Written evidence submitted by Community Energy England (IND0007)

Introduction to Community Energy England

Community Energy England (CEE) represents over 320 community energy and associated organisations across England involved in the delivery of community-based energy projects that range from the generation of renewable electricity and heat, to the energy efficiency retrofit of buildings, to helping households combat fuel poverty.

Our vision is of strong, well informed and capable communities, able to take advantage of their renewable energy resources and address their energy issues in a way that builds a more localised, democratic and sustainable energy system.

Community energy refers to the delivery of community led renewable energy, energy demand reduction and energy supply projects, whether wholly owned and/or controlled by communities or through partnership with commercial or public sector partners.

The overwhelming motivation of people and groups involved in community energy is to make a contribution to averting climate catastrophe, followed by a desire to bring community and social benefit. It is a values based movement very much focused on cooperating to get things done.

We believe that these motivations should be shared by all working in the energy sector and on energy system transformation.

Over recent years Community Energy England, has become aware that there are concerns regarding the solar PV supply chain from both a human rights perspective and with regard to the embodied carbon in solar manufacture. In 2022 we formed an Ethical Sourcing Working Group with expert and concerned members. Input from this group has informed this response. Jon Halle of Big Solar Coop has recently presented to DESNZ civil servants supporting the Solar Taskforce (chaired by the Secretary of State) on ethical supply chain issues for solar energy. He would be happy to do the same for the committee. See his concise blogs focussing on carbon and human rights in the solar supply chain.

How can UK plc capture its fair share of the economic potential of the energy transition?

- How can UK plc capture its fair share of the economic potential of emerging or less developed energy technologies?
- What more can the Government do to encourage greater domestic supply chain investment in the energy industry by 2035, including through the Contracts for Difference scheme?

- Does the UK have the supply chain capacity to deliver the required energy infrastructure by 2035, including an expanded electricity network?
- To what extent would growing the domestic supply chain bolster UK energy security?

Significantly. If China in particular holds a virtual monopoly over affordable renewable energy (particularly solar) componentry this presents a risk. Lead times are already long for many components such as inverters. If China decided to stop supporting its technology with spares for instance it could have a real impact on our ability to sustain the transition to zero carbon.

- What are the key concerns with respect to the availability of raw materials in the supply chain and how might those be addressed?

Ethical and slavery free sourcing of raw materials for the net zero transition, especially solar panels and other equipment.

Over recent years Community Energy England has become aware that there are concerns regarding the solar PV supply chain from both a human rights perspective and with regard to the embodied carbon in solar manufacture.

There are documented claims that many of the solar modules available in the UK market may contain raw materials from regions where there is evidence of forced labour in the solar supply chain.

Embodied carbon in solar manufacture is a parallel issue. Although it appears that even solar modules with high embodied carbon generate electricity which lowers the carbon intensity of the UK grid considerably, the decarbonisation impact of our solar projects can be very significantly improved if we are able to specify solar modules with lower embodied carbon. Chinese panels made with polysilicon created using coal can have up to 500% more embodied carbon than the cleanest European panels. Additionally there are issues of charcoal use, created from dirty unsustainable sources.

Unfortunately at this time there is very little information available which would enable community energy organisations or anyone to make informed decisions about the sourcing of their solar modules and other equipment. Very few, if any, of the solar modules available in the UK come with robust independent supply-chain and carbon audits. Our members are currently obliged to attempt to make ethical sourcing decisions on the basis of press reports, company statements and circumstantial evidence.

We believe that the practice of forced labour is utterly unacceptable and that it is of equal importance that the technologies we use are those which reduce carbon emissions the most.

Initiatives such as the Solar Stewardship Initiative seem to be moving slowly if at all. There is functionally no transparency at all in the solar supply chain. Raw polysilicon from Xinjiang is difficult

to differential from lower carbon polysilicon from Chinese province less or not implicated in forced labour. It may even be deliberately moved around so that traceability is muddled.

The best research has been done by Sheffield Hallam university - essential reading in the view of CEE's Ethical Sourcing Working Group.

- The Sheffield-Hallam study 'In Broad Daylight: Uyghur Forced Labour and Global Solar Supply Chains' https://www.shu.ac.uk/helena-kennedy-centre-international-justice/research-and-projects/all-projects/in-broad-daylight
- And their follow up in Sept 2023 'Over-Exposed' https://www.shu.ac.uk/helena-kennedy-centre-international-justice/research-and-projects/all-projects/over-exposed
- Action for Sustainability has produced a report (more generic than the above but still well founded) in Sept 2023

One of the leading researchers in the field (co-author of the Over-Exposed report, Alan Crawford, said, "the best way to avoid all of these Chinese-problems is a China-free solar supply chain from quartz to modules. Easier said than done!"

There used to be panels made by Mayer Burger in Germany, made with Norwegian polysilicon made using hydroelectric power. Mayer Burger seems to be exiting the market in Europe in favour of the US where the IRA has banned Chinese imports of solar panels stimulating a slavery free domestic intergrated supply chain. None of this material is being exported as the demand is high in the US.

We have heard of a German entrepreneur who was attempting to get the 10s of billions of dollars necessary to create an integrated supply chain in Europe. Since the dumping of Chinese panels in Europe this may have become financially difficult.

We would argue that it is a project that is a long term investment worth making to ensure European energy security.

The UK can't compete on polysilicon where other countries have very cheap electricity but there could be a role for a domestic supply chain that does not use polysilicon, analogous to First Solar in the US, possibly based on Power Roll or Oxford PV tech.

Conceivably there is a market for ethical solar that could be met by UK production using technology that is less energy intensive such as thin film (Power Roll) or ultimately perovskite (Oxford PV - currently used only to increase polysilicon efficiency). It should be noted that currently the panels are less efficient at 11-20%. But they are also cheaper and often lighter so for extensive usage such warehouse roofs they may be a cost effective solution.

Community energy projects such as Big Solar Coop are currently installing Mayer Burger panels (the ones with the best traceability but still not guaranteed free from slavery implicated Chinese polysilicon.) It is a fundamental principle line in their business model to use the most ethical panels possible. Despite the extra cost there is a significant demand for it. The panels are often better quality, too.

Jon Halle of Big Solar coop has written 2 concise blogs focussing on carbon and human rights in the solar supply chain.

The UK does have at least some leadership in solar R&D if not in commercialisation. Wind and heat are more obvious matches for new home-grown renewables technology. The other area would probably be software - renewables design and monitoring apps are still generally quite bad.

Further information

Community Energy England (CEE) was established in 2014 to provide a voice for the community energy sector, primarily in England. Membership totals over 320 organisations. The majority of the members are community energy organisations, but membership extends across a wide range of organisations that work with and support the community energy sector.
www.communityenergyengland.org

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