS in the summer and a public consultation on the best route for CCUS deployment in the UK will follow.

The BEIS Select Committee recently came out with a paper that includes a number of recommendations for next steps regarding CCUS in the UK. One of their key recommendations is that government commits to supporting CCUS where and whilst it remains the cheapest route to decarbonisation, notably in industrial applications. Importantly, they recommend that rather than seeking unspecified cost reductions, the Government should set out plans to ensure that projects are brought forward at least cost. The Select Committee also recommend introducing specific targets to introduce certainty for investors. These targets include accelerating policy delivery to enable CCUS commissioning from 2023, and a target to store 10 million tonnes of carbon by 2030, and 20 million by 2035 to keep the UK on track to meet its 2050 climate targets, as recommended by the CCC.

All of the above clearly point to the crucial role CCUS will play in the UK reaching its carbon budgets and the need to attract investment now in order to deploy CCUS at scale within the next 10 to 15 years.

For decarbonisation of heat to be successful, large-scale trials of CCUS, which is particularly important for industrial heat, will be required in order to demonstrate its viability, coupled with local heat planning from 2020. As such developing a comprehensive heat strategy by the end of 2020 that includes large scale trials and deployment of CCUS and local decarbonisation plans is necessary alongside incremental improvements in building standards and the use of fiscal incentives and regulation.

Energy UK will continue to work alongside the Government to explore routes forward looking at alternative ways of funding such large-scale, low carbon projects to ensure the delivery of decarbonisation at the lowest costs to customers.

## **2. New approach to financing large infrastructure projects**

Large projects such as new nuclear and CCUS require financing models that can attract infrastructure investors at a low cost of capital such as those used to finance UK public infrastructure.

The collapse of the Wylfa Newydd nuclear power plant project in 2018 shows the difficulty around finding investors, and the financing issues associated with large-scale projects, highlighting the need to consider new approaches to financing large infrastructure projects.



Such models should incentivise private investment into large projects by providing a secure payback and return over time and sharing the risk with customers. In the case of energy companies, it allows them to manage their projects and to raise revenue, often through customer bills, or via government subsidies. These finance models are well suited for resource-intensive projects which are expensive, complex, with long term horizons, as they provide investors with a fixed rate of return as the project is being built, counteracting the high cost of capital of the projects. Longer rates of return reduce the risk on investment for capital intensive projects — such as the construction of power plants.

Such models allow for the value of capital investment in the project to be adjusted for the remaining useful life of the investment and revenues to be set to recover all efficient costs (construction and operation) plus a financial return on the asset value.

These types of projects would likely require an independent regulator to ensure that prices are not set too high and to provide efficiency incentives that would normally be found in a competitive market environment.

#### The Regulated Asset Base (RAB) financing model for new nuclear

A RAB financing model can address key investor issues for new nuclear and enable projects to secure the financing they require to proceed. The RAB financing model also drives a significantly lower cost of finance improving customer value for money while keeping investors strongly incentivised to minimise costs.

An independent economic regulator is appointed to monitor the project

Construction risks are shared between investors and customers through an incentive mechanism. Financing and operating risks are also be partly shared.

This incentivises to achieve efficiency (e.g. highly incentivised to deliver construction to budget and to time)

A competitive process is used to set the investor base and rate of return during construction. The regulator sets the rate of return after the construction phase.

An allowance for revenues is set during construction to allow for recovery of financing costs and significantly reduces costs in operation

During operation, revenues are calculated by the regulator in a similar way to typical regulated utility approach, incorporating nuclear specific operating and cost factors with periodic price reviews.

Source: EDF Energy presentation

### **3. Carbon pricing will continue to have a role in driving low carbon projects**

Carbon pricing is widely recognised as the most efficient and technology-neutral driver of reducing carbon emissions. Unlike other regulatory interventions, it places a cost directly on the negative externalities of carbon emissions. It has an impact both on existing market operations and on future investment decisions.

As electricity is decarbonised and the proportion of renewables in the fuel mix increases, low or zero marginal cost renewables will generate more often. Nevertheless, fossil fuel is likely to provide the marginal generation source for some time to come. A strong carbon price<sup>6</sup> will be required to support the development of low carbon sources of capacity and flexibility to displace fossil fuelled peaking plant.

Regardless of the outcome of the negotiations on the future relationship between the UK and the EU after the UK leaves the EU, the UK will need to ensure it maintains a strong carbon price. The best way of doing so it for the UK to remain the EU ETS, either as a direct participant, or indirectly by setting a UK ETS and linking it to the EU ETS. This will allow the UK to remain part of the largest carbon markets.

### Key points

- **Energy UK will continue to work alongside the Government to explore routes forward, looking at alternative ways of funding such large-scale, low carbon projects to ensure the delivery of decarbonisation at the lowest costs to customers.**
- **Appropriate frameworks will be needed where private markets cannot deliver, such as for large capital intensive infrastructure (e.g. new nuclear and carbon capture usage and storage (CCUS)).**
- **Infrastructure and larger projects require finances on a different scale that provides new ways to reward the risk which must be shared among various partners, public and private.**
- **Mechanisms such as the Regulated Asset Base (RAB) model should be explored to see whether such mechanisms can de-risk these projects, and ultimately keep bills down for customers.**
- **CCUS can play a crucial role in the decarbonisation of heat and trials must start now to allow the UK to deploy low carbon heat at scale.**
- **A strong carbon price is still needed to drive decarbonisation. Regardless of the outcome of the UK leaving the EU, the UK must remain in the EU ETS, either directly as now or indirectly by setting up a UK ETS linked to the EU ETS.**

## A post European Investment Bank world for the UK

### 1. The crucial role of the EIB

Energy UK recognises the European Investment Bank's (EIB) crucial function to the UK in helping to address certain gaps in the market, by providing affordable loans tailored to projects in new technologies. The EIB can successfully fulfil these functions thanks to the purpose of the bank and its AAA credit rating, which allows it to borrow at lower interest rates. This has helped reduce the risk profile and hence cost of energy infrastructure projects, making them more affordable to consumers, but still be able to attract private sector capital to UK infrastructure. The offshore wind sector is a good example of this success story and is now globally recognised as the domain of expertise of the UK.

In 2017, half of the lending by the EIB Group (including the European Investment Fund) to the UK was directed towards infrastructure; just over one billion pounds. Energy companies in receipt of EIB lending would mainly fall into the infrastructure category even though they can also appear under the SME and environment categories. The largest loan in 2017 for the energy sector was for the financing of rehabilitation and improvement of the GB gas distribution network.

The UK energy infrastructure has benefitted from access to a number of European funding mechanisms, including via the European Investment Bank (EIB) and the European Fund for Strategic Investments (EFSI). The UK Government should examine the potential to remain an associate member of funding mechanisms such as the EIB and EFSI as well as the Horizon 2020 programme. If this is not possible, funding schemes providing the same benefits as those provided by the EU should be created in the UK to ensure that access to finance at a reasonable cost remains open and



accessible to all technologies needed to fulfil our carbon commitments. The private sector on its own will not be able to replicate the functions provided by the EIB and therefore the UK Government will need to explore how best to fill this space.

## 2. Filling the void

The Government, in close collaboration with industry, should examine the possibility to replace EU funding mechanisms in a way that delivers an equivalent incentive for UK energy infrastructure development and promotes a strong industrial strategy where energy sits at its heart. This cannot be delivered by the private sector alone as it is not in a position to address some of the gaps in the market in a way a financial institution such as the EIB is able to.

Ensuring that new low carbon technologies still at a relatively early stage of development and deployment have access to innovation funding is crucial to ensure the UK does not fall behind in the race to enter these new markets and develop world leading technology. The UK and the EU should put in place arrangements to ensure EU and international collaboration in R&D continues.

Energy UK welcomed the decision announced by the Treasury in August 2018 that UK organisations that secure funds through EU programmes, from now until the end of 2020, will be guaranteed by the UK government even in a no deal scenario. However, more needs to be put in place to prevent the UK's transformation from stalling and losing its competitiveness in areas such as offshore wind and other low carbon technologies.

If post-Brexit arrangements do not facilitate direct participation and access in EU schemes, the UK Government could provide matched funding so that UK academia and industry are not disadvantaged compared to EU entities. The Government will also need to look at expanding the capabilities and remit of other UK funding schemes or create new investment banks to make available loans for grid development, storage, renewable energy and energy efficiency to support its ambitions for a low carbon economy.

While our response focusses mainly on how the energy sector can access EU funding, it is important to take a whole system approach in order to understand how the success of the UK's transition to a low carbon economy is also linked to new technologies such as battery storage and electric transport, which also heavily rely on EU innovation schemes.

Energy UK recommends that the UK Government undertakes a review of its current funding mechanisms against its industrial strategy, taking into account of the risk of a vacuum that the end of access to EU funding mechanisms might create, to ensure that important infrastructure projects have the necessary support and access to funds post-Brexit. This should include reviewing the recommendation from the National Infrastructure Commission (NIC) to look into establishing a new, operationally independent, UK infrastructure finance institution. This will help fulfil some of the functions held by the EIB to UK infrastructure projects over the last few decades, mainly providing affordable loans and supporting emerging technologies that cannot attract the necessary investment from the private sector.

### Key points

- **Energy UK recognises the European Investment Bank's (EIB) crucial function to the UK in helping to address certain gaps in the market, by providing affordable tailored loans to projects in new technologies by backing them. The offshore wind sector is a good example of this success story and is now globally recognised as the domain of expertise of the UK.**
- **Ensuring that new low carbon technologies still at a relatively early stage of development and deployment have access to innovation funding is crucial to ensure the UK does not fall behind in the race to enter these new markets and develop world leading technology.**

- **The Government will need to look at expanding the capabilities and remit of other UK funding schemes or create new investment banks to make available loans for grid development, storage, renewable energy and energy efficiency to support its ambitions for a low carbon economy.**
- **Energy UK recommends that the UK Government undertakes a review of its current funding mechanisms against its industrial strategy to ensure that important infrastructure projects have the necessary support and access to funds post-Brexit. This should include reviewing the recommendation from the National Infrastructure Commission (NIC) to look into establishing a new, operationally independent, UK infrastructure finance institution.**

## **Energy efficiency, a national infrastructure approach**

There are significant economic, environmental, comfort and health benefits to be gained from making energy efficiency improvements. However, the current funding levels for energy efficiency are not sufficient to meet the goals set out in the Clean Growth Strategy, England's Fuel Poverty Strategy or the 2050 emissions targets. Strong regulations are needed to drive action, such as minimum property standards, along with incentives to support a private market for energy efficiency and public funding for fuel poor households.

### **1. Access to capital and large upfront costs**

Significant action is needed to fill the policy gap for energy efficiency across the domestic and non-domestic sectors. A recent report by Frontier Economics on behalf of the Energy Efficiency Infrastructure Group (EEIG), examined the UK's aspiration for as many homes as possible to attain EPC band C by 2035 (where practical, reasonable and affordable). It found that to achieve this, a £4.5 billion per annum investment gap needs to be filled, from a combination of increased private and public funding<sup>2</sup>. In 2018, the National Infrastructure Commission (NIC) estimated that around 21,000 energy efficiency improvements need to be installed per week to meet the 2035 target, but noted a current rate of progress of only 9,000 measures per week.<sup>3</sup>

To stimulate the market, the Government should introduce strong regulations on domestic and non-domestic properties to improve the energy efficiency ratings of their buildings. To sell or rent a domestic or non-domestic property after 2030 (or by 2035 at the latest), it should be required to meet an EPC band C or higher. This is subject to reasonable exceptions, such as listed buildings and practical limitations.

The Green Deal recognised that the cost and availability of capital is a key barrier. It is a tough sell to ask consumers to invest in measures with a large upfront cost with a long payback period. And tougher still if they see themselves moving house and not benefiting from the measures themselves. In addition, householders may not see a clear increase in the value of their property.

In 2013, the Government launched the Green Deal, a 'pay as you save' loan to help households fund energy efficiency improvements. However, it overestimated demand and misjudged the barriers to

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<sup>2</sup> Frontier Economics (2017), Affordable warmth, clean growth, <http://www.frontier-economics.com/uk/en/news-and-articles/articles/article-i4324-affordable-warmth-clean-growth/>

<sup>3</sup> National Infrastructure Commission (2018), National Infrastructure Assessment 2018, <https://www.nic.org.uk/publications/national-infrastructure-assessment-2018/>

take-up. Ultimately, just 13,954 Green Deal plans were issued (as of November 2018<sup>4</sup>). For the consumer market, the Green Deal offering was complex and unintuitive. Its guaranteed interest rate for 20+ years was also perceived as poor value at a time of historically low rates.

Nonetheless, for some households and businesses, even with the appropriate incentives, access to capital will remain a genuine barrier that in theory 'pay as you save' schemes like the Green Deal could help address. To ensure that households and businesses can actually, practically and efficiently comply with any new requirements, government should also consider how it can help households and businesses access required capital.

Under the right circumstances, with the right design, 'pay as you save' mechanisms could still provide customers with access to the funding they need while minimising the disincentive of large upfront costs. The Government should also look to work with the finance sector to develop green loans and mortgages, with the specific aim of helping small businesses and the domestic private rented sector.

With this in mind, we welcome the recently announced call for evidence on a business energy efficiency scheme. A state-funded national programme could help many SMEs to overcome capital concerns. However, any scheme should be funded in a progressive manner (i.e. not via energy bills). It should also draw lessons from past domestic energy efficiency supplier obligations, and not unintentionally restrict the growth of a genuine market.

## 2. Supporting innovation

New technologies and methods are likely to be needed to improve the cost-effectiveness of energy efficiency measures. The Government should ensure support to develop new technologies and innovative approaches, providing a route-to-market in the able-to-pay space.

The fairest and most progressive method of funding an energy efficiency programme to address fuel poverty is through general taxation. The Government should develop a centrally-funded national energy efficiency scheme to improve the quality of UK homes for those in or at risk of fuel poverty. The EEIG estimated that the total cost of such a scheme would be around £1.7 billion per year (including the funding currently allocated for ECO3).

ECO has worked best when it is paired with other funding, such as the Home Energy Efficiency Programme (HEEP) in Scotland and the NEST and Arbed Programme in Wales. This has allowed ECO and public funding to be combined to deliver measures in more remote locations where cost would otherwise be a barrier. Initiatives in Scotland have also made good use of area-based schemes, partnering with ECO obligated suppliers, local authorities and social housing providers to deliver measures that are most effective at scale, such as solid wall insulation, and using local experience to more effectively identify vulnerable households. The design of any future energy efficiency scheme should make use of these learnings.

In addition, there may be opportunities to use additional sources of funding with other stakeholders that benefit from the positive effects of energy efficiency. Given the benefits to the health of individuals, there may be opportunities to partner with the health sector to deliver household energy efficiency measures.

Given the government's new powers under the Digital Economy Act 2017, any new scheme should also look to make use of government data to streamline the process of identifying households that need support. The Department of Work and Pensions' data-match with suppliers to target the delivery of Warm Home Discount Core Group rebates provides a clear example of best practice in this area.

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<sup>4</sup> BEIS (2018), Households Energy Efficiency National Statistics, headline release December 2018, <https://www.gov.uk/government/statistics/household-energy-efficiency-national-statistics-headline-release-december-2018>

**Key points**

- **Significant action is needed to fill the policy gap for energy efficiency across the domestic and non-domestic sectors.**
- **To stimulate the market, the Government should introduce strong regulations on domestic and non-domestic properties to improve the energy efficiency ratings of their buildings.**
- **Under the right circumstances, with the right design, ‘pay as you save’ mechanisms could still provide customers with access to the funding they need while minimising the disincentive of large upfront costs.**
- **The Government should work with the finance industry to support the development of new financial products and services, such as Green Mortgages and improve access to capital to make it easier to fund energy efficiency improvements.**
- **The Government should develop a centrally-funded national energy efficiency scheme to support households in or at risk of fuel poverty, making use of best practice to develop solutions tailored to different areas, customers, measure types and funding arrangements.**
- **Energy UK welcomes the recently announced call for evidence on a business energy efficiency scheme as a state-funded national programme could help many SMEs to overcome capital concerns. It should however be funded through general taxation rather than via energy bills.**

**Electric vehicles for sustainable cities and communities**

To meet our decarbonisation targets, the UK needs to achieve a significant reduction in transport emissions over the next decades. By 2030, electric vehicles (EVs) will be a routine sight on UK roads, making up at least half of new vehicle sales<sup>5</sup>, over one-third of the cars and vans on the road - numbering up to 10 million - will be electric<sup>6</sup>. This will deliver a major reduction in transport emissions, better air quality and significant economic opportunities for UK Plc.

The UK’s ambitious carbon budgets are driving emissions reductions across the transport sector, which account for 27 per cent of total UK emissions<sup>7</sup>. The focus on improving air quality, particularly in urban areas, adds further impetus to ensuring these targets are met: it is estimated 10,000 premature deaths per annum are attributable to road transport<sup>8</sup>. The healthcare costs to the NHS from air pollution alone are estimated at £6 billion per annum<sup>9</sup>.

EVs can become valuable system assets, offering significant benefits for both consumers and the wider energy system. EVs’ contributions to the smooth operation of the energy system should be market-driven, and therefore voluntary and compensated. Given the importance of encouraging users to charge off-peak, setting smart charging as default should be considered, provided that drivers retain the ability to opt out and charge how and when they want.

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<sup>5</sup> <https://www.gov.uk/government/publications/reducing-emissions-from-road-transport-road-to-zero-strategy>

<sup>6</sup> <https://www.theccc.org.uk/publication/plugging-gap-assessment-future-demand-britains-electric-vehicle-public-charging-network/>

<sup>7</sup>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/776085/2017\\_Final\\_emissions\\_statistics\\_-\\_report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/776085/2017_Final_emissions_statistics_-_report.pdf)

<sup>8</sup> <https://www.cleanairday.org.uk/Handlers/Download.ashx?IDMF=7eb71636-7d06-49cf-bb3e-76f105e2c631>

<sup>9</sup> *ibid*

## 1. Setting ambitious targets

Strong and ambitious commitments from the Government are needed to build confidence in the transition to zero emissions. Although Energy UK supports their commitment to phase out the sale of ICE vehicles by 2040, our industry believes that the UK can and should go further.

We are confident that the power sector can be ready for an earlier rollout of EVs than currently projected by the Government. Provided the right investment frameworks are in place, including the Capacity Market and CfD, and the move is to a smart charging system, we will be able to support and promote the target for all new cars and vans to be electric by 2035 – ahead of the Government’s own target.

According to the CCC<sup>10</sup>, the sale of ICE vehicles needs to end by 2035 to meet the Government’s target of having near-zero road transport emissions by 2050. This would allow roughly 15 years for the last stock of ICE cars and vans to run its course. Beyond high-level targets, support is important in the short-term to encourage drivers to make the switch to EVs. Public subsidies for EVs and charge points continue to play a vital role and need to be maintained while the market matures.

One option is to link reductions in subsidy to the market share of EVs. This has the advantage of providing certainty to industry and consumers and, if done effectively, prevents support being prematurely cut and damaging supply chains.

The trigger for subsidy to be reduced should be open for discussion. For example, it may be that the EV market is deemed to be mature once a given proportion of vehicle sales are EVs. Or, the trigger could be the point when there’s parity between the upfront cost of EVs and ICE vehicles. Whichever is used, support should remain in place to reflect the importance of reductions in carbon emissions and air pollution.

Concerns exist about whether the power system will be able to manage the additional load on the system and the flexibility requirements. However, provided the appropriate frameworks are in place, the energy industry will deliver the power required to enable all new cars and vans to be electric by 2035.

## 2. Appropriate support

The UK Government has stated that it “[...] will not own or operate a charge point network now or in the future”<sup>11</sup>. Energy UK strongly agrees with this statement and is calling for financial support to be limited to helping cover the cost of the grid connection to avoid distorting the wider competitive market.

The private sector has a crucial role to play in rolling out charging solutions and developing attractive offerings that appeal to drivers. Significant progress to date and a number of announcements, by Ionity<sup>12</sup> and Pivot Power<sup>13</sup> among others, highlight private sector willingness to invest in innovative solutions to meet drivers’ needs and overcome range anxiety.

Supporting the costs of installing charge points by funding the network connection would complement this activity, building on the existing progress and further unlocking investment across the UK. This would reduce the risk of installing charge points and provide a mechanism for network operators to recover costs in an equitable manner.

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<sup>10</sup> <https://www.theccc.org.uk/wp-content/uploads/2018/10/Lord-Deben-to-Chris-Grayling-Greg-Clark-on-Road-to-Zero.pdf>

<sup>11</sup> P16 [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/739460/road-to-zero.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/739460/road-to-zero.pdf)

<sup>12</sup> [https://ionity.eu/\\_Resources/Persistent/14e6304003e2cc95f78413bc9081b53309197b17/20180903\\_IONITY-PRICING\\_E.pdf](https://ionity.eu/_Resources/Persistent/14e6304003e2cc95f78413bc9081b53309197b17/20180903_IONITY-PRICING_E.pdf)

<sup>13</sup> <https://www.pivot-power.co.uk/pivot-power-work-national-grid-future-proof-energy-system-accelerate-electric-vehicle-revolution/>

There will be a variety of opportunities to charge an EV, and the market is well placed to deliver in most instances. There must be consistent access to a well-maintained nationwide charge point network. There is a marginal business case for investment in some areas. The Government will need to subsidise the grid connection cost of ultra-rapid chargers in strategic locations, to ensure a nationwide provision of charging infrastructure.

### 3. Financing the transition

If no action is taken, the Government risks a shortfall in revenue from vehicle excise duty and fuel duty as drivers migrate from the combustion engine to EVs. Various options for funding the transition have been proposed and a broad discussion about who pays, and how, needs to start now.

The private sector has been, and will continue to be, pivotal to the decarbonisation of road transport. As Government support is reduced, so private investment will continue to grow as the market matures and develops. But today, the Government needs to address some thorny issues around the “who pays?” debate.

Motorists currently pay around £28 billion a year in fuel duty and £6 billion in vehicle excise duty (VED)<sup>14</sup>. EV drivers are currently exempt from these charges. Modifying the VED regime to allow for the uptake of EVs should not be difficult, provided it is done gradually and communicated ahead of time. Fuel duty, however, is more challenging. Transitioning from ICE vehicles to EVs will require a change in how and on whom fuel duty is levied. Various alternative approaches have been proposed<sup>15</sup>, but each has a range of pros and cons, with no obvious solution to the problem.

One thing is clear, however: fuel duty cannot simply be transferred to electricity bills as the new fuel source, as this would be applied to all electricity – rather than purely to power used to charge a vehicle. It would disincentivise the switch to EVs and, indeed, the further uptake of electric heating, which is likely to have an important role to play in decarbonising heat in the UK. In addition, tackling fuel poverty and helping vulnerable customers remains a key priority for both the Government and the energy industry. Levying fuel duty onto electricity bills would be at odds with that goal, affecting all energy users irrespective of their ability to pay.

#### Key points

- **Long term policy direction to businesses and domestic consumers is needed. This will send a strong signal to UK drivers that everyone will be required to move away from ICE vehicles and will provide clarity on when subsidy will be removed.**
- **The private sector has a crucial role to play in rolling out charging solutions and developing attractive offerings that appeal to drivers.**
- **The Government will need to subsidise the grid connection cost of ultra-rapid chargers in strategic locations, to ensure a nationwide provision of charging infrastructure.**
- **Linking subsidy removal to the market share of EVs while the sector remains in its infancy will help maintain public support for EVs.**

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<sup>14</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/720080/FOI2018-07265\\_-\\_Fuel\\_duty\\_\\_VAT\\_and\\_VED\\_revenues.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/720080/FOI2018-07265_-_Fuel_duty__VAT_and_VED_revenues.pdf)

<sup>15</sup>

<https://www.theiet.org/impact-society/factfiles/transport/road-user-charging/>  
<https://www.acenet.co.uk/media/1139/funding-roads-for-the-future.pdf> ;  
<https://policyexchange.org.uk/wp-content/uploads/2017/07/Gergely-Raccuja-Miles-Better-Revised-Submission.pdf> ;  
<https://policyexchange.org.uk/publication/driving-down-emissions-how-to-clean-up-road-transport/>



- **Transitioning from ICE vehicles to EVs will require a change in how and on whom fuel duty is levied. Fuel duty cannot simply be transferred to electricity bills as the new fuel source, as this would be applied to all electricity.**