

**Prepared Comments of Dylan Kautz, President of US Solar Development, Inc.
for the House Environmental Resources and Energy Committee**

Public Hearing on Solar Energy and Economic Development

March 18, 2024

Dear Representative Vitali, Representative Causer, and members of the committee.:

I appreciate the opportunity to share my perspective with you.

My name is Dylan Kautz, President of US Solar Development, Inc. I was born and raised in Lancaster County Pennsylvania, and have been in solar business in central Pennsylvania since 2009. My company currently employs a team of about 20 people in the office and field.

Our company specializes in the development and construction of rooftop solar, for commercial industrial clients. Our average project size is about 700kW, which in simple terms, is about 1,200 solar panels per job.

While the majority of our projects are in Pennsylvania, we're also licensed in 5 other states across the Mid Atlantic

Despite the massive potential of the Pennsylvania solar market, there has not been meaningful solar legislation in over 20 years. This has resulted in the lion's share of solar investment in the mid-Atlantic going to other Mid Atlantic States: New Jersey, Maryland, and New York. The Pennsylvania AEPS & PA Sunshine Program, fueled investment in the early 2010s. At its height, there were over 750 solar contractors registered with the Pennsylvania DEP. The program was a success, and we met what were once lofty goals of the AEPS, as did many of our neighboring states with similar programs. But as neighboring states revamped their programs to meet the exploding demand, we watched bills to do the same in PA die in political gridlock, and with it, the Pennsylvania solar industry we had invested in.

By the middle of the 2010s, there were only a couple dozen of us in PA. As electricity prices continued to rise, and solar costs have continued to decline, we have been able to rebuild our business and now work predominantly in PA.

The future of my business in PA, and many others in solar supply chain, is strongly tied to future energy policy. Lawmakers have a duty to break the partisan divide on energy and make common sense policies on the future of Pennsylvanians.

ELECTRICITY PRICES

I've met with countless businesses in PA over the past few years. Besides a handful that had long term electric contracts with impeccable timing, very few companies were unaffected by the spike in electricity prices. In my home utility territory, PPL's Standard Commercial electric rate went from ~6 cents per kwh in end of 2020, to 14.7 cents per kwh in at the end of 2022, ~ a 250% increase in 2 years time. Some larger energy users with over 100kW in average monthly demand, have a rate class (RTP), which mimics wholesale power rates and has variable electric rates. Many of these customers, which includes many manufacturers, saw their energy rates double or triple in a matter of without warning.

We have helped many businesses take matters into their own hands, by developing solar panel systems to produce their own electric, and give them the ability to project the cost of electricity for their business with certainty, for the next 25-30 years.

Most of my clients are privately owned small businesses, in central PA, a very conservative area of the country and our state. And while I know they appreciate the environmental benefits; the principal interest is always economics. Most commercial systems pay for themselves within 5 years or less, fueled by electric savings, and federal tax credits and depreciation. Some rural small businesses, or agricultural businesses are also be eligible for grants from the USDA, with funding now expanded in the IRA. The Pennsylvania SRECs is a consideration, but it is the hardest line item to project, due to state goals that have now sunsetted, and a lack commitment from the state moving forward.

PROJECTS

Solar provides a vehicle for energy independence and resilience for businesses, that simply is not otherwise available in the electricity market. I chose a few recent projects to highlight the capability and impact that solar can have on businesses in Pennsylvania.

We recently installed a solar array for LEPCO, in Marietta PA. They are largest distributor of outdoor power equipment in Pennsylvania, and a 3rd Generation business with 87 employees. A summary of their reasoning for solar, is that

economics of the project made sense, but ultimately, they made they made the investment for the next generation. Their 755kW system will produce nearly 1,000,000 kWhs per year and over 100% of onsite electricity use.

-Bridge Valley Farm in Columbia PA is 3rd Generation agricultural business in chicken egg production. The current generation is reinvesting and restoring chicken houses that had become dormant over time. We installed a solar array in 2022, and are currently adding additional capacity to two other buildings.

Electricity is a large variable operating cost and they chose to install solar panels so they can guarantee their electricity price over the next 25-30 years. The project was aided by a USDA REAP (Rural Energy for America Program) grant.

The 630 kW system will produce over 800,000 kWhs per year, and 75% of electricity use.

-Pendur Manufacturing: in New Holland PA, is a Customized Machine Manufacturer for the sawmill, pallet, lumber and steel industry, has been in business 30 years, and employs approximately 70 people.

The 415 kW system will produce 540,000 kWhs per year, and over 100% of electricity use. The decision to install the system because the return on investment met their criteria, and they wanted to reinvest profits back into the business to eliminate the future expense of electricity.

We call these projects “distributed generation” or behind the meter. These are projects that are connected directly connected to customers electrical distribution system, reducing existing load first, and sending any excess back to the grid as a credit. This results in improved grid stability and reduced transmission and distribution losses from the utility. It effectively reduces peak utility load required for the utility to serve customers in those areas. The LEPCO project is at the end of a utility line in a business park. They will regularly produce more peak power than they use, which will be back fed to the grid and serve the other industrial customers in the business park, reducing the stress on the grid in a high usage area. The other two projects (BVF & Pendur) I mentioned add generation in areas that are far from substations, in somewhat rural locations.

The ability to offset load directly is why behind the meter/DG projects are often treated differently in solar policy than utility scales projects that produce energy for the wholesale power market. I believe any state policy must have a carveout for

Distributed Generation, as this is the sector that directly and immediately affects individuals and business in Pennsylvania who decide to install solar.

DIVERSIFIED ENERGY SOURCES IN PA

On a national and state level, Politicians often deploy very simple rhetoric about energy: Drill more oil, extract more natural gas, and prices will go down and stay low.

The energy market is much more complex than that. Oil, and natural gas, are commodities, and the price is set by the free market in what is now a global energy market. If we rely too heavily on these commodities as a source for electricity generation, the energy crisis of the past few years will happen again, and again and again.

Pennsylvania should be proud to be one of the largest exporters of electricity in the nation, and the 2nd largest exporter of natural gas.

Unfortunately, this abundance of resources did not insulate PA ratepayers from the recent surging electricity rates.

PA is becoming dangerously dependent on natural gas for electricity generation, which accounted for over 50% in 2022. That will become further exacerbated by additional nuclear retirements, which were 32% of generation in 2022, and is expected to be replaced by additional Natural Gas Generation.

If Pennsylvania's energy policy is to maintain the status quo, then the future of energy costs in Pennsylvania is easy to predict. Volatility, and periods of prolonged electricity prices increases. There needs to be a more thoughtful energy policy in Pennsylvania.

One of the long term solutions, is simple in nature: we need to diversify Pennsylvania's energy portfolio. It's a conversation that Pennsylvania legislators already had and agreed on 20 years ago when they passed the Alternative Energy Portfolio Standards Act of 2004. The Pennsylvania AEPS (Alternative Energy Portfolio Standards) was a successful program that required an annually increasing percentage of electricity sold to Pennsylvania retail customers, be derived from alternative energy sources.

The problem we encountered was when we successfully built the infrastructure to meet the goals of the AEPS, Pennsylvania would not renew their commitment and increase the standards. We spent a couple years trying to educate lawmakers to finally close a loophole that allowed other states to trade into our SREC market, which had effectively crashed the price of SREC credits. Meanwhile, our neighboring states revised their renewable portfolio standards multiple times, and continued to lap Pennsylvania in solar investment, jobs, and installations.

TARIFF HISTORY:

I'd like to take a moment to dispel some national rhetoric about solar, and praise a specific provision of the Inflation Reduction Act that should be celebrated by both parties. This provision in the domestic content Tax Credit Bonus.

In an election year, we regularly hear that solar only benefits China, as they are the largest producer of solar panels in the world.

To understand this complex issue, I'll give you a brief history of how we got here.

The solar industry has endured multiple trade cases since 2012, which levied heavy tariffs on solar panels produced in China. This effectively banned solar panels made in China, 12 years ago. A recent trade case levied an additional tariff on panels assembled with some Chinese parts in 4 countries in Southeast Asia (Vietnam, Thailand, Cambodia, Malaysia). Those Asian countries currently fulfill about 80% of solar panels imported to the US. For comparison, prior to the Inflation Reduction act, only about 2% of the US demand for solar panels could be fulfilled by domestic manufacturing.

The tariffs alone were ineffective in saving American solar panel manufacturing.

The unintended consequences of tariffs, was an increase in the cost of solar to consumers, less solar installations, and stunted growth of all the companies that work in this space that can drive economic growth, create tax revenue and create jobs.

A study from SEIA from 2019 (Solar Energy Industries Association) claimed that for every new job created by a tariff (Section 201) in 2018, resulted in a loss of an additional 31 jobs.

DOMESTIC CONTENT BONUS (IRA)

For the first time in my 15 years in the industry, the federal government has finally created impactful policy, to create a renaissance of new solar manufacturing here in the United States.

Domestic Content requirements: Projects that meet the specified domestic content provisions can receive a **10 percentage point Bonus Federal Tax Credit**, effectively increasing the Base Tax Credit to 40% (from 30%).

Manufacturing: 30% investment tax credit for eligible investment costs in facilities and equipment OR a manufacturing production credit for certain components based on the volume and product manufactured.

As a starting point, projects must use **100% domestic steel and iron**.

All other manufactured material must meet the following domestic thresholds: **40% for 2023 & 2024, 45% for 2025, 50% for 2026, 55% for 2027.**

In 2023, it was virtually impossible to meet the domestic content requirements, because the requirements are stringent enough, that it requires a revitalization of a supply chain that no longer existed.

There are dozens of solar panel manufacturing plants currently under construction and planned. According to American Clean Power in September of 2023, in an eight-month period, 46 clean energy manufacturing facilities were announced, bringing in excess of 18,000 jobs. To put these in context, a 5GW solar panel factory represents a capital expenditure of ~\$250m.

For solar panels to qualify for the domestic content requirements of the IRA, the solar cells needed to be made in the USA, not just assembled.

Panelclaw, the largest manufacturer of ballasted steel racking for solar on flat industrial roofs, manufactures most of their product in West Middlesex PA, and McKees Rock PA. We source concrete block for these ballasted racking systems from Old Castle plant in Manheim PA. Numerous Pennsylvania plants produce PV wire for the solar industry.

Nationally, Terrasmart, our supplier for ground mounted systems source and manufacture in Ohio. Solaredge, an inverter manufacturer we use on about half of our projects, is establishing a plant in Texas to produce optimizers because of the IRA domestic content bonus.

Nextracker, one of the largest manufacturers of solar trackers for the utility scale industry, repurposed a Bethlehem steel plant in 2022 in Leetsdale PA that had been dormant for years. They have additional steel manufacturing lines in Texas, Arizona, Illinois, Tennessee and Nevada.

There is also a massive network of local engineering jobs associated with solar projects, including electrical, structural, and civil engineers.

Once new solar panel manufacturing plants come online, our company and others will be aiming to satisfy the domestic requirements, to provide our customers the tax credit bonus.

The dominant beneficiary solar projects are currently, and will increasingly be this domestic supply chain, and many manufacturers in Pennsylvania.

The inflation Reduction Act has provided a massive vehicle for solar investment, but its up to lawmakers in Pennsylvania to enact meaningful state policy, to compete with our neighboring states, and make sure that investment fueled by the Inflation Reduction Act is made in Pennsylvania. If we do nothing, we will miss out on a massive opportunity to create high paying skilled jobs, update our utility grid, and drive economic growth for the state in tax revenue.

MODERNIZING THE GRID:

You often hear of how our aging national electrical grid needs modernization. Solar projects are a major contributor to the modernization of the utility grid in Pennsylvania, and it's the solar projects that are bearing that cost, at the benefit of the ratepayers.

In my 15 years in the industry, there have been major changes in how solar is integrated with the grid. All the commercial projects we submit for utility interconnection, undergo a utility engineering study, to understand what effect this local power generation will have on the utility grid, and other customers. The utility will then give a cost estimate on what upgrades are needed, and what the

costs will be. The solar developer then must make the decision whether the project can bear the costs of the upgrades, and if so, will pay these costs upfront.

Most of our projects entail some level of utility upgrades, paid for by the solar developer/customer. The addition of new solar projects are modernizing our grid by adding new transformers, voltage regulation, relays, substation upgrades, and brand new substations. Many projects are expanding the reach of three phase power to new locations, which is then available to ratepayers to tap into. Its not uncommon for large behind the meter to top \$100k in utility upgrades, and utility scale projects to include several million dollars in utility upgrades, as a condition of proceeding with the project.

Our local utility, PPL, is finishing up a 3 year pilot program, to install a DER management device to solar projects. DER: Distributed Energy Resource.

In this application, the utility installs a device that is connected to the communication ports of the smart inverters that power the solar array, (Inverter: devices that produces AC electric), and interactive with the utility. The device allows the utility to monitor and actively management the solar, to help prevent and remedy certain issues:

PPLs stated purpose of the program:

- Improved safety, reliability, power quality, and stability of our grid operations.
- More adoption of Distributed Energy Resources across our service area at a lower cost to customers.

While there is still much work to be done to improve the speed of processing these utilities studies and applications, the overarching theme is that solar is pushing the modernization of the grid at their expense, and the ratepayers will continue to get a more resilient grid as a result as we continue to expand. The PA PUC (Public Utility Commission) serves as the intermediary in these processes, and they will continue to evolve as technology continually improves. We already have these processes in place now, we are prepared to expand. Our grid will change rapidly over the next decade with electrification, which will create new challenges and solar is prepared to be part of the solution.

CLOSING:

I urge lawmakers to work across party lines, and finally tackle Pennsylvania's energy future.

Meaningful energy policy that includes deploying additional solar in Pennsylvania would have a dramatic impact on our economy, the resiliency of our grid, and long term energy prices for rate payers. Renewables deserve a seat at the table.

While I have not been able to review the full details of the policy proposal that Governor Shapiro announced last week, I applaud the effort to try to address the future of energy in Pennsylvania. We are long overdue.