Lake Mills Area School District Solar Inverter waiver to use SMA Inverters

Waiver type: Unreasonable Cost and Nonavailability
Waiver Recipient name: Lake Mills Area School District
UEI: LEQ2MQVZZBA3
Granting Agency: Dept of Energy
Award information (Federal Award Identification Number, Assistance Listing number): DE-EE0010109.0
Waiver Level: project (WI PSC OEI EIGP)
Product Service Code (PSC) : 6117
Is this a general applicability waiver? No

Procurement Summary

The Lake Mills Area School District in Wisconsin is requesting an Unreasonable Cost and nonavailability partial waiver of the manufactured products requirements of Section 70914 of the Build America, Buy America Act (BABA) included in the Infrastructure Investment and Jobs Act (Pub. L. 117- 58) from the Dept of Energy (DOE) for SMA solar inverters manufactured by SMA in Niestetal, Germany, for two rooftop and BESS solar projects at the Elementary School and Middle School in Lake Mills, WI.

Brief Description of Project/Location/Infrastructure:

The Lake Mills Area School District (LMASD) is updating their Elementary & Middle Schools to be Community Resilience Centers (CRC). LMASD will collaborate with the City of Lake Mills and the Red Cross to update procedures for providing critical care/power in the event of an emergency. Critical power will come from the proposed solar plus storage system; including solar modules, racking, inverters, and battery equipment. The solar arrays on the Elementary School will be tied to three SMA Cube 33kW Inverters, connected to 480V AC 3PH grid with breakers and disconnect. The Middle School solar arrays will be tied to four SMA Cube 50kW Inverters, connected to 480V AC 3PH grid with breakers and disconnect. Two Sol-Ark 60kW Inverters will be connected to and communicating with the BESS system installed as part of the Middle School's Community Resilience Center, providing 240 kWh of total battery storage.

Energy management training, incorporating solar and emerging technology into curriculum, and educational tours focusing on CRC(s) are also a priority. The project is being constructed in Lake Mills, WI in Jefferson County. This waiver is pertaining to the solar SMA and Sol-Ark inverters from the infrastructure listed above. We are asking for a waiver to apply from now until May 2026, at which time the project is planned to be commissioned and in service. For recipient expenditures to be covered by this waiver, the inverters will be installed by March 2026, with “Installed by” meaning inverters being permanently fastened to their support structure at the project site.

Waiver Level and Scope:

Project-level waiver for a single project (Middle and Elementary Schools). No other project or award will utilize the waiver

Total estimated project/infrastructure cost, with estimated federal share and recipient cost share breakdowns:

The grant (WI PSC OEI EIGP) was awarded April 2024. Total project cost is estimated at $1,389,663. Funding in the amount up to $416,899.00 is provided using funds granted by the U.S. Department of Energy to cover the project costs as detailed in the budget section. The grant was awarded by the local Public Service Commission (PSC) Office of Energy Innovation's Energy Innovation Grant Program. A project cost share of $972,764.00, or 70.00 percent is required from the Lake Mills Area School District.

Description of items, products and materials or categories of such anticipated to be covered by this waiver including name, cost, quantity(ies), country(ies) of origin, and (if relevant) Product Service Codes (PSC) and North American Industry Classification System (NAICS) codes for each: (need Sol-Ark info)

As provided by SMA:
September 3rd, 2025
SMA manufactures inverters in Germany, the United States, and will begin the final assembly of some power systems in the US starting in 2025, with the specific location in Denver, Colorado being a key site for PV inverter production. While SMA is a German company with its headquarters and primary research in Germany, it has expanded its manufacturing presence to the US for the North American market.

Countries of Origin for components: **Niestetal, Germany**. Starting in the first quarter of 2026, SMA will begin the final assembly of large-scale PV and storage power systems in the United States for global deployment out of **Denver, Colorado.**

Waiting for Sol-Ark inverter information

The SMA Cube and Sol-Ark inverters are reliable and time-tested products that have good capabilities for power curtailment and control by their 'Cluster' controller. SMA manufactures inverters in Germany, the United States, and will begin the final assembly of some power systems in the US starting in 2025, with the specific location in Denver, Colorado being a key site for PV inverter production. Sol-Ark inverters and designed in Texas and manufactured in China.

Component Name	Cost (can be percentage)	quantity(ies) (for one module)	country(ies) of origin	Product Service Codes (PSC)	North American Industry Classification System (NAICS)
M6 CELLS	30%		Indonesia	6117	334413

A detailed justification as to how the non-domestic item(s) is/are essential to the project:
The solar inverters plan and design for this project was carried out in late 2023, and the specifics of the Distribution System Battery Energy Storage Systems (BESS), including the inverter technology is precise to the location, voltage, and amperage that it will be connected to in powering up the school's Community Resilience Center. The SMA and Sol-Ark Inverters are critical components for achieving deployment speed, system functionality, and energy resilience, and were the best technology in both quality and quantity during the time of project planning and

design. As local brownouts, electrical surges, and increasingly extreme weather have been impacting this school district, this technology provides them the reliability necessary for resilience and maximizing the proposed solar plus storage system. BABA-compliant inverters do not have the time-tested reliability of other pre-existing technology on the market. With the SMA and Sol-Ark inverters acting like the ‘brain’ of the entire system, it is necessary that the best, most reliable inverter be used, regardless of where it is manufactured to avoid costly repairs and replacements from largely untested and unproven BABA-compliant inverters. BABA-compliant hybrid and rapid-shutdown code compliant inverters are not currently widely available (A list of U.S.-based solar inverter manufacturers is available from Solar Power World here: https://www.solarpowerworldonline.com/u-s-solar-inverter-manufacturers/)

This waiver will encourage continued community investments while bringing the benefits of Community Resilience Centers to US communities, especially those like Lake Mills, where inverters are ready to be installed. Waiting for an American-Made comparable inverter in technology and cost will cause costly delays. Since the school is publicly funded, it is in the public’s (and school’s) best interest to remain on schedule and install SMA and Sol-Ark inverters which are the best, and least costly, technology for the proposed BESS system.

A certification that the recipient made a good faith effort to solicit bids for domestic products supported by terms included in requests for proposals, contracts, and non-proprietary communications with potential suppliers:
Planning and design for this Community Resilience Center (CRC) which incorporates BESS technology began in 2023 when there were no American Made inverters that were also fire code compliant with rapid shut down requirements. Of the ‘American-Made’ list: only ten brands; CE+T America, CyboEnergy, Duracell 2, EPC Power 1, EPC Power 2, Enphase Energy 1, Enphase Energy 2, Lunar Energy, MidNite Solar, OutBack Power Technologies, Power Electronics, and Syncris produce hybrid/battery compliant inverters, but do not meet other technical specifications of the designed project.
We have attached a letter from a local distributor stating that there were no BABA compliant solar inverters at the time of the planning and design of this project, necessary for the technical specifications required by the Community Resilience Center. Even now in 2025, a UL listed BABA compliant inverter that meets our specifications does not exist. Our technical specifications are: 240kWh/120kW battery storage system installed in the Middle School building supporting 240kWh total battery storage capacity, estimated to provide several days of backup power to loads in the 480V/150A sub panel. Lithium Iron Phosphate batteries will be used with safer chemistry and long battery life. Batteries will be fed power from (4) 60kW AC inverters - connected to 480V AC 3PH grid with breakers and disconnect and transfer switch to provide power during grid outages to a 150A panel with loads determined as necessary for the gymnasium use as emergency shelter.

Suppliers contacted and the responses provided:

Greentech Renewables - Madison WI
Eric Prescott. eric.prescott@greentechrenewables.com 608.400.5700 - Office

Werner Electric
Sean Menor. smenor@wernerelectric.com Office: 920-337-4064 Response provided July 2025:

A justification statement—based on one of the applicable justifications outlined above—as to why the listed items cannot be procured domestically, including a description of the due diligence performed (e.g., market research, industry outreach, cost analysis, cost-benefit analysis) by the recipient in an attempt to avoid the need for a waiver. This justification may cite, if applicable, the absence of any Buy America-compliant bids received for domestic products in response to a solicitation

The electrical contractor, WES Engineering, has been procuring solar technology for the past ten years and is very knowledgeable about product availability and quality for rooftop and BESS systems. WES has been tracking the market for the past three years for this project and together with other stakeholders, consensus about the best design was reached. Market research, industry outreach, cost analysis and cost-benefit done in the planning stages of this project in 2023, led to the contractor determining that SMA and Sol-Ark inverters were the best cost benefit and technology available to serve the school's CRC. In 2023 less than ten 'American Made' brands offered a hybrid inverter solution, and of those options none were serving larger commercial markets and rated for voltages as high as 480V.

The SMA Cube inverter product had the largest savings on not needing the expensive optimizers from Solaredge (or other suppliers), and has been rated very high in the field for quality. When the SMA inverter is mounted at the edge of the solar array on a roof, they are certified for rapid shut down compliance, and one of the only inverter products with this specification.

The new USA made Solaredge optimizers (C651) requires one optimizer per panel with each one costing approximately $75. With 862 panels, our optimizer cost alone for this project would be an additional $64,650. Additionally, the release of this Solaredge BABA compliant product was after the design and bid-out of this system and following the school board's approval of the project at the winning bid price. We would be forced to reduce the size of the proposed project, eliminate the battery portion, and eliminate the community-serving resilience center in order to accommodate this increased cost. This would effectively stop the project, as the community is most interested in resilience. Our grant was awarded in April 2024, and we've already extended this project well beyond original expectation. The Solaredge BABA compliant product is a fairly new market entry in 2025 and Solaredge has been having many tech and reliability issues with its large inverters. The contractor (WES), was not willing to sacrifice quality on testing out this new product on a school's resiliency center.

Common Solaredge Reliability Issues:

High Failure Rates: Many users report much higher failure rates for SolarEdge inverters compared to other brands, with units failing in under a year.[1]

Component Failure: Malfunctions are common, including internal component failures, communication card issues that "brick" inverters, and failures of individual power optimizers. [2]

Poor Warranty Service: Customers describe the warranty replacement process as unsatisfactory, involving long hold times for customer service and delays of several weeks for replacements to be completed. SolarEdge frequently sends refurbished inverters as replacements, leading to concerns that the same underlying design flaws persist and will cause future failures. They are not Better Business Bureau accredited, and of 117 reviews, most are negative with an average score of 2.3 out of 5. [3]

Technical Challenges:
Complexity: SolarEdge systems are complex, requiring installers to be highly proficient with the design and operation of the components and their replacements.[4]

Enphase, MidNite Solar and Outback can not serve our technical specifications, as they do not manufacture a 480V inverter option and typically only serve the small residential and off-grid markets.

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1 Monteiro, F. C., Sarquis, E. C., & Branco, P. Economic Impact Analysis of Monitoring Critical Failures in Photovoltaic Systems Based on a Novel Index'Cost of Detection'. *Available at SSRN 4671654*.

2 Beiler, L. (2025, July 17). *SolarEdge Inverter Review 2025*. Paradise Solar Energy. https://www.paradisesolarenergy.com/blog/solaredge-inverter-review#:~:text=SolarEdge%20Inverter%20Cons:%20Our%20Area,we%20continue%20to%20monitor%20closely.

3 Better Business Bureau Website: https://www.bbb.org/us/ca/milpitas/profile/solar-energy-equipment/solaredge-technologies-inc-1216-1532097

4 Peacock, Finn. (2024). Finn's SolarEdge Inverters Review & Verdict. Solar Quotes. https://www.solarquotes.com.au/inverters/solaredge-review.html#:~:text=Particular%20models%20have%20had%20numerous,to%20suffer%20in%20hotter%20climates

5 See Utility Dive, IRA could make US-made lithium-ion battery systems competitive with Chinese alternatives: reports, here: https://www.utilitydive.com/news/ira-could-make-us-made-lithium-ion-battery-systems-competitive-with-chinese-CEA/721505/

6 See Department of Energy Build America, Buy America Act Proposed Project Specific Non-availability Waiver for Distribution System Battery Energy Storage Systems (BESS) and Associated Components, BABA WAV 2025-01, here: https://www.energy.gov/sites/default/files/2024-10/BABA%20WAV%202025-01%20Proposed%20Project%20Specific%20Nonavailability%20Combined%20BESS%20Waiver%20-%204%20projects%2010-8.pdf

The contracted solar installer and electrical contractor (WES Engineering and Pieper Electric), called and emailed with distributors for several months (April 2024-Sept 2024) regarding BABA compliant inverters. We did not find BABA compliant inverters that met our technical specifications. In addition to this stakeholder team's efforts, there were multiple other state, federal, and industry-specific entities that comment that an expansion of the Omnibus waiver that has been offered for American-Made Modules, should be expanded to include inverters and batteries since America has neither the quantities necessary nor the technical robustness needed to support projects coming online through 2027. Here is an insert from the comments submitted by the Boston Housing Authority (BHA) to the U.S. Environmental Protection Agency (EPA) on December 26th, 2024:

"***Inclusion of Batteries and Inverters***

We recommend expanding the scope of the waiver to include batteries and inverters, which are critical components for achieving deployment speed, system functionality, and energy resilience. From a technical perspective, these components are integral to modern solar energy systems. Without access to sufficient domestic supplies of batteries and inverters, the pace of project deployment will be significantly hampered. Additionally, including these components in the 2024 Solar Waiver supports broader program goals related to energy justice, and resilience by ensuring that low-income communities have access to reliable and comprehensive clean energy systems.

As electric power demand is set to expand significantly in the coming decade, batteries are a critical tool to ensure grid reliability and resilience, and maximize solar potential. BABA-compliant batteries, however, are not yet widely available on the market. In the coming years, the BHA anticipates deploying storage systems across its portfolio to enhance energy resiliency, displace existing high-emissions backup generation, and reduce utility costs. Similarly, BABA-compliant inverters are not currently widely available. As you well know, inverters are a necessary component of solar systems.

Utility Dive reported that “U.S.-made lithium-ion battery energy storage systems could compete on price with Chinese-made systems by 2026 as more U.S. production capacity comes online this decade.” [5] This is further supported in project-level waiver requests submitted over time to DOE regarding distribution system battery energy storage systems and associated components, which determined a lack of BABA-compliant products. [6] ”

Also in addition to our team’s solicitation for these projects, another project local to our region (WI) has received a waiver for similar reasons (nonavailability) and for a similar large battery system. This waiver was approved for the performance period of October 2024 to April 2026. Here are some details from that approved waiver:

“Description of Market Research and Justification: The four recipients and subrecipients listed below conducted market research and extensive industry outreach to identify BABA-compliant Distribution System BESS. In some cases, this included issuing requests for proposals, followed by industry outreach to multiple manufacturers. The recipients determined that no manufacturer could provide a BABAcompliant product at the size, type, and voltage required for each of the projects. DOE Technical Project Officers and Building Technologies staff confirmed, through online searches and consultation with industry experts, that there do not appear to be any BABA-compliant Distribution System BESS manufactured in the U.S. that provide the specifications needed for each of the projects.

3. City of Madison, Wisconsin Recipient: Slipstream Group, Inc. (M5PTTWHDPVV3) Total estimated project cost related to infrastructure: $7,840,000 Estimated total cost of products being waived: $435,000 Funding Mechanics: Funding for the infrastructure project is made available through the Connected Communities Funding Opportunity Announcement DE-FOA-0002206. The location of the project is Madison, Wisconsin. The period of performance of this award is 18 months, from October 2024 to April 2026. Purchase of the items is expected by December 2024. Description of Covered Items: This waiver proposes to waive a 430 kWh and a 238 kWh behind-the meter stationary battery and associated electrical components (NAICS 335311).”

Anticipated impact to the project if no waiver is issued.

To our understanding of the stipulations of this grant, our entire award ($416,899.00) will be disqualified if we do not get a waiver for these SMA and Sol-Ark inverters. This effect will be profound in the community, which approved a large referendum under the expectation that a large source of outside funds would be applied to (and support) this project and community resilience effort.

Without access to sufficient domestic supplies of batteries and inverters, the pace of project deployment will be significantly hampered. We would be forced to reduce the size of the proposed project, eliminate the battery portion, and eliminate the community-serving resilience center in order to accommodate this increased cost. This would effectively stop the project, as the community is most interested in resilience.

Solicitation for Comments:

The proposed waiver will be posted on the Lake Mills Area School District's "Facilities Planning" webpage and a notice of the proposed waiver will also be posted to the Made in America website to satisfy the requirement to publish any Build America, Buy America Act Project Waiver and provide the public with fifteen (15) days to submit comments.

This notice is being posted on November 25, 2025, to satisfy the requirement to publish proposed Buy America waivers and provide the public with a reasonable amount of time for notice and comment. The Administration is seeking public and industry comment from all interested parties. Relevant information and comments will help the agency understand completely the facts surrounding the waiver request and the agency's proposal. The notice will close for comments on December 15, 2025. Comments may be sent to tonya.olson@lakemills.k12.wi.us. Please reference the associated waiver title in the subject line of the email. Comments received prior to the public comment closing date will be reviewed and considered by the Administration. The waiver is posted to the following site: https://www.lakemills.k12.wi.us/district/referendum/facilities-referendum-construction