



BEIS Select Committee explore finance and investment in UK's future energy infrastructure.

BEAMA response

BEAMA is a trade association representing manufacturers of electrical infrastructure products and systems, from transmission and distribution equipment to the environmental systems and services in the built environment, with over 200 members ranging from SMEs to large multinationals. BEAMA member's products provide a low carbon, safe and secure UK energy system. We support our members on ensuring that the UK has a strong market for energy products, creating export opportunity for our industry.

The product sectors BEAMA represents as a trade body in the context of this inquiry include:

- Energy Storage - behind the meter (electrical, thermal, phase change) and low to high voltage network storage system infrastructure.
- Low carbon heating, hot water and ventilation equipment in buildings
- Behind the meter smart controls and building management systems
- EV Charging Infrastructure
- We don't represent generation assets e.g. solar, wind - but we represent the associated equipment for their installation e.g. inverters, smart controls, active network management, switchgear, to provide examples of a few.

We are very supportive of the Government's Clean Growth Strategy and Smart Systems and Flexibility Plan, and we are pleased to see UK Government making the commitment to develop a market for flexibility which will enhance our potential for a low carbon energy system. However, while Government ambition and rhetoric has in recent years supported the move to develop renewable energy in the UK market, and our members have followed to bring products to market in the UK as a result of this, the level of investment in the sector is reducing and it is becoming increasingly difficult for our members to gain investment and launch projects in the UK. We therefore welcome this inquiry and hope this can start a discussion with industry in how to tackle the problems the market is facing today and build a prosperous renewables and low carbon sector in the UK.

We outline in this response the potential reasons for the investment challenges our members are facing today. We have recently been communicating these comments to BEIS, in response to the review of the Smart Systems and Flexibility Plan, and in recent consultations including Ofgem's Targeted Charging review. BEAMA, working closely with other trade associations, has also launched a survey of renewables and low carbon technology manufacturers to gather evidence on the exact fluctuations in investment linked to regulatory changes in the UK, and hopefully this will provide an indication of the %revenue lost to the UK market in recent years/ months. While this survey will not be complete in time for the Inquiry deadline of the 3rd of April, we hope to provide this additional evidence towards the end of April, and therefore hope this can still be factored into policy decisions to be made in support of improving UK investment opportunities for our market.

We ask for the opportunity to present this evidence to the BEIS Select Committee at a latter date.

- **How do recent investment decisions on nuclear and trends in low carbon investment affect the UK investment outlook for energy infrastructure? Is there a case for changing the Government's current approach to delivering a low cost, low carbon energy system? How could the 'nuclear gap' be filled?**

The 'nuclear gap' presents a challenge to UK energy security. The UK energy system is at a key transition period, with needed asset replacement, as well pressures to decarbonise and manage increased electrical loads and distributed generation. The nature of the grid and the way that people access electricity is changing fundamentally, driven by digital transformation and a trend towards prosumers taking control of their energy choices by generating and trading their own electricity. Acknowledging the need to manage increased demand on the system in coming years from electric vehicles and low carbon electric heating this 'nuclear gap' needs to be filled. This gap can be bridged with significant investment in other low carbon energy solutions, and co-location of storage with renewable generation assets, including smaller scale distributed generation. Developing the system's capability for flexibility through technologies such as storage will be key in bridging the 'nuclear gap', decarbonising the system and tackling the volatility that stems from increased levels of renewable energy generation. However, the current regulatory and investment landscape for this market is unlikely to allow the level of uptake needed to bridge the gap and adequately decarbonise.

Further to the need to expand infrastructure to accommodate for renewables and enable flexibility on the system we must consider the implications on transmission links the planned nuclear plants would have resulted in. Without nuclear these links are no longer required. If the focus moves to decentralised distribution and storage then the whole planning, investment, product types required for the system is significantly different. BEAMA believe renewables and flexibility on the system can help tackle the nuclear challenge in the UK but the supply chain needs a clear strategy linking electrification of heat to generation and grid connections and required investment in transmission and distribution across the system.

- **How attractive is the UK energy sector for investment compared to other countries? Are there particular technologies which are more – or less – attractive to investors under current arrangements?**

At the moment our members are reporting the UK is increasingly becoming less attractive for investment compared to other countries. Specifically, we already have evidence from our membership that the storage market is suffering from reduced investment in the UK as a result of recent regulatory and policy proposals, and lack of market incentive for flexibility on the system. Latter in our response we have elaborated to explain exactly why this is happening.

Brexit has already had a significant impact on our member's business in the UK, and this is a factor that can't be ignored in the debate surrounding investment in the energy sector. Arguably post Brexit energy is one market that could remain very much aligned with the EU, due to our physical connection to mainland Europe through major interconnectors, but also due to the need to maintain regulatory alignment of product regulations. Therefore, we can envisage our market opportunities for products in the EU should remain strong post Brexit. However, due to the ongoing uncertainty, UK investment has struggled over the last 2 years, and until there is more clarity business will continue to move out of the UK. Here we refer to a report published by EURIS (BEAMA is the founding member of EURIS), outlining the financial impact Brexit has had on our members to date and the knock of effects for the energy market specifically¹.

¹ EURIS, Securing a competitive UK manufacturing industry post Brexit, <http://www.euristaskforce.org/position-papers/securing-competitive-uk-manufacturing-industry-post-brexit/>

However, a key driver of uncertainty and one that has had a significant impact on investment decisions, particularly in distributed energy assets, has been the state of policy flux and regulatory uncertainty that has come from BEIS or Ofgem in the past eighteen months – either through regulatory actions being contradictory to aspirations set out by Ministers, policy changes that are harmful or detrimental to the business case for investment in energy assets, or a piecemeal approach that leaves investors deeply unsure about future revenues or the stability of the incentive and market frameworks aimed at encouraging investment in renewables infrastructure.

- **How has Government policy improved the UK energy investment environment over the last three years?**

We have reported to BEIS how the outlook for investment in the renewables and low carbon sector is not a positive one today. Despite the potential opportunity for a prosperous renewables and low carbon technology market in the UK, investment is stalling, and our members have even been reporting cases of projects being suspended or cancelled. While Government ambition and rhetoric supports the development of a flexible and low carbon energy system, in reality the policy and regulatory landscape is not aiding investment in the sector.

This pattern stems from several changes in the UK market which are not providing investors with the market certainty needed in the UK. This stems from a number of specific actions recently taken by the regulator and UK Government as well as there still being a lack of clarity for the overall future market design for the energy system supporting an increase in renewables, large and small scale, linked to flexible low carbon technologies.

Specific policy and regulatory changes linked to reduced investment confidence:

1. To develop a low carbon flexible energy system significant regulatory change is required to ensure the market design is appropriate to incentivise investment in the right systems, and deliver the market services to customers needed. This regulatory change is known and much of this is documented in the BEIS Ofgem Smart Systems and Flexibility Plan. However, change is taking place in a piecemeal fashion, in many cases leading to the removal of existing market incentives before new incentives or market mechanisms are introduced.

A good example of where we are seeing reform under the existing regulatory structure being conducted in a piecemeal fashion relates to the current Significant Code Review conducted by Ofgem. Here we are engaging with Ofgem on the Targeted and Forward Charging reviews (which we believe to be fundamental to the future of more reflective charging and pricing methodologies for the system enabling flexibility). Following the Ofgem Targeted Charging Review Consultation BEAMA and other key trade associations in the market have collectively identified significant issues with the 'minded' decision by Ofgem to fix residual charges before implementing reform to forward charges. The issue we have identified is the timing of reform for residual and the forward-looking elements would result in a year or two with limited network benefits for flexibility and storage, as reform for forward charging is planned to come in later. Decoupling the targeted charging review from the forward-looking review leaves a big gap in the market, which is very destabilising for our industries.

Our members are already seeing reduced investment as a direct result of this proposal, and this is especially impacting on the storage market in the UK.

2. Further, the proposal to extend Generation BSUoS to distributed generation is unexpected and could not have been foreseen from the outcome of the removal of the TNUoS embedded benefit or the initial Targeted Charging Review documents. The inability for industry to respond will be exacerbated by implementing it in April 2020 – leaving industry less than a year from the final decision.
3. We have also seen with the closure of the Renewables Obligation, Feed-in Tariff export payments and restrictions placed on onshore wind development has had a negative impact on the renewables market and undermined investment. Again, this is not evident of a stable regulatory environment on which investment decisions can be confidently made. As a result, BEAMA members are seeing hesitant and reduced investment in the market. While a Smart Export Guarantee for suppliers has recently been announced by the Government what will happen in the meantime to renewable and storage investment in the UK is still being questioned, and it isn't providing the assurances for investors needed to keep the market buoyant.

The newly announced Smart Energy Guarantee is potentially a fresh start for the regulations governing the export of generated energy to the grid, and Ofgem should use this opportunity to clarify the regulations in ways that actively encourage consumers to employ distributed renewable generation and storage systems together to provide flexibility to the system.

4. Furthermore, we believe the work to legislate for an appropriate definition for storage needs to be brought forward, going beyond storage as just a subset of generation. This is again creating too much uncertainty in the market, while we already have identified issues with co-location of storage with renewables. A legislated definition of "storage" needs to be agreed without further delay. This definition should be designed to provide more market certainty and encourage investment in distributed storage co-located with renewable generation. The regulations governing co-located storage and generation should also reflect the advances in smart metering that make it possible to measure energy imported from and exported to the grid.
5. The GB energy system is at a high transition period and there is a need for enhanced supply chain engagement and supply chain planning to ensure a buoyant market in the UK and channel investment. We have been aware, that for some time, manufacturers are witnessing reductions in investment for certain technologies by the DNOs, despite the need for asset replacement to tackle anticipated increased electrical demand from EVs and heat and due to the connection of other low carbon technologies and generation assets. We are aware this could be due to DNOs seeking to enhance their regulatory returns or that spend could either be back ended in the RIIO 1 period, or deferred entirely into RIIO2.

The supply chain foresees serious risks that there may be significantly higher volumes of orders later in RIIO 1 or deferred to RIIO2 to tackle asset replacement to ensure network performance and reliability expectations are met, or as a result of any increased demand due to the connection of new load during 2019 – 2023. This presents challenges for the supply chain and may impact its ability to deliver solutions, people and products at the scale required. There is a need to provide a level of certainty and an environment that allows network product providers to invest in people and places. There is currently concern that industry will not have the skills required at appropriate scale and lack of confidence in investing in skills development with little certainty as a result of current market and DNO

investment landscape. This type of spending pattern could lead to orders going abroad when the technology is needed in the UK.

We are still seeing much segmentation of work in Government and Ofgem and while changes are being considered for existing regulatory barriers in the market, the changes being proposed are still based on a fundamentally flawed regulatory system for a flexibility market. BEAMA recently supported the publication of the report Redesigning Regulation² alongside other partners including the Energy Systems Catapult, Imperial College, Tech UK and other key stakeholders. This report identifies the need to simplify and reform the current regulatory framework and we believe Ofgem and BEIS need to be radical in their approach to design a market and regulatory structure that will get the most out of a flexible energy system for customers in the long term.

- **What role should the Government play in providing financial support and sharing risks for new energy infrastructure? Are existing financing mechanisms, notably the Contracts for Difference, fit for purpose? Are there any practical issues, or potential unintended consequences, that could affect the feasibility of implementing alternative support models (such as a Regulated Asset Base)?**

Both CfD and RAB approaches are likely to be needed for long term projects with high, up front, capital costs. It must be recognised though that these are, in effect, Government support and risk sharing that will not be available to flexibility providers and shorter life assets which compete against these large generators.

RAB would be preferred against CfD as it avoids the worst possible long-term effects on the energy market, especially where the level of innovation makes setting a strike price very uncertain. However, it does create a privileged position for a part of the power generation market that is effectively taken out of the market. This can be justified if the Government is of the view that this particular generation capacity is essential. It follows that the remaining generation capacity that is in the market and accepting the risk should, on average, attract a better rate of return.

- **What further steps should the Government take to increase investor confidence in the UK energy sector?**

Government need to take steps to develop a more comprehensive strategy of policy and regulatory change needed in the market to support a low carbon flexible energy system, this should include a clear trajectory for regulatory change. Any removal of market incentives needs to be conducted in conjunction with the introduction of replacement market mechanisms, known in advance so that investors can clearly see the longer-term market opportunities. Government need to instil confidence in the investment community that market incentives / mechanisms will remain stable.

Under RIIO the market needs to see more consistent spend and investment strategies so that the supply chain can be ready to tackle the asset replacement needs in the UK. Current indications of reduced spend and likely back ended spend under RIIO is a serious risk for the UK supply chain and market.

² <http://www.beama.org.uk/resourceLibrary/redesigning-regulation-powering-from-the-future.html>



Without the level of investment in nuclear previously planned a strategy and investment plan needs to be developed to outline the infrastructure needs across the system.

We support radical regulatory change and this can be done in a planned manor which will aid investment. A radical move to develop the renewables and associated flexibility market in the UK will present a huge opportunity for UK companies as the UK can be viewed as a leader in this market, with other countries looking to UK companies for expertise and technology. We know this is the direction of travel globally but if the UK doesn't adequately support this market now, we will loose out of the potential investment. There are also many UK SMEs that have started off the back of the UK innovation funding, developed in the knowledge this would lead to real market opportunity in the UK, these companies are now at risk.

BEAMA welcome any follow up regarding this inquiry with the Select Committee and hope our Survey conducted in April will provide more supportive evidence of the level of investment change our members are seeing today. We ask for the opportunity at a latter date to present these findings to the Committee.

Kind regards

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For more information on our views relating to advancements in the development of a flexible, low carbon energy system please download our Electrification by Design Series from the BEAMA website [here](#).

