Testimony of

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Chairman Lowenthal, Ranking Member Gosar, and members of the subcommittee, thank you for the invitation to be here today. My name is Dan Shugar and I am the founder and CEO of Nextracker, the largest manufacturer of structures and control systems for the solar power industry. We have 30% global market share and about half of the U.S. utility-scale solar market. I would like to thank the Subcommittee for the opportunity to address issues of interest for Natural Resources, such as increasing renewable power; and the solar industry's role in limiting the detrimental effects of fossil fuel extraction and combustion inflict on our National Parks, wilderness, and fisheries. This will enable clean air, water, and outdoor recreation can be enjoyed by the public. In addition to my capacity at Nextracker I am honored to serve on the board of the Solar Energy Industries Association (SEIA), and my background as a professional electrical engineer includes 34 years of utility power operations, renewable energy, and building several successful solar companies.

Over the last 4 years, the U.S. solar fleet has grown from 30 gigawatts to 83 gigawatts, a 270% increase in generating capacity.[i] We have increased jobs over this period from 200,000 in 2015 to 250,000 last year,[ii] over 3 times more total jobs than coal.[iii] There are hundreds of solar projects under construction and Texas is the largest current domestic market. What's new in solar in recent years is how staggeringly low the costs of solar power have become; the cost of solar power has fallen 38% over the last five years. As a matter of public record, recent projects are producing solar energy, including battery storage, at costs of $20/MWh to $24/MWh. This is about 1/3rd the cost of new coal power, a 1/5th the cost of new nuclear, and significantly less than the average cost of the existing operating power fleet's wholesale electricity today.[1]

And here's the opportunity: SEIA has a goal of producing 20% of national electricity from solar by 2030. This is fully achievable. In fact, the State of California today is already producing more than 15% of its electricity from solar, and Germany has produced 13% year-to-date with a fraction of our sunlight.[iv]

Achieving the SEIA industry's goal of 20% solar generation will save U.S. customers more than $10 billion in direct energy costs annually, based on recent data from United States Energy Information Administration, as well as data from the actual costs of recent solar projects.[v] It will also provide enormous benefits to preserving our natural resources and create hundreds of thousands of additional good-paying jobs across the country.

While solar has grown rapidly in the United States, those increases were driven almost entirely by technology, cost reduction, and entrepreneurs, despite numerous federal policy obstacles.

[1] Lazard, "Levelized Cost of Energy and Levelized Cost of Storage 2019." Nov. 2019. https://www.lazard.com/perspective/lcoe2019/

We have only achieved a fraction of our potential and I would like to review specific policy actions to increase solar development.

With respect to solar on public lands, I begin with heartfelt appreciation to the talented Bureau of Land Management (BLM) staff who have approved specific solar projects on federal lands. But these approvals have been in spite of BLM policies, not because of them. Unfortunately, current policy for siting and approval takes far too long – typically in excess of 3 years – and often well above market costs. As a result, today less than 10% of solar capacity in the U.S. is on federal lands, despite millions of available acres in areas with excellent solar resources. This is a very poor result compared to overseas markets. For example, last week my company Nextracker announced a large system on public land in Dubai that is part of a 5 GW solar project. By comparison, the Dubai project is six times the size of the largest solar project planned in the U.S., a project called Gemini on BLM-managed land in Nevada.

BLM is operating under a rule entitled *Competitive Processes, Terms, and Conditions for Leasing Public Lands for Solar and Wind Energy* Development ("Competitive Leasing Rule" - amending portions of 43 CFR §2800 and §2880), which are regulations implementing the *Federal Land Policy Management and Mineral Leasing* Act ("FLPMA", 43 USC §1701-1785). Unfortunately, the Competitive Leasing Rule undermines the goals for renewable deployment in all respects.

Under this rule, the total rents charged for solar projects are now up to10 times higher than fair market value, in violation of FLPMA. BLM's policies require large prepayments prior to securing complete project entitlements and onerous "megawatt capacity fees." Because solar and wind projects do not extract minerals like other energy sources, BLM should instead rent land for these projects at similar costs to grazing. The Competitive Leasing Rule also instituted a nonsensical auction process for designated Solar Energy Zones, eliminating the popular first-in-line priority application process, resulting in only one successful leasing process in 4 years.

Finally, the Competitive Leasing Rule can result in large fluctuations in rent bills for renewable energy projects, as the rental rates are adjusted every 5 years, even for operational projects. The unpredictability of this system threatens to bankrupt existing projects and pushes new solar investment onto private lands.

The Competitive Leasing Rule must be addressed, this time taking into consideration the input of leading clean energy developers. BLM should craft a policy that meets the unique economics of solar projects, complies with FLPMA, incentivizes smart solar energy development on federal lands, and generates millions of dollars in revenues to the American people. There is bipartisan support to fix the broken process at BLM and we urge action to make these sites affordable in a timely way for solar and wind development.

In addition to the Competitive Leasing Rule, the top federal policy priorities to further incentivize the growth of solar in the U.S. are as follows:

1. **Direct pay for the ITC**. The only federal support for solar is an Investment Tax Credit, or ITC. The ITC has worked very well historically and is currently 26% of the project cost. Unfortunately, the availability of tax equity has dried up due to the COVID-19 pandemic; to put it simply, companies are not paying enough taxes to use the credit. There is a simple policy solution, called Direct Pay or refundability, where an equivalent renumeration to the project owner is made in lieu of a tax credit. This follows the intent of

existing bipartisan tax policy established and renewed over the last decade. Implementing a Direct Pay provision is critically important and urgently needed to enable the solar industry to continue at scale next year, irrespective of the projects on public or private lands.

2. **ITC step down extension**. The ITC is current scheduled to step down from 26% to 22% next year and decrease further in future years. Due to the pandemic impacts and the urgency for increasing U.S. clean energy capacity, the current level of the ITC should be maintained for several years before the step down continues. This will allow the solar industry to take full advantage of the tax credit rates and build more solar energy capacity as Congress intended.

3. **Tariff reduction or removal**. Several years ago, the current administration imposed steep tariffs on solar panels and raw materials to build solar cells and has not adjusted those tariff levels after the pandemic, as occurred in other industries. As a result, the cost of solar panels today in the U.S. is roughly 50% higher than the global average. This is an outright tax on consumers of solar energy in the US. There are more effective ways to stimulate manufacturing in the U.S. than tariffs which in totality reduce solar employment and negatively impact economic development. The 201 and 301 tariffs should be curtailed or radically reduced, especially during the pandemic, when safe solar installation activities outdoors can compensate for job losses in other sectors.

4. **Reforming market rules**. In the past year, the Federal Energy Regulatory Commission imposed several highly detrimental policies to solar development. First, in a decision with the Regional Transmission Operator (RTO) PJM, which serves 65 million U.S. customers from North Carolina to Ohio, FERC's expansion of the Minimum Offer Price Rule (MOPR) essentially subsidizes obsolete coal plants, costing utility ratepayers billions in these markets, and reducing competitiveness of US businesses. Secondly, FERC subverted the ability of independently developed renewable energy plants to secure a long-term fixed price contract under the decades long successful PURPA program. The Public Utility Regulatory Policies Act has enabled independent power projects to sell power, provided it was competitive with the utility's avoided cost. The FERC action unnecessarily added uncertainty and red tape to a previously successful program, and the administration should ensure free market supporting commissioners are appointed who do not have an agenda to subsidize obsolete and polluting industries like coal.

5. **Strategic transmission investment**. On both public and private land, encouraging electric transmission between Regional Transmission Operators (RTOs) will greatly lower electricity costs and significantly increase the potential to serve customers with low-cost renewable energy. A recent study by the National Renewable Energy Laboratory determined that facilitating higher solar and wind deployment by linking the Eastern and Western grids would save Americans $2.50 for every $1.00 invested.[vi] Solar and wind are highly complementary resources, with solar available during the day and wind typically at maximum power from early afternoon through midnight.

6. **Purchase of renewable energy by the government**. The federal government is the largest consumer of energy in the country. Increasing procurement of renewable power will save the government on its utility bills and create more jobs and economic activity. The U.S. should set targets for federal agencies and facilities to procure renewable energy and enable agencies to enter into long-term power purchase agreements for these resources.

Moving forward on these pragmatic policy initiatives will:

- Enable the solar workforce to add hundreds of thousands of jobs over the coming years;
- Save U.S. customers in excess of $10 billion per year of electricity costs;
- Generate more site rental income for U.S. Treasury for renewable projects developed on federal lands;
- Improve U.S. industry competitiveness;
- Further energy independence and National Security goals; and
- Protect National Parks, wilderness, fisheries such that the clear air and water, and outdoors for recreation, that are enjoyed by current and future generations.

Thank you for the opportunity to address the subcommittee and share ways that solar energy can significantly accelerate with the right policies in place. I am happy to answer any questions that you may have.

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[i] SEIA/Wood Mackenzie Power and Renewables, *U.S. Solar Market Insight*

[ii] The Solar Foundation, *National Solar Jobs Census 2019*
https://www.thesolarfoundation.org/wp-content/uploads/2020/03/SolarJobsCensus2019.pdf

[iii] NASEO & EFI, 2020 *U.S. Energy & Employment Report*
https://static1.squarespace.com/static/5a98cf80ec4eb7c5cd928c61/t/5ee78423c6fcc20e01b83896/1592230956175/USEER+2020+0615.pdf

[iv] Fraunhofer ISE
https://www.energy-charts.de/energy_pie.htm

[v] Estimate of savings of achieving solar goal. EIA wholesale vs lazar's solar cost.

- Average wholesale electricity price as published collected by the Intercontinental Exchange and published by the Energy Information Administration for 2019 was just over $38/MWh. https://www.eia.gov/electricity/wholesale/#history
- PV Magazine, *Los Angeles seeks record setting solar power price under 2¢/kWh*
https://pv-magazine-usa.com/2019/06/28/los-angeles-seeks-record-setting-solar-power-price-under-2%C2%A2-kwh/
- U.S. utilities solar 3,749,538,000 MWh of electricity in 2019.
https://www.eia.gov/electricity/data/browser/#/topic/5?agg=0,1&geo=g&endsec=vg&linechart=ELEC.SALES.US-ALL.A~ELEC.SALES.US-RES.A~ELEC.SALES.US-COM.A~ELEC.SALES.US-IND.A&columnchart=ELEC.SALES.US-ALL.A~ELEC.SALES.US-RES.A~ELEC.SALES.US-COM.A~ELEC.SALES.US-IND.A&map=ELEC.SALES.US-ALL.A&freq=A&ctype=linechart&ltype=pin&rtype=s&pin=&rse=0&maptype=0
- If an additional 10% of existing average generation switched to solar at an average of $22/MWh vs 2019 overall average of $38/MWh, the U.S. would save $2.35 billion per year.

[vi] https://www.theatlantic.com/politics/archive/2020/08/how-trump-appointees-short-circuited-grid-modernization/615433/