LIGHTSOURCE

Institution of Civil Engineers
1 Great George Street
Westminster
London
SW1P 3AA

25 February 2016

National Needs Assessment – Response to call for evidence

Lightsource Renewable Energy Holdings Limited is Europe's largest developer and operator of solar photovoltaic projects (PV). We have prepared a response to the ICE's call for evidence to support its National Needs Assessment, as it relates to renewable energy and the associated necessary infrastructure to facilitate the generation and utilisation of solar energy.

Attachment 1 to this letter is our brief response to the key questions raised by the call for evidence. Attachment 2 is a report titled 'The Decentralised Energy Transition' (October 2015). This report, which is co-authored by Lightsource, Good Energy and Foresight Group and coordinated by KPMG, was prepared last year in response to Government consultation on the changes to the Feed-in-Tariff Scheme and the closure of the Renewables Obligations Scheme to solar PV. It provides further detail regarding the responses set out in Attachment 1.

We thank you for the opportunity to respond to the call for evidence. Please contact us if you have any further queries or would like further information about our response.

Yours faithfully

Lightsource Renewable Energy Holdings Limited

LIGHTSOURCE

Attachment 1 – Responses

1. Do you agree with our proposed vision and outcomes? What amendments would you propose?

The visions set out aims for national decision-making in relation to planning for infrastructure delivery while having regard to regional and local planning. Currently large infrastructure projects are likely to be required to be submitted through the Nationally Significant Infrastructure Projects (**NSIP**) process which ensures developers work cooperatively with communities and Local Planning Authorities to shape projects from an earlier stage. Projects through the NSIP process are decided by the Secretary of State based on recommendations from the Planning Inspectorate.

However, for energy projects this is only applicable for those over 50MW in capacity, while projects smaller than this are decided by local decision makers. Local decisions will therefore likely include most decentralised energy applications, and it is considered that more advice and direction should be given to local authorities to ensure the deployment of localised energy infrastructure.

2. What will be the main constraints on the UK's ability to provide sufficient UK national economic infrastructure assets and services over the period and what solutions or mitigations of those constraints should the UK adopt?

There is significant uncertainty about the path of global commodity prices (oil, gas and coal) in the future. Demand on energy from renewable sources, and accordingly the associated infrastructure, will continue to increase. As noted above, the NSIP process is currently only available for energy projects over 50MW in capacity, with Local Planning Authorities determining smaller, decentralised supply and storage projects.

Planning and regulatory schemes play an important part in the progression of these types of applications. Increased planning policy support towards renewable energy projects (in particular solar, which is not given specific attention in the NPPF) and a streamlining of the application process to enable faster implementation at higher volumes need to be considered.

In 2010 the Coalition Government abolished Regional Strategies. At the time the Chair of the all-party Commons Committee for Communities and Local Government stated that the abolition of the strategies will give "rise to an inertia that is likely to hinder development – making it much harder to deliver necessary but controversial or emotive 'larger than local' facilities". No regional planning has been reintroduced since this time, making it harder for large infrastructure, which can often encompass several planning authorities, to be proposed and approved. A new system of regional planning could be re-established including provisions for cross boundary infrastructure and localised energy production to meet the UK's renewable energy ambitions.

3. What nationally significant investments in capacity or changes in policy & regulation should we prioritise to deliver these outcomes and deal with these drivers of demand?

Approximately 10GW of solar energy has been deployed in the UK between 2011 and the end of 2015, mainly concentrated on residential rooftops and ground-mounted schemes. However, recent policy support changes by the UK government have had an impact upon the speed at which the UK solar industry has been so successful.

A report co-authored by Lightsource, Good Energy and Foresight Group published in October 2015 titled 'The Decentralised Energy Transition' **(Report)** sets out how solar and battery technologies can dramatically change how energy is produced and consumed over the next decade. The report states that the decentralised vision can be delivered without long-term subsidies within 5 years through a number of facilitating steps including:

- front-loading the remaining spend under Feed-in Tariffs Scheme to the next few years and focussing that spend on the technologies that have the greatest potential to support this 'smarter' energy system;
- kick-starting the deployment of storage technologies in residential properties;
- recognising the value that storage brings to the electricity system as a whole and removing the market and regulatory barriers that prevent this; and
- incentivising grid companies to support the deployment of decentralised energy.

LIGHTSOURCE

4. What new and emerging technologies and disruptive trends should we consider in producing this assessment?

Commercial deployment of energy storage is widely regarded to be a 'game changer' for the electricity system over the coming decade. Citigroup estimates that there will be up to 240GW of energy storage in the global market by 2030 (refer page 6 of the Report).

Energy storage can take a number of different forms, including:

- power-to-heat systems, such as hot water boilers or heat pumps;
- stationary battery storage; and
- controlled charging of electric vehicles (**EVs**) and plug-in hybrids.

Energy storage enables the 'de-coupling' of onsite generation from consumption, allowing consumers to store excess onsite generation at times of low demand and use or export that energy when it is most economically advantageous to do so. Storage can also help reduce peaks on the electricity grid and local voltage fluctuations. Similarly, as EVs are effectively a form of storage, a high penetration of EVs into the market could affect the daily power curve.

Based on the Government's Renewable Obligations banding review, the Solar Trade Association (**STA**) has stated that a subsidy of £34/MWh is what the government currently estimates as necessary for solar projects to be commercially viable. The STA anticipates that with a supportive framework, solar will be able to compete without subsidy within 5 to 10 years. Subsidy-free solar farms will first be able to compete against retail energy – through providing electricity directly to large energy users (such as factories or other businesses), helping remove the costs and challenges associated with connecting solar farms to the UK grid network.

By focusing on localised energy, first to large businesses and then directly to other consumers, such as residential properties, solar will be able to deploy without subsidy, while increasing the UK's renewable energy supply, decreasing carbon emissions associated with energy supply and decreasing reliance on energy imports from other countries outside of the UK and Europe. Solar power, in the form of large-scale ground mounted solar farms and roof-mounted PV, can provide a low-carbon

alternative to centralised energy in the UK. Coupled together with upgrades to the grid (smart grid) and with capacity storage, such as batteries, it can provide effective demand management.

5. How can we improve public engagement in infrastructure decision-making?

The DECC Public Attitude Tracker focuses upon public attitudes towards different types of energy generation in the UK, including conventional and alternative sources. The most recent DECC Public Attitude Tracker (Wave 16 – Feb 2016) found that 78% of people supported the use of renewable, with only 4% opposed to renewables. This survey also found that 63% are concerned that the UK is not investing fast enough in alternative sources of energy and 66% are concerned the UK is too dependent on energy from other countries.

Solar has the highest support rate out of all the alternative energy sources, with 80% of respondents supporting the use of solar, with only 6% opposing. In comparison, only 36% of people support the use of nuclear energy in the UK, while 21% of people oppose it – with the rest being neither supportive nor opposing. Shale gas extraction (by way of fracking) has even less support (23%) and more opposition (29%) than nuclear.

This data should help to influence the types of energy projects which are supported through this process.

Effective community engagement is a requirement for NSIP proposals, and should be an integral part of the process for any large infrastructure project that will have an impact (beneficial or detrimental) to the local and wider community. Involving local residents and other key stakeholders early in the process, via positive engagement, helps to inform communities, identify potential issues and solutions, and allow for feedback to influence project development.

LIGHTSOURCE

Attachment 2 - The Decentralised Energy Transition (October 2015)