Statement of the Ultra Low Carbon Solar Alliance regarding

House Energy and Commerce Committee

Subcommittee on the Environment and Climate Change

Hearing on H.R. 1512 The CLEAN Future Act: Industrial Climate Policies to Create Jobs and Support Working Communities

March 18, 2021

Thank you for the opportunity to provide this statement on behalf of the Ultra Low Carbon Solar Alliance, comprised of companies from across the global solar supply chain who have decarbonized their manufacturing operations to improve the carbon performance of solar energy.

As the Committee considers the CLEAN Future Act we want to bring an emerging issue in solar energy to your attention. Solar photovoltaics are an important source of low carbon energy as we increasingly electrify our economy. It is in fact the fastest growing source of power generation globally. All solar provides low carbon power generation. But not all solar is created equal. Carbon emissions in some parts of the global solar panel supply chain can be significant.

China has come to dominate solar manufacturing, and much of their manufacturing is reliant on coal-fired electricity. This is especially true for the most energy-intensive part of solar manufacturing, making polysilicon, the photovoltaic material that allows solar panels to convert sunlight to energy. Producing the ultra-pure polysilicon required for solar panels is an energy-intensive proposition, and China has funneled state subsidies into creating explosive growth in polysilicon production in the coal- rich western province of Xinjiang, which now produces almost one-half of the world's polysilicon supply. That manufacturing is based almost entirely on coal-fired power. Polysilicon production in the US and EU, on the other hand, is powered by decarbonized grids, generally with high levels of renewable energy.

As a result, solar panels produced from the Chinese supply chain have roughly twice the supply chain carbon emissions, or embodied carbon, as solar panels from the cleaner US and EU supply chains. Because of China's outsized role in solar manufacturing, well over half of the solar panels used in US energy projects, be they utility scale or single home rooftops, consist of these high carbon Chinese panels. Using these solar panels with high levels of embodied carbon reduces the benefits of switching to solar, and of electrifying our transportation and building sectors. It ironically means that US efforts to expand the use of solar energy are unintentionally supporting coal-fired power in China.

Fortunately, there is sufficient manufacturing capacity for polysilicon, the primary source of embodied carbon in solar panels, in the US and EU to provide both of those markets with low embodied carbon solar panels. The US also produces low carbon thin film solar panels.

This means that governments and the private sector have a clear choice: to support carbon-intensive Chinese manufacturing with their solar purchasing, whether projects or power purchase agreements, or to support decarbonized US and EU solar manufacturing in how they purchase or incentivize solar power.

That choice is sharpened by the extensive reporting of the use of forced labor of Uighurs, Kazakhs, and other Muslim ethnic minorities in the Chinese solar industry in Xinjiang, a practice that both the Trump and Biden Administrations have decried.

By deploying low embodied carbon solar we can not only avoid significant solar supply chain carbon emissions and other unsustainable practices; we can significantly expand clean energy jobs and manufacturing in the United States. A policy and market preference for solar panels from a decarbonized supply chain would expand demand for US-made polysilicon and solar panels. This would help US solar manufacturers grow and expand here, producing additional manufacturing jobs and enhancing the resilience of the solar supply chain by reducing today's very high reliance on Chinese production. It would also change the calculus for investing in solar manufacturing in the US and potentially see important parts of the solar supply chain like solar wafer and cell production return to the US. Using data from the National Renewable Energy Laboratory and the National Association of Manufacturers we have estimated that expanding the US solar supply chain sufficiently to produce all of the low carbon solar panels deployed in the US would add 150,000 manufacturing and related jobs. The EU has estimated creating 400,000 jobs in expanding their solar supply chain. The result would be a US solar supply chain with expanded employment and greater resilience and security.

Such preferences for Ultra Low Carbon Solar have already been successfully implemented. France has for some years had a program that preferentially purchases solar panels with low levels of embodied carbon, and American and European manufacturers have competed well in that market. South Korea has implemented a similar program. The EU has just launched a new initiative to support expansion of manufacturing across the solar supply chain to provide low embodied carbon solar panels for their market and for export.

Whether it is in a Buy Clean Program, federal purchasing, infrastructure and resilience grants, or incentives for solar energy, the Congress should ensure these programs support clean, sustainable solar manufacturing by specifying the use of low embodied carbon solar. The technical elements of determining embodied supply chain carbon emissions in solar panels have been well established such as

through the Environmental Product Declaration for solar photovoltaics, providing the tools to support such a preference.

The Committee should ensure that US policy supports clean and sustainable solar manufacturing.

We appreciate the opportunity to provide our thoughts on this important topic and look forward to working with the Committee to make better solar power a reality.