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**Via Email**

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**Re: Notice of Request for Information (RFI) on Ensuring the Continued Security of the United States Critical Electric Infrastructure**

**I. EXECUTIVE SUMMARY**

Sungrow Power Supply Company, Ltd. (“Sungrow”), by and through its counsel, submits these comments in response to the Department of Energy (“DOE” or “Department”) Request for Information (“RFI”) on the subject of *Ensuring the Continued Security of the United States Critical Electric Infrastructure*.<sup>1</sup> The goal of the RFI is to understand how best to prevent exploitation and attacks by foreign threats to the U.S. supply chain.<sup>2</sup> As the Department notes, this RFI is part of a larger coordinated effort, under Executive Order 14017, *America’s Supply Chains*, to develop a strengthened and effective strategy to address the security of the U.S. energy sector.<sup>3</sup> Sungrow appreciates this opportunity to submit comments in furtherance of the Department’s efforts to determine whether to recommend an order that balances national security, economic, and administrability considerations.

Sungrow’s products are not of a type (i.e., programmable, remotely controlled, capable of external communication) or magnitude (i.e., equipment with a service voltage level of 69 kV or

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<sup>1</sup> *Ensuring the Continued Security of the United States Critical Electric Infrastructure*, 86 Fed. Reg. 21309 (April 22, 2021) (“DOE RFI”).

<sup>2</sup> *Id.*

<sup>3</sup> 86 Fed. Reg. 11849 (February 24, 2021).

higher) that can cause harm to the bulk power system and therefore **should not** be considered “high-risk electric equipment.” Rather, Sungrow’s products will be a safe and reliable way to meet the Biden Administration’s clean energy goals: to make the U.S. a 100% clean energy economy with net-zero emissions by 2050.<sup>4</sup>

The Department has made clear that the RFI process is to inform how best to strengthen protections against high-risk electric equipment transactions by foreign adversaries, while providing *additional certainty* to the utility industry and the public.<sup>5</sup> Despite DOE’s best efforts, the proceedings continue to create an overhang of uncertainty about which products will be prohibited and which products will be allowed thereby causing great disruption to the renewable energy market, specifically solar power. DOE has noted that “during the period of time in which further recommendations are being developed, utilities will seek to act in a way that minimizes the risk of installing electric equipment and programmable components that are subject to foreign adversaries’ ownership, control, or influence.”<sup>6</sup> Utilities and their suppliers have already been scrutinizing the selection of equipment installed on the bulk power system. Sungrow submits that such statements, while important and well-intentioned in ensuring the security of the grid, dampen procurement of electric equipment and threaten to adversely impact the public interest by impeding supply of products that are integral to the development of generation resources, and the resilience of the electric grid. Indeed, various project developers have suspended or withdrawn from projects due to the uncertainties created by previous Executive Orders, Prohibition Orders, and the current RFI.

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<sup>4</sup> *The Biden Plan for a Clean Energy Revolution and Environmental Justice*, <https://joebiden.com/climate-plan/> (last accessed June 3, 2021).

<sup>5</sup> DOE RFI at 21309.

<sup>6</sup> DOE RFI at 21310.

Substantial cause exists for the Department to act expeditiously to dispel the uncertainty. Specifically, Sungrow urges the Department to clarify, as soon as possible that photovoltaic inverters sold without a supervisory control and data acquisition (“SCADA”) system and integrated energy storage system solutions are not intended to be prohibited as “high-risk electric equipment” because they present little to no danger to the grid.

In the alternative, Sungrow requests that the Department confirm at the earliest that Sungrow and its products are pre-qualified for future transactions. Furthermore, Sungrow fully endorses the development of best practices for procurement of electric components and the development of risk mitigation criteria for equipment installed on the bulk power system. Also, to the extent the Department adduces evidence requiring such an approach, Sungrow would support a tailored “rip and replace” order addressed to inverters equipped with non-U.S. made SCADA systems that have been integrated into the bulk power system.

As DOE has underscored, comments submitted in response to this RFI “are intended to enable an approach that builds on, clarifies, and, where appropriate, modifies prior executive and agency actions.”<sup>7</sup> Consistent with the bipartisan letter of U.S. Senators Joe Manchin (D-WV), Ranking Member of the Senate Energy and Natural Resources Committee, and Jim Risch (R-ID) to Secretary of Energy Dan Brouillette, Sungrow trusts that the DOE will “give[] full consideration and weight” to all comments submitted during DOE’s review.<sup>8</sup>

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<sup>7</sup> DOE RFI at 21309.

<sup>8</sup> See U.S. Senate Committee on Energy & Natural Resources, *Manchin And Risch Ask DOE To Include Energy Providers In Development Of Grid Security Protocol* (July 16, 2020), available at <https://www.energy.senate.gov/public/index.cfm/2020/7/manchin-and-risch-ask-doe-to-include-energy-providers-in-development-of-grid-security-protocol>; see also DOE RFI re: *Securing the United States Bulk-Power System*, Docket No. DOE-HQ-2020-0028 (2020).

## II. DESCRIPTION OF SUNGROW

Sungrow is a global leading inverter solution supplier for renewables with over 154 GW installed worldwide as of June 2021. Founded in 1997 by University Professor Cao Renxian, Sungrow is a leader in the research and development of solar inverters, with the largest dedicated R&D team in the industry, and a broad product portfolio offering photovoltaic (“PV”) inverter solutions and energy storage systems for utility-scale, commercial, and residential applications, as well as internationally recognized floating PV plant solutions. With a strong 24-year track record in the PV space, Sungrow products are in power installations in over 150 countries, maintaining a worldwide market share of over 27%.

In the United States, Sungrow Americas is headquartered at 575 Market Street, San Francisco, CA 94105. Sungrow Americas also maintains a service training center at 5789 S40 Street, Suite 1., Phoenix, AZ 85040 and has employees operating in 13 different states. Its corporate parent is headquartered in Hefei, China. The parent company is listed on the Shenzhen Stock Exchange. No foreign government directly or indirectly owns or controls the company.

Sungrow has two main product lines caught in regulatory limbo: (1) inverters and (2) energy storage systems.<sup>9</sup> Sungrow’s inverter products include 3-phase string inverters (30kW-250kW), central inverters (2.5MW-3.6MW), and Turnkey inverter stations (12.47kV-34.5kV).<sup>10</sup> All inverter products are designed and developed by Sungrow’s global headquarters in Hefei, China, and manufactured in Bangalore, India. Sungrow’s products also integrate transformer component parts designed and manufactured in the United States. Sungrow sells inverters to many countries globally, and certain specific inverter models are crafted for the United States market.<sup>11</sup>

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<sup>9</sup> For more information about these products, see <https://sungrowpower.com/en/products>.

<sup>10</sup> See <https://en.sungrowpower.com/ProductsHome/14>.

<sup>11</sup> Applicable models include the following: String-SG36CX, SG60CX, SG60KU-M, SG125HV, SG250HX, Central- SG2500U-MV, SG3150U-MV, and SG3600UD-MV.

Sungrow's large inverter systems reach end consumers via a direct sales channel while smaller systems reach end consumers via national distributors such as Consolidated Electrical Distributors (CED) and WESCO International. Large customers of Sungrow's inverter technology include leading U.S. construction companies, which offer engineering, procurement, construction, and O&M services for solar PV plants throughout North America such as McCarthy Builders (Phoenix), RES America (Broomfield), Signal Energy (Chattanooga), NextEra Energy Inc. (Juno Beach), Primoris Renewable Energy (Denver), Strata Solar LLC (Durham), Swinerton Builders (San Francisco), Blattner Energy, Inc. (Avon), and Rosendin Electric, Inc. (San Jose). The project development companies that use Sungrow include: Macquarie Capital (San Francisco), Consolidated Edison, Inc. (New York), Capital Power Corp. (Boston), Capital Dynamics, Inc. (New York), D. E. Shaw Renewable Investments, L.L.C. (New York), National Grid USA (Waltham), AES Corp. (Arlington), LightSource BP US (San Francisco), ENEL Green Power (Andover), Clenera, LLC (Boise), and RWE Renewables Americas (San Francisco).

In addition to inverters, Sungrow also manufactures lithium ion based Stationary Energy Storage equipment,<sup>12</sup> which is used in peak shaving, frequency regulation, capacity firming, and may be combined with renewable generation. In 2016, Sungrow officially established a joint venture with Samsung SDI Company ("Samsung") – Sungrow-Samsung SDI Energy Storage Power Supply Co. ("SSEP"). In this joint venture, Sungrow is the distributor and integrator of Samsung's battery products. Samsung leverages Sungrow's global market penetration and customer base, and uses Sungrow as a sales channel. While Sungrow packages the storage solutions, it is not involved in the design or manufacture of these battery cells or related

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<sup>12</sup> See <https://sungrowpower.com/index.php/en/products/storage-system>. The specific products are Power Conversion System/Hybrid Inverter (String and Central), Li-Ion battery containers, and systems (Samsung-SDI, CATL, EVE).

technology; SSEP provides fully integrated, high-end energy storage solutions. For example, in 2018, Sungrow announced a set of projects, totaling over 50MWh and spanning multiple sites across Massachusetts, California and Ontario, using customized systems including its 2MW-4.2MWh system solutions.<sup>13</sup>

Sungrow submits that it is time-sensitive to disallow only those products that are considered particularly vulnerable so as to preserve the integrity of the grid. As described in these comments, Sungrow is committed to creating secure and reliable products for its customers.

### **III. COMMENTS**

Sungrow is among the most commonly installed inverter technologies in major infrastructure projects across the United States without a single cybersecurity issue since entering the market in 2015. In 2021, it is anticipated that investment in the United States will create approximately 20 GW of new solar power installations.<sup>14</sup> Sungrow products will be used in approximately 35% of those projects. No competitor of Sungrow can service the U.S. market in terms of the quality, quantity and cost of Sungrow's products. If DOE were to limit imports of these products, it would potentially limit healthy competition in a product category that does not have any U.S. suppliers. This harms both project developers and consumers. Indeed, Sungrow has already been affected by the uncertainty created by the RFI. Many of Sungrow's customers are American companies or companies building electric generation projects in the United States. Some companies have delayed, redesigned or cancelled projects due to the lack of clarity and the possibility of additional long run costs if covered products are procured.

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<sup>13</sup> *Sungrow Wins Deal to Supply Over 50MWh of ESS Solutions to North America*, PR NEWS (May 25, 2018) <https://www.prnewswire.com/news-releases/sungrow-wins-deal-to-supply-over-50mwh-of-ess-solutions-to-north-america-300654906.html>.

<sup>14</sup> See Solar Energy Industries Association, *Solar Market Insight Report 2020 Q2*, available at <https://www.seia.org/research-resources/solar-market-insight-report-2020-q2>.

Without a doubt, such cancelled contracts have had ripple effects throughout the market – major American projects have been delayed by more than a year, and American power producers have been forced to redesign projects from scratch adding substantial costs to projects. These potential long run costs, and long lead times in electricity component procurement have dampened negotiations, budgeting, and planning in the renewable energy market since investors in the renewable energy market seek to avoid investing in transactions that, absent clarification from the DOE, may appear to be prohibited. The overhang of uncertainty has cost manufacturers and developers millions of dollars in business and potential clients, while stifling the investment climate in power system equipment in the United States.

The concern is announcement of proscriptive rulings without definitive instructions about exactly what products will be prohibited and what products will be permitted. This lack of definitive guidance has left EPC contractors, developers, lenders and investors with substantial doubts and questions, and has stymied efforts to move forward on generation development projects. The present circumstances highlight a well-trodden situation in which potential regulation clouds the ability for businesses to make decisions. This creates an adverse impact on the public interest with regard to ensuring that project developers have access to legitimate, cost-effective inverters and storage products.

Consistent with these concerns, Sungrow provides the following responses to particular questions in the RFI.

- a. Question 3: What actions can the Department take to facilitate responsible and effective procurement practices by the private sector? What are the potential costs and benefits of those actions?***

Sungrow supports the Department's efforts to ensure the security and resilience of energy infrastructure within the United States. At the same time, maintaining an open investment climate

in electric equipment is important for the overall growth and prosperity of the United States, which must be balanced with the need to protect the United States against a critical national security threat. In order to achieve this balance, the Department should adopt a tailored approach aimed at threats to the United States energy grid, while also minimizing the financial impact on consumers and participants in the supply chain as a whole. To this end, the Department should (1) specify the type of high-risk electric equipment; (2) specify that electric equipment with broader uses beyond the bulk power system do not qualify as high-risk equipment; and (3) provide a pre-approval or pre-qualification process for imported electric equipment.

**i. Specify the type of electric equipment that would be subject to DOE regulations.**

Inverters require supervisory devices such as SCADA or other controllers to control inverters and direct its tasks. The concern of foreign malicious action is focused on “smart inverters” that are connected to the internet and capable of two-way communications.<sup>15</sup> The main threat is that such smart inverters may be breached remotely to cause reliability issues on the grid, or that Trojan files could be hidden in the inverters during the manufacturing process that could be disruptive to the bulk power system when activated.<sup>16</sup>

By contrast, simple inverters imported and sold without a SCADA system are not capable of this type of malicious action because they only have the most rudimentary internal micro-control systems. To hack such an inverter, one would have to coordinate a physical attack requiring direct access to the software and hardware of the inverter’s micro-controls. Removing the remote access capabilities, internet connection, or any other two-way communication (e.g., through SCADA systems) effectively neutralizes the aforementioned concerns. Such inverters imported without a

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<sup>15</sup>Andrew Coffman Smith, *Former U.S. Homeland Chief warns Chinese Solar Inverters Pose Cyber Threat*, S&P Global (Nov. 6, 2018).

<sup>16</sup>*Id.*



SCADA system do not pose a threat to the bulk power system, particularly when paired with American made security and supervisory systems.

Sungrow's products do not pose undue risk to the bulk power system, critical infrastructure, the economy, the security and safety of Americans, or national security. Sungrow's inverters are not "smart" and Sungrow does not supply any supervisory devices. Rather, Sungrow encourages the use of American-made SCADA systems with exe-Guard developed by the DOE. This effectively ensures that systems built with Sungrow are virtually impenetrable to hacks and almost exclusively protected by American made cybersecurity technology. As evidenced by its perfect cybersecurity record since entering the market in 2015, Sungrow believes this model is a much safer option compared to other foreign inverter manufacturers who export their non-American technology to the United States. To the extent manipulation may be possible through such external SCADA systems, all Sungrow inverters will turn off within a certain number of cycles if they detect malicious action. Outside the SCADA systems, the inverters are not controllable or addressable remotely, such as through the internet or a closed circuit.

To this end, Sungrow recommends that DOE take the following specific actions:

- Prohibit the import of all "smart inverters" capable of two-way communication and internet access;
- Prohibit the import of SCADA systems from all foreign countries to ensure that inverters imported into the United States pose no threat to cybersecurity;
- Require the adoption of American-made SCADA systems with exe-Guard developed by the DOE or other American companies; and
- To the extent, DOE gathers evidence that indicates that compromised grid equipment is already installed on the system, undertake a specific "rip and replace" order for all such equipment made with non-U.S. made SCADA systems.

Such targeted rules would be more consistent with E.O. 14017's goal of protecting the resilience of the U.S. electric grid than a broader prohibition that includes inverters with American-made SCADA systems.

**ii. Specify that electric equipment with broader uses should not be subject to DOE regulations or any further executive orders.**

Transmission lines above 69kV and up to 230kV are considered high voltage lines and are part of the bulk power system infrastructure. While Sungrow's inverters do *support* systems greater than 69 kV, they also have broader uses beyond the bulk-power system. For example, Sungrow's residential inverters can be used off the electric grid, and its utility scale inverters can also be used outside the scope of the bulk-power system. Such applications may include, but are not limited to, low to medium voltage local distribution grids, behind-the-meter-applications (e.g. powering a school, factory or other large commercial off-taker), or combination solar and storage applications. For example, Sungrow supplied inverters for 5.5 MW of solar carports on parking lots across the Chaffey Community College District campus in California, which solar projects are expected to save that district \$28.5 million over the life of the project.<sup>17</sup> Similarly, Sungrow supplied inverters for a 1.6 MW project the Gilroy School District in Gilroy, CA expected to save the school district \$1.5 million in energy costs over 25 years.<sup>18</sup>

To this end, Sungrow recommends that DOE take the following specific action:

- Explicitly allow electric equipment that have broader application of use beyond the bulk-power system.

A rule allowing for broader uses will ensure that DOE does not cast a wide net and accidentally capture electric equipment that has multiple useful applications beyond the bulk

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<sup>17</sup> See Borrego Solar, Chaffey Community College District School District, <https://www.borregosolar.com/solar-project-portfolio/largest-community-college-solar-project>.

<sup>18</sup> See Borrego Solar, Gilroy Unified School District, <https://www.borregosolar.com/solar-project-portfolio/gilroy-unified-school-district>.

power system. Such a rule will also ensure that electric equipment can continue to be used for local distribution grids and behind-the-meter-applications – both critical to meeting renewable energy targets.

**iii. Provide a mechanism for pre-approval of electric equipment that meets the aforementioned criteria.**

Sungrow strongly urges the Department to pre-approve or pre-qualify Sungrow’s products for all future transactions. As discussed above, Sungrow’s products do not pose an undue risk to the bulk power system, critical infrastructure, the economy, the security and safety of Americans, or national security. Given the sourcing challenges and cost impacts for companies facing prohibited transactions for bulk-power system electric equipment, Sungrow requests that the Department undertake this pre-qualification process as soon as possible.

The Department has previously indicated that testing components and addressing vulnerabilities or inspecting manufacturing plants, may be used as a pre-condition to allow a transaction (or class of transactions) that otherwise would have been prohibited.<sup>19</sup> Sungrow agrees with the Department’s previous recommendation, and suggests that DOE adopt it expeditiously.

Additionally, Sungrow recommends that DOE take the following specific actions with respect to the pre-qualification process:

- Electric equipment that meets the specifications in Sections (a)(i) and (a)(ii) above, should explicitly be qualified as low-risk electric equipment; and
- Independent and rigorous stress testing of such low-risk products at American laboratories pursuant to American safety and reliability standards.

Sungrow leads by example. None of the products supplied by Sungrow to the United States have integrated SCADA technology. Instead, Sungrow encourages its customers to choose Made-

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<sup>19</sup> *Executive Order on Securing the United States Bulk-Power System Frequently Asked Questions*, DEP’T OF ENERGY (January 2021) at 4 (“Previous DOE FAQ”).

in-USA, SCADA systems with malware protection, notably exe-Guard developed by the Department. This effectively ensures that systems built with Sungrow products are virtually impenetrable to hacks and almost exclusively protected by American made cybersecurity technology. Further as described above, Sungrow’s products have broader uses beyond the bulk power system.

Sungrow products are also independently tested at American laboratories pursuant to American safety and reliability standards. Sungrow ensures that its products pass all such tests before they enter the domestic supply chain. The aforementioned actions provide ample justification for pre-approving or pre-qualifying Sungrow and its products for future transactions.

Sungrow supports the prompt implementation of such pre-approval or pre-qualification procedures in order to provide certainty for electric power sector investment decisions.

#### **iv. Potential costs and benefits of such specifications.**

A lot of uncertainty remains for customers of products like Sungrow’s inverters and storage systems. This commercial upheaval is exacerbated by the fact that the lead time in electricity component supply chains and procurement procedures is often months long, involving detailed negotiations, budgeting, engineering, and planning before equipment can be safely and reliably supplied.

Clarifying that inverters and storage systems are not “high-risk electric equipment” is consistent the Department’s statements about the adoption of renewable energy in the United States. The Department clarified that “[r]enewables play a very important role in the country’s energy infrastructure and the Administration supports an ‘all of the above’ approach to generation.”<sup>20</sup>

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<sup>20</sup> Previous DOE FAQs at 5.

Considering inverters and/or storage systems to be high risk electrical equipment, particularly those imported and sold without SCADA systems, would create a barrier to renewable generation in the United States. To the extent that any new DOE orders, rules, and regulations impose higher costs and/or delays—including through uncertainty surrounding the coverage of inverters and storage systems—that will diminish the ability of companies to deploy solar or other renewable generation in the United States. This is because timing for project finance and development is very tight vis-à-vis eligibility for the federal investment tax credit for solar facilities. Further, returns in favor of equity cannot afford to surrender any basis points under the current circumstances. Otherwise, it is just not lucrative to undertake the development.

Furthermore, in order to take advantage of the safe harbor provisions of the solar investment tax credit (“ITC”), some Sungrow customers have already procured inverters and other necessary component parts for their solar projects.<sup>21</sup> The present uncertainty surrounding the implementation of E.O. 14017 and the related DOE RFI will undoubtedly have a chilling effect on any further procurement of components. It also leaves in limbo the fate of those component parts that have already been procured for ITC purposes but remain warehoused. It is also unclear whether procured products that eventually fall under the scope of DOE regulations will fall outside the ITC safe harbor.<sup>22</sup> Sungrow requests that DOE’s immediate and clear guidance is necessary to avoid imposing disproportionately large costs and burdens on project developers. Simply, the electric power sector (and particularly the renewable energy sector) cannot wait years for increased

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<sup>21</sup> One way to safe harbor is to spend 5% or more of the total cost of the facility. Notice 2013-29, Internal Revenue Service (2013) available online at <https://www.irs.gov/pub/irs-drop/n-13-29.pdf>. This may include product procurement.

<sup>22</sup> Presently, the Internal Revenue Service only contemplates tolling the safe harbor where the Department of Defense has raised security concerns regarding a plan and efforts are undertaken to mitigate such concerns by modifying the plan. Notice 2019-43, Internal Revenue Service (2019) available online at <https://www.irs.gov/pub/irs-drop/n-19-43.pdf>.

domestic production of these products, considering the extreme challenges we face presented by global climate change.

In a complex global supply chain, actions that unduly restrict or otherwise create additional uncertainty around the market for equipment such as inverters and storage systems can also have impacts to grid reliability. It is also important to note that there is not a domestic supplier market that exists today – not a single US-based company supplies solar inverters. Supplier diversity mitigates supply chain risks that could threaten the reliability of the electric grid. Moreover, different types of inverters and storage systems are needed for different applications. Filling the supply vacuum in a safe, reliable and timely manner would be a herculean task—one that would undoubtedly cause more expensive delays and added frustration for the electric power sector already facing the economic consequences of COVID-19.

Accordingly, Sungrow respectfully requests that the Department provide certainty that inverters and storage systems imported and sold without SCADA systems are not considered high-risk electric equipment subject to potential DOE regulations.

***b. Question 4: Are there particular criteria the Department could issue to inform utility procurement policies, state requirements, or FERC mandatory reliability standards to mitigate foreign ownership, control, and influence risks?***

Sungrow fully supports the specification of rigorous testing standards to mitigate foreign ownership, control, and influence risks. In addition to the above high-risk electric equipment specification, independent stress testing of products will mitigate the risks surrounding the ability of a foreign entity to exert control and influence over component parts in the grid.

Sungrow products undergo a slew of reliability and security tests before they are finally used in electrical systems: in-house testing, independent laboratory testing, compliance with North

American Electric Reliability Corporation (“NERC”) requirements, and cybersecurity assessments.

First, Sungrow has an in-house testing laboratory that is fully compliant with standards established by Underwriters Laboratory (“UL”). All of Sungrow’s products undergo rigorous in-house testing. Second, all of Sungrow’s products are independently tested by third-party laboratories for compliance with American safety standards before they are installed. In the United States, the American National Standards Institute (“ANSI”), UL, and the Institute of Electrical and Electronics Engineers (“IEEE”) are responsible for inverter safety standards. Sungrow ensures, through independent testing at nationally recognized laboratories, that all products imported into the United States are compliant with these standards. Third, all Bulk Power Systems are already governed by NERC’s Critical Infrastructure Protection (“CIP”) security standards, To the extent that DOE’s regulations will build upon the NERC-CIP standards, Sungrow highlights that it remains fully compliant with all existing NERC-CIP requirements.<sup>23</sup>

Sungrow recommends that DOE take the following specific actions:

- Require suppliers to a) submit their in-house testing laboratory procedures and b) demonstrate compliance with standards established by Underwriters Laboratory (“UL”) or any other National Laboratory standard approved by DOE to ensure products are sufficiently stress tested;
- Require both routine and randomized independent testing by third-party laboratories for compliance with American safety standards and a submission of an annual report of compliance;
- Review and issue any regulations consistent with NERC-CIP requirements; and
- Review and issue any regulations consistent with FERC cybersecurity requirements.

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<sup>23</sup> 85 Fed. Reg. at 41024 (citing <https://www.nerc.com/pa/Stand/Pages/CIPStandards.aspx>).

Any product that fails these requirements should not be procured. The independent testing, the limited vulnerabilities, and the mitigation measures should ensure that products do not pose an undue risk to the bulk power system, critical infrastructure, the economy, the security and safety of Americans, or national security.

***c. Question 2: What specific additional actions could be taken by regulators to address the security of critical electric infrastructure and the incorporation of criteria for evaluating foreign ownership, control, and influence into supply chain risk management, and how can the Department of Energy best inform those actions?***

Sungrow focuses its comments on the second part of this question – providing some suggestions on creating criteria for evaluating foreign ownership, control, and influence (“FOCI”).

Sungrow recommends that DOE take the following specific actions:

- Explicitly enumerate specific foreign governments and foreign non-government persons engaged in a long-term pattern or serious instances of conduct significantly adverse to the national security of the United States as high-risk transactions;
- Provide detail on the required nexus between products and FOCI.
- Create a pre-qualified or safe-harbor equipment and vendors, including equipment or vendors with a connection to one of the listed “foreign adversary” countries.

The RFI does not provide a current list of “foreign adversaries.”<sup>24</sup> Sungrow respectfully requests that the DOE provide further clarity regarding whether DOE is adopting the list of foreign adversaries previously listed in Executive Order 13920, and also provide more detail regarding the required nexus with a foreign adversary, particularly as it relates to FOCI.

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<sup>24</sup> *C.f.*, the previous Executive Order: *Securing the United States Bulk-Power System* (“E.O 13920”), 85 Fed. Reg. 41023 at 41024 (“The current list of ‘foreign adversaries’ consists of the governments of the following countries: The People’s Republic of China (China), the Republic of Cuba (Cuba), the Islamic Republic of Iran (Iran), the Democratic People’s Republic of Korea (North Korea), the Russian Federation (Russia), and the Bolivarian Republic of Venezuela (Venezuela).”).



The DOE should not exclude entire companies or products based solely on their connection to the listed foreign adversary countries, such as a company's nationality. Rather than restricting all imported products from non-state owned companies with no demonstrated conduct significantly adverse to the national security of the United States, the Department should focus on those products actually designed, developed, manufactured, or supplied by foreign governments and foreign non-government persons engaged in a long-term pattern or serious instances of conduct significantly adverse to the national security of the United States, its allies, or the security and safety of United States persons. Both American companies (*e.g.*, Swinerton Builders) and companies headquartered in allied or non-adversarial countries (*e.g.*, Schneider Electric Co., a European multinational company), rely on Sungrow technology through specific distribution agreements, based on Sungrow's impeccable security record across its global operations.

Outside the "foreign adversaries" qualification in the RFI, companies have little guidance about what transactions are covered as having a sufficient nexus with a foreign adversary. This uncertainty leaves global companies, such as Sungrow, in constant limbo and makes it difficult for Sungrow's customers in the United States to assess the risks of certain transactions. Clear processes and identification of the required amount of FOCI is essential for business planning related to electric system component procurement.

Sungrow respectfully requests the Department to consider identifying companies or products with a connection to the listed "foreign adversary" countries that present little risk, and to create safe harbors or similar protections for such companies and products. As contemplated by RFI and in Sungrow's comments above, the Department could publish a list of pre-qualified equipment and vendors, including equipment or vendors with a connection to one of the listed "foreign adversary" countries.

#### **d. Critical Defense Facilities**

On December 17, 2020, Secretary of Energy Dan Brouillette issued Prohibition Order Securing Critical Defense Facilities. The Order bars certain utilities that supply critical defense facilities (“CDFs”) from procuring specific BPS electric equipment from the People’s Republic of China.<sup>25</sup> The DOE ultimately revoked the Prohibition Order to create a stable policy environment before the emergency declaration made by the BPS Executive Order expires on May 1, 2021.

The second part of the RFI requests comments on the advisability and feasibility of an expanded approach that would not only focus on CDFs but also cover distribution facilities that serve CDFs. DOE notes that the prohibition of the installation of at-risk electric equipment that serves any critical infrastructure facility may further enhance the Nation’s national and economic security.

Although DOE has explicitly revoked the existing Prohibition Order, Sungrow submits these comments under the assumption that DOE may use the initial Prohibition Order as a baseline or refer the Regulated Equipment therein. The Prohibition Order defined Regulated Equipment as:<sup>26</sup>

1. Power transformers with low-side voltage rating of 69 kV or higher and associated control and protection systems such as load tap changers, cooling systems, and sudden pressure relays;
2. Generator step up transformers with high-side voltage rating of 69 kV or higher and associated control and protection systems such as load tap changers, cooling system, and sudden pressure relays;
3. Circuit breakers operating at 69 kV or higher;
4. Reactive power equipment (Reactors and Capacitors) 69 kV or higher; and,
5. Associated software and firmware installed in any equipment or used in the operation of items listed in 1 through 4.

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<sup>25</sup> See *Prohibition Order Securing Critical Defense Facilities*, DEP’T OF ENERGY (Dec. 17, 2020), available at <https://www.energy.gov/sites/prod/files/2020/12/f81/BPS%20EO%20Prohibition%20Order%20Securing%20Critical%20Defense%20Facilities%2012.17.20%20-%20SIGNED.pdf> (“Prohibition Order”).

<sup>26</sup> Prohibition Order at Attachment 1.

Sungrow would like to emphasize in comments that its products **do not** fall within the enumerated list of Regulated Equipment, and so, the Prohibition Order (or any replacement Prohibition Order that expands the types of facilities to include distribution facilities) would not apply to equipment supplied by Sungrow.

#### **IV. CONCLUSION**

Sungrow respectfully requests that the Department consider these comments and ensure that any DOE action regarding a replacement order or new regulations is consistent with them. Sungrow fully supports the necessity of safeguarding the bulk power system and the goals of E.O. 14017. For the reasons discussed above, Sungrow supports a rulemaking that would (1) clearly specify the types of equipment that are considered high or low-risk electric equipment; (2) provide for a pre-qualification mechanism; (3) provide for risk mitigation through security measures and stress-testing; and (4) make clear the “foreign adversary” designation and how that relates to high-risk electric equipment.

Respectfully Submitted,

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