Building a Zero-Carbon Economy – Call for Evidence

Response on behalf of the Solar Trade Association

About us

Since 1978, the Solar Trade Association (STA) has worked to promote the benefits of solar energy and to make its adoption easy and profitable for domestic and commercial users.

A not-for-profit association, we are funded entirely by our membership, which includes installers, manufacturers, distributors, large scale developers, investors and law firms.

Our mission is to empower the UK solar transformation. We are paving the way for solar to deliver the maximum possible share of UK energy by 2030 by enabling a bigger and better solar industry. We represent both solar heat and power, and have a proven track record of winning breakthroughs for solar PV and solar thermal.

Respondent details

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Would you like this response to remain confidential?	No

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The STA welcomes the chance to feed into the Committee on Climate Change's (CCC) Call for Evidence; we see this publication as an important opportunity for engagement on the CCC's forthcoming advice to the UK Government and Devolved Administrations on long-term targets for greenhouse gas emissions and the UK's transition to a net-zero carbon economy. Our response will focus on other areas of evidence that the CCC could cover as part of the Committee's work plan, the UK's targets (including whether they should be tightened and how they can be achieved) as well an overview of the potential associated costs and benefits.

Evidence

Internationally recognised publications such as the IPCC Special Report on 1.5°C are vital to provide evidential certainty and apply pressure on environmental policy issues to government officials and policymakers, with scopes that extend beyond the remit of a leaders country or time in office. Despite these publications, UK regulation and policy often overlook the value of renewable energy from assets such as solar PV as well as the importance of cities progression towards 'smart', which is facilitated by: increasing electrification (particularly of transport and in future heat), renewable generation, smart-services, IOT and automation. The increasing incorporation of both of these into UK policy and regulation is imperative for the achievement of the legally-binding carbon reduction targets, and even more so if these are to be tightened.

Consultations published by BEIS (such as the Future of Small-Scale Low-Carbon Generation: a call for evidence) and Ofgem (such as the Targeted Charging Review: minded to position and draft impact assessment) are indicative that a holistic understanding of the benefits as well as the costs that renewable energy can bring are lacking. One reason this has occurred is due to the lack of evidence considered by Government and Ofgem in this area. The Value of Solar methodology aimed at providing a uniform approach in establishing the value of electricity produced by solar PV is being adopted by an increasing number of countries - a similar assessment by the Regulator (as required by BEIS) would aid this evidence-gap.

In addition to reports such as the IPCC and National Infrastructure Commission we strongly recommend that the exemplary work of the many proactive academics, green entrepreneurs and non-profit organisations engaged in this policy debate be taken into account in decision-makers processes. For instance, earlier this year Ovo Energy and Imperial College London published 'A Blueprint for a Post-Carbon Society' revealing household energy flexibility could reduce the cost of decarbonisation by £6.9 billion per year. UKGBC have also launched a new programme 'Advancing Net Zero' focusing on the build environment that aims to provide an industry-led definition for Net Zero Carbon Buildings. These reports published by companies intimately involved in the intricacies of these issues and how they can be advanced need to be considered by Government and Ofgem.

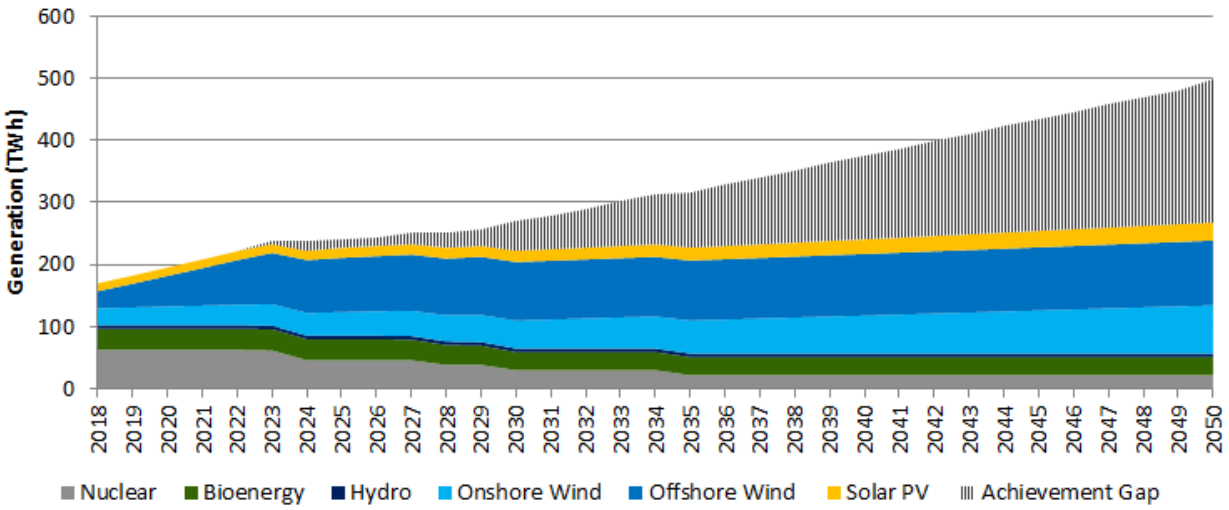
The UK's Targets

The UK has demonstrated ambition with regards to decarbonisation, particularly with regards to grid decarbonisation in which the UK is world-leading[1]. The progress achieved so far is the result of successful policy and international cooperation; however, to achieve further improvement towards "Net Zero" significantly more ambitious targets and tighter regulation will be required. This transition must be all-encompassing in its approach. Large-scale renewable deployment must be facilitated alongside policy and regulation incorporating smart technology and flexibility at utility-scale down to domestic premises. The STA would welcome renewed, ambitious targets that hold the Government to account. This should be combined with a detailed roadmap describing sector-specific policy measures for achieving these targets.

Despite the success so far, with specific consideration for the reduction in carbon intensity of the grid, the Government's legally binding 2030 GHG emissions reduction target require that the average carbon intensity of electricity generation be reduced a further 60%, from approximately 235gCO2e/KWh to less than 100g, in just 11 years. Our own analysis suggests that on this current trajectory, accounting for the offshore wind to be deployed

[1] https://www.drax.com/wp-content/uploads/2018/12/Energy-Revolution-Global-Outlook-Report-Final-Dec-2018-COP24.pdf

through forthcoming CfD auction rounds, by 2030 there could be nearly 50TWh gap between the actual quantity of low-carbon generation and the 270TWh required to achieve our climate targets. This is even more drastic for the 2050 targets, which will require that GB power sector emissions be brought below 25gCO2e/KWh – a reduction of more than 90% below average current levels[2]. Assuming there are no new subsidies for low-carbon generation, we will fall more than 230TWh short of this target by 2050. This is equivalent to nearly 15 Hinkley Point C power stations.



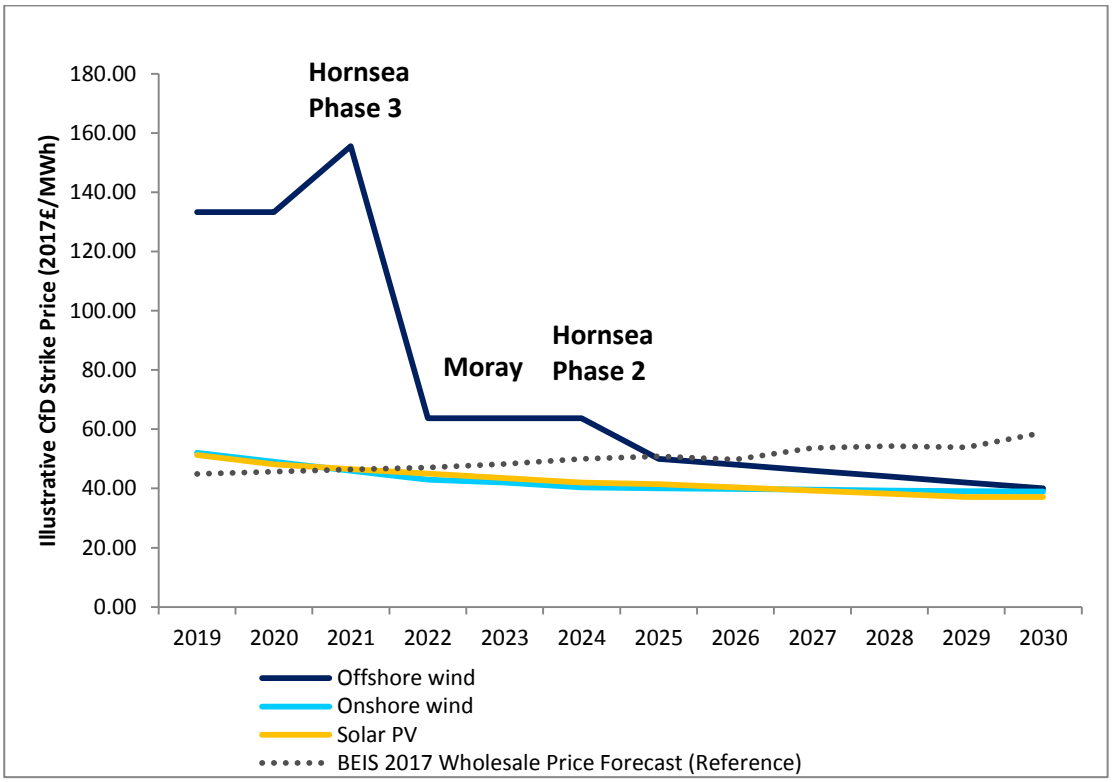
Renewed targets focusing on Net Zero are also important for the UK internationally. The report 'Energy Revolution: A Global Outlook'[3] portrays how the UK has done more to decarbonise the electricity system than any other country in the world. The report identifies this as resulting from strong carbon pricing. Climate change is politically difficult to tackle due to the issues extending beyond terms of office and countries, and as the UK's success in implementing carbon pricing demonstrates, leadership in setting and achieving targets must be a priority for our Government. The report also demonstrates that continued participation in international environmental schemes such as the EU ETS will be integral both for the ongoing decarbonisation of the UK and in terms of encouraging the participation of other jurisdictions. However, the UK is let down in other areas such as being 'among the worst performers in supporting the fossil fuel industry through direct budgetary transfers and tax expenditures'. This comes at a time when, in response to the IPCC special report, ten EU member states have called on the European Commission to 'set a clear direction' and clarity in their plans towards reaching net zero greenhouse gas emissions by 2050[4]. If the UK is to not fall behind internationally at a minimum keeping pace with the plans of the EU is required.

Achieving Targets

Sector-specific policies will become increasingly important in achieving targets. For instance, the built environment makes up a significant proportion of emissions in the UK as recognised by the Industrial Strategy. The Grand Mission consequently is to halve new building energy use by 2030. Whilst innovation funding pledged to facilitate this is welcomed (£170 million of public money through the Transforming Construction Industrial Strategy Challenge Fund) without tightened regulation this mission will not be achieved regardless of new innovation. Preliminary analysis by STA members has indicated that this Grand Mission (due to its encompassing of energy use by appliances) cannot be achieved without the incorporation of some element of renewable onsite generation on buildings. Contrastingly, the Mission can be achieved without the development of fundamental new technological approaches. However, onsite generation on new builds is currently not prioritised in Building Regulations and any inclusion currently (such as in from devolved administrations in Scotland, which has far more housing tenders including onsite generation) is at risk with the publication of the new SAP methodology and Building Regulation Review. The Government should consider

[2] Aurora Energy Research: "Delivering 'net zero': Will the wholesale market cease to function in a high renewables world?" - November 2018
[3] https://www.drax.com/wp-content/uploads/2018/12/Energy-Revolution-Global-Outlook-Report-Final-Dec-2018-COP24.pdf
[4] https://www.businessgreen.com/bg/news/3066668/eu-must-set-clear-direction-for-2050-net-zero-target-urge-10-member-states

evidence such as this in the building regulations review due in spring 2019 to provide sectoral focused facilitation of the pledges they have made as well as the targets they are bound to.



Above: Our analysis suggests that solar and onshore wind is already significantly more affordable than offshore wind, and their levelised costs are projected to decrease further. The inclusion of these technologies in future CfD auction rounds could deliver faster decarbonisation and significant savings for consumers

At present, discriminatory policies hinder renewable deployment in the UK. The exclusion of solar from CfDs when it is one of the cheapest forms of electricity, alongside the inclusion of solar and storage in Business Rates when onsite CHP is excepted exemplifies some of the policies actively preventing the renewable market from facilitating the achievement of environmental targets. The removal of these is of paramount importance. We note that CCS has recently been incorporated further into UK policy, with the Government pledging to undergo trials of the technology. CCS may well have an important role to play in achieving Net Zero, however, the progress in this area being detached from renewable energy policies is short-sighted and demonstrates the disconnected framework the Government is implementing at a time when holistic consideration is required.

The role devolved powers and local government have in driving progress towards achieving our targets is fundamental and the STA is encouraged to see increasing appreciation of this. With regards to renewable deployment, investment has been significantly dampened by an unpredictable policy framework as well as a lack of trust in the Government and its national policy implementations. However, already in place in Scotland are more ambitious environmental targets as well as tighter building regulations leading to the large majority (up to 80%) of tenders for new build housing having solar PV incorporated to aid achieving these targets. Scotland also has employed progressive policies such as a zero-interest loan for solar and storage that when requested is coupled with an assessment of the home and provision of energy efficiency advice. Progressive policies such as these could be expanded to England and Wales, and should be called for. Many local authorities face confusion over their legal rights to incorporate renewable energy requirements into their strategies, and we would strongly recommend measures to promote awareness of this ability to set more stringent standards. The STA's Leading Lights report provides exemplary case studies of the leadership of local authorities nationwide in demonstrating the importance of residential and commercial installations as well as large-scale utility generation. Local authorities' powers in this area must be protected and promoted.

Achieving targets can also be aided by behavioural change. Significant behavioural changes have already been witnessed with regards to onsite generation ownership. This indicates that sectors previously identified as difficult to reduce emissions in can also be encouraged to progress through behavioural change and 'nudge' policies. In terms of the current situation for the domestic solar market, the end of the FITs marks the end of the supportive policy framework for this sector. The STA has forecasted less deployment than the Impact Assessment provided by BEIS. The retention of a fair payment guaranteeing homes a route to market has the potential of changing behaviour towards investment in solar.

Costs, benefits and innovation

Investment in low carbon technologies have already driven significant cost reductions, with solar being one of the most pertinent. STA modelling which will be published in full shortly indicates that with future forecasted deployment even further reductions are likely. For larger scale PV (of which utility scale ground mount PV constitutes just over half of the total PV capacity installed in the UK) there will be continued decrease in module prices as well as more modest decreases to other CAPEX components. For full analysis please request the report due to be published 11/12/2018. Residential rooftop systems have also experienced significant cost reductions. Average sized systems can be purchased for around £5,000 in 2018 compared to 2008 installations costing ~£18,000 based on previous cost analysis by the STA. This by far exceeded expectations and could be replicated in the domestic storage market also. We refer to the reports in the evidence section to highlight some of the benefits the transition to a smart, flexible renewable energy system can bring as well as the global catastrophic environmental costs highlighted consistently by specialised experts in this area.

In terms of benefits, the investment that renewable deployment has brought to the UK is significant. The maturing of the solar market has undoubtedly led to innovation with the skills and supply chain facilitating the growth in storage and smart energy innovations. Prohibitive policies have already been highlighted as preventing deployment; needless to say this extends to dampening the possible benefits of cost reductions, investment, economic growth as well as innovation. For a deeper analysis onto the impacts on investment and the supply chain please see the response to our Future of Small-Scale Low-Carbon call for evidence and consultation on the end of the Feed in Tariff.

If there are further queries relating to this feedback, please email consultations@solar-trade.org.uk.