Testimony of Abigail Ross Hopper, Esquire
President and CEO
Solar Energy Industries Association

U.S. House of Representatives Select Committee on the Climate Crisis
Manufacturing a Clean Energy Future: Climate Solutions Made in America
February 2, 2022

Chair Castor, Ranking Member Graves, and members of the Select Committee, thank you for inviting me here today and for your commitment to the U.S. solar and storage industry and American solar manufacturing. I am Abigail Ross Hopper, President and CEO of the Solar Energy Industries Association (SEIA).

SEIA is the national trade group for America's competitive solar energy and storage industry with 1,000 private sector businesses that compete every day to keep prices for American consumers low while also meeting the demands for clean renewable energy. Approximately 230,000 Americans work in this $25 billion industry.

The U.S. solar and storage industries are comprised of construction, manufacturing, and technological innovation. The solar industry today, representing more than 3% of our nation's electricity production, reduces carbon emissions by 127 million metric tons per year. Two and a half years ago, when I last testified before you, we had just hit 2 million U.S. solar installations. Today, we are well on our way to 4 million installations. The amount of solar currently in operation is the equivalent of taking 28 million vehicles off the road or planting 1.8 billion trees.

But lowering carbon emissions is not the only reason to accelerate solar deployment. As the industry grows, the solar and storage industries will need to hire 800,000 new workers to reach a total workforce of more than 1 million Americans. Along the way, the industry would invest more than $820 billion into the U.S. economy.

Despite solar's expansion, we must grow at a rate four times faster than we are growing today to make the kind of progress necessary to address the climate crisis. Through this growth, we have a once-in-a-generation opportunity to create a renaissance in domestic manufacturing.

Simply put, this is a transformative opportunity for the U.S. economy. As part of the energy transition, the United States can invest in domestic manufacturing on a massive scale. That means empowering entrepreneurs, strengthening the private sector, creating well-paying jobs and fostering business stability through a combination of policy drivers.

As first articulated in SEIA's September 2019 Manufacturing White Paper, which is included as a link at the end of this testimony, our country needs a new approach to growing U.S. solar manufacturing, focused on a suite of long-term federal investments. These include:

- One, demand drivers such as a long-term extension of the solar investment tax credit with direct pay and related bonus credits for meeting certain domestic content thresholds;
- Two, ongoing domestic production support as our manufacturers and their suppliers scale operations in a hyper-competitive global environment; and

- Three, incentives for private sector investments in manufacturing capacity such as a refundable 48C manufacturing tax credit.

Importantly, all three categories of federal investments are required if we hope to truly compete as a nation in solar manufacturing. Fortunately, all three of these policies are included in the Build Back Better package. We need to recognize that the United States is competing for private sector investments not only against China but other countries as well. These three policy levers are critical to build out durable and globally competitive domestic manufacturing supply chains.

Harnessing the Power of Domestic Manufacturing

Three years ago, SEIA strategically engaged with manufacturers across our industry to understand the elements required to build domestic manufacturing capacity for the solar and storage industries. The U.S. is rich in the natural resources necessary for the solar supply chain. We have quartz, metallurgical grade silicon, and polysilicon producers in places like Alabama, Mississippi, Michigan, Tennessee, and Washington State. We have the raw materials, innovative technology and private sector know-how we need to lead in clean energy manufacturing with the right policies in place.

Today, the U.S. has enough domestic manufacturing capacity to supply a fraction of our solar module and inverter needs. And we have little to no manufacturing of critical components like wafers and cells. For example, the U.S. currently has 7 gigawatts (GW) of module manufacturing capacity. In 2020, the U.S. installed 20 GW of solar, and we will need to install 90 GW per year to hit our climate goals.

Despite current capacity limitations, with the right policies in place, we can create tens of thousands more jobs in domestic solar manufacturing and attract billions of dollars in private investment. As we grow our domestic solar manufacturing base here at home, we must recognize that it will take time to scale operations.

The good news is that we can do this. The 30,000-person solar manufacturing workforce in the United States currently includes steel plants in places like South Carolina, Pennsylvania, and West Virginia. It includes trackers and racking manufacturers in Arizona, Ohio, New Mexico, and California. And it includes manufacturers of solar panels and inverters in Georgia, Washington State, Florida, Ohio, Texas, Illinois, Wisconsin, and beyond. These companies, along with others, are ready to scale up and get to work.

Tax Credits for Solar and Storage

Clean energy tax credits for solar and storage are necessary to give manufacturers confidence that there will be domestic demand for their products. Previous short-term efforts, combined with the fact that solar manufacturing was in its infancy, weren't sufficient to sustain domestic manufacturing. But that is not the case today. The 10-year extensions included in Build Back Better would create a reasonable runway and continued growth of the solar and storage industries, supporting the manufacturing buildout the country needs.

Domestic Production Support

We forecast that with key policies in place, such as the Solar Energy Manufacturing for America Act (SEMAA) as drafted in Build Back Better, manufacturers will create 27,000 direct manufacturing jobs in the solar module value chain by 2025 and 40,000 jobs by 2030. SEIA has announced a goal of 50GW of domestic solar manufacturing capacity by 2030, including 50GW of polysilicon, wafer, cell, module,

inverter, tracker, and energy storage production capacity independently. This aggressive target would create American solar manufacturing capacity equal to over 250% of the total 19.2 gigawatts of solar deployed in 2020.

Expanded and Refundable 48c

An expanded and refundable 48c manufacturing tax credit would provide support for capital expenditures and, as currently drafted in Build Back Better, helps to encourage investments in communities that are impacted by the energy transition. Our country has a long and proud history of domestic manufacturing, and much of that infrastructure is still in place across the country. Reinvesting in these communities can help bring jobs and economic growth to places where it is needed most.

Removing Roadblocks to Deployment

In addition to the tax policies included in Build Back Better to support domestic manufacturing, additional policies can remove roadblocks to growth in the U.S. clean energy manufacturing sector. Other federal and state policies such as streamlining interconnection policies and making strong and smart investments in grid infrastructure are critical.

State policies that limit solar deployment, including policies that limit the value proposition for distributed generation solar, must be defeated. We are currently seeing harmful proposals in various states to limit the ability of consumers to exercise their freedom to choose distributed solar and provide energy certainty and resilience for their families. These policies move domestic demand for solar goods in the opposite direction we need to be moving to ensure a strong market for domestic manufacturing and American dominance in the clean energy manufacturing space.

One ray of light is that the U.S. Department of Energy and the National Renewable Energy Laboratory are pilot testing an expedited permitting program called SolarAPP+. This program is reducing permitting times in municipal permitting departments from up to several weeks to a matter of hours. SolarAPP+ can expedite solar installations and reduce costs for local agencies and installers alike and we are urging municipalities and installers alike to adopt the program.

Workforce Development

As the country continues to build out its clean energy workforce, working to creatively recruit, train, and retain the men and women who will build the future energy economy must be a top priority. Solar alone will create upwards of 800,000 new careers within the next ten years. SEIA is working with our member companies and building relationships with workforce training organizations, including unions, to strategically develop a diverse workforce for the clean energy economy. Our country must continue to invest in this area, beginning in early grades, to help engage the next generation of clean energy workers.

Trade and Forced Labor Prevention

Due to many of our country's existing strengths, much of the domestic solar manufacturing supply chain can be rapidly scaled. For example, we have shuttered or minimally producing polysilicon plants that are ready to be restarted. However, as we grow our domestic solar manufacturing base here at home, we must recognize that it will take time to scale operations and reduce our reliance on imports.

We also have an obligation to ensure that, where imports play a role, the solar supply chain is ethical and free of forced labor. For example, in response to forced labor concerns in the Xinjiang region of China, SEIA began calling upon solar companies in October 2020 to move their supply chains entirely out of that region. On December 10, 2020, and in support of the United Nations' Human Rights Day, SEIA announced a *Solar Industry Forced Labor Prevention Pledge*, which has been signed by over 300 companies representing the vast majority of solar panels sold and consumed in the United States.

SEIAs partnered with two leading solar audit firms to develop a *Traceability Protocol,* which includes an independent third-party audit mechanism. The protocol is designed to provide assurances to the U.S. government and purchasers that solar panels imported into the United States do not include inputs connected to forced labor.

Solar companies around the globe have adopted these traceability protocols and we are aware of more than a dozen ongoing audits to assess conformance with these measures. SEIA's next step is turning the *Traceability Protocol* into an official industry standard, and we are working closely with U.S. Customs and Border Protection to ensure the nation's forced labor laws are enforced. A link to the Traceability Protocol is at the bottom of this testimony.

SEIA and its members are committed to continuing to build a robust American solar supply chain and to adding tens of thousands of American jobs to tackle the climate crisis. We look forward to working with you and your staff to grow domestic solar manufacturing while ensuring an ethical supply chain.

Please see additional SEIA references for Solar Supply Chain Traceability Protocol
https://www.seia.org/research-resources/solar-supply-chain-traceability-protocol

SEIA and The Solar+ Decade & American Renewable Energy Manufacturing
https://www.seia.org/research-resources/solar-decade-american-renewable-energy-manufacturing