Response to U.S. Department of Energy Request for Information: Grid Resilience and Innovation Partnerships Program

To: US Department of Energy (DOE) Grid Deployment Office (GDO, GDORFI@hq.doe.gov)
From: Karen Wayland, CEO, The GridWise Alliance
Re: Request for Information DE-FOA-0002827
Date: October 14, 2022

On behalf of the members of the GridWise Alliance, I am pleased to submit the following response to the Department of Energy (DOE) Grid Deployment Office (GDO) Request for Information (RFI) (DE-FOA-0002827) regarding DOE's implementation of the grid modernization provisions in the Infrastructure Investment and Jobs Act (IIJA).

The GridWise Alliance is a non-profit organization consisting of leading utilities, rural cooperatives, owners and operators of transmission and distribution grids, manufacturing, engineering companies, and new innovative grid technology companies. This diverse group of industry stakeholders is committed to building a modern 21st century grid that can support decarbonization, empower consumers, reduce costs, and bolster electric reliability and resiliency. GridWise Alliance strongly supported Congress' historic investments in grid modernization under the Infrastructure and Investment and Jobs Act (IIJA).

As the Department of Energy (DOE) implements IIJA programs, it must leverage federal funding to drive additional investment in both the transmission and distribution systems as Congress envisioned. It is worth noting that IIJA funding is an important tool in mitigating the costs on state ratepayers of grid modernization projects, an important priority in providing afforable electricity to US families and businesses. We look forward to working with you and your team as you design these programs and offer the following comments in response to the RFI. Some consistent themes to our comments include:

- Increasing the time for submission of papers and applications;
- Recognizing that for many applicants, "additional" or "supplemental" investments will mean expanded and accelerated deployment of existing grid modernization plans;
- Adjusting some program caps;
- Carefully balancing implementation of Buy America provisions with the urgency of deployment needs; and
- Clarifying the definition of "entity" with respect to utility holding companies vs operating companies.

Category 1: DOE's Proposed Implementation Strategy for GRIP program

1. What actions can DOE take to best achieve the benefits of coordinating applications to all three Grid Resilience and Innovation Partnerships topic areas at the same time?

DOE should prioritize projects that 1) deliver proven resiliency benefits; 2) enable the clean energy transition; and 3) give better control of the grid to its operator. DOE should also encourage entities to submit projects that complement multiple work streams, such as integrating systems and

technology to leverage data analytics and planning tools to efficiently modernize, operate and manage the grid. Projects could also include advanced grid management and demand response tools to better serve customers, manage peak demand for electricity, and optimize the grid to better support the two-way power flows needed to expand distributed resources such as private solar, electric vehicles and battery storage.

DOE may be considering aligning the timing of funding opportunity announcements for better coordination and visibility across the three topic areas. GridWise members applaud DOE's issuance of a combined RFI and FOA for the three programs and welcome as much visibility into upcoming FOAs across programs as is legally possible. Many entities may be planning to submit applications to more than one topic area for different projects, so we ask that the final application deadlines are staggered by at least **two weeks** to allow applicants adequate time to submit comprehensive applications.

2. How should DOE best assess and prioritize applications that further state objectives developed through the Grid Resilience formula grants under BIL section 40101(d), the State Energy Security Plans under BIL section 40108, and activities supported by the State Energy Program under BIL section 40109?

Review of applications should consider how proposals articulate how they can help achieve state goals. DOE should prioritize applications that align project proposals with the State objectives. The same project should not be eligible for both state allocated funds and DOE funds (double-dipping). Both State and DOE objectives should be clearly defined with measurable success criteria metrics that will be delivered in the project to receive the funding. DOE should provide a public resource that provides updates on state programs, including application criteria and timing of funding.

3. How can funding from the GRIP program best overcome challenges impeding the development of transmission, grid solutions, and interconnecting new generation and storage to improve grid resilience and reliability?

One of the greatest barriers to grid modernization is the disparity in timing between the urgency of deploying new technologies across the nation's transmission and distribution system to meet reliability, resilience and decarbonization goals and the fundamental need to keep electricity affordable for all consumers. GRIP funding will help relieve the burden on ratepayers for the grid investments that are essential to meet the nation's objectives. It will also allow utilities to increase the pace and scale of this critical work and enable additional investments that would not otherwise be possible.

Funding should also prioritize the addition of new sensors, technologies, and insights at the grid edge. Without real-time insights to distribution system endpoints, DER integration may fall flat without full integration with this intelligence. Funding should be allocated in part to analytics, load disaggregation, voltage monitoring, and new customer- and grid-side applications that bridge the gap between grid and consumer data.

The biggest issue impeding development of transmission, grid solutions, and interconnecting

new generation and storage to improve grid resilience and reliability is that the regulatory incentives are not aligned to the desired outcomes of regulated utilities. We all understand the Investor-Owned Utility (IOU) earnings have been based on invested capital rate-base. GRIP programs can help utilities achieve program objectives but will diminish their earnings potential by the grant amount and potentially also through funding of projects that reduce demand, leverage customer-owned behind-the-meter Distributed Energy Resources (DER – include EV charging), cloud service solutions, or other non-wires alternative solutions Similar issues with GRIP related non-wires alternative (NWA) solutions (particularly end-use customer DER/EV/DR programs). While DOE cannot and should not support any single regulatory solution at the state level, it should provide educational resources for state regulators to explore how performance-based financial earnings incentives for utilities may achieve improved grid resilience and reliability.

2. What approaches can be used to both solicit and evaluate proposals for high-value deployment projects with additionality (i.e., where additional funding will overcome existing obstacles that would otherwise result in the project not being built)?

Utilities plan investments in grid infrastructure in multi-year intervals–a 5-year planning horizon is standard. A project under construction in a given year has been in the planning process (engineering, financing, PUC or governing board approval, permitting, operations, procurement, etc.) for several years prior to construction. In most circumstances, IIJA funding for grid projects in 2022 and 2023 will ***"expand or accelerate"*** grid modernization projects that utilities are already planning. For example, IIJA funding could allow applicants to expand the number of customers included in planned grid modernization projects or reduce the timeline of planned grid upgrades. This approach to "additionality" will increase the benefits realized to consumers and reduce costs, while supporting decarbonization efforts.

3. Any comment on the overall solicitation process, structure, prioritization, requirements, and assessment criteria presented in the draft FOA..

GridWise Alliance members are concerned that the timing for the 2022-2023 funding opportunities presents a significant hurdle for many entities interested in applying for the funds. The FOA proposes a 45-day period to develop concept papers, and a 30-day period to submit a full application if requested by the DOE. The GridWise Alliance commends DOE for bifurcating the application process by asking that a concept paper be submitted for DOE comment prior to full application submission. Nonetheless, the application preparation process remains complex; moving too quickly could reduce the scope and efficacy of final grants awarded. Given the Administration's desire that the projects include significant coordination and partnership across government entities and other stakeholders, the timelines preclude comprehensive input and review by all parties. More specifically, the timing of this year's FOA process across November, December and January intersects with cultural and religious holidays that will affect eligible entities' capacity to mobilize the staff necessary to craft quality applications.

Our members' significant experience submitting applications for Smart Grid Investment Grants (SGIG) through the American Recovery and Reinvestment Act (ARRA) of 2009 suggests that 45 days is not adequate for the filing of a complete application after concept paper feedback is

received from DOE. To meet this timeline, each applicant will effectively begin the preparation of every application immediately upon submission of each concept paper and will have invested significant resources into application preparations even on applications that may ultimately be pulled from submission due to concept paper feedback received.

The GridWise Alliance recommends a minimum of 45-60 days for the development of the concept paper and at least 90-120 days for the development of the full application. Since many of the same internal company resources could potentially be working on three different applications at the same time, GridWise recommends staggering application deadlines by two weeks.

Given the short timing for the FY 2022-2023 funding cycle with award notifications expected in the April-May 2023 timeframe, GridWise recommends that DOE consider prioritizing funding for grid projects in 2022 and 2023 that **"expand or accelerate"** grid modernization.

4. Are existing or expected supply chain concerns anticipated to delay or impact development of potential applications or project implementation, if awarded? What might be some of the potential barriers to timely delivery and how can DOE support the timely delivery of projects?

GridWise Alliance members anticipate supply chain constraints around certain grid equipment. For example, the current lead time for procuring transformers before next year's hurricane season is 115 weeks. GridWise members are also encountering supply chain delays in working stock (i.e., nuts and bolts) and semiconductors, with a 6+ week lead time for distribution projects. Other key utility, poles, wires, and switchgear have on-going supply chain issues. Non-wires alternatives and customer programs could be prioritized to reduce some of these supply chain issues.

Creating a domestic supply of grid components may help to alleviate some of these supply chain issues. However, developing the manufacturing capacity for a domestic supply chain for grid components is a long-term objective that will not alleviate supply chain constraints in the first several years of IIJA funding. Therefore, the DOE should carefully balance the urgency of deploying technologies to support decarbonization, resilience and security against requirements for domestic content. In the near-term, DOE may consider expanding the Buy America provisions to include the U.S. - Mexico - Canada Agreement (USMCA) for GRIP programs.

DOE may consider whether it is appropriate to encourage projects to take advantage of cloud computing technologies to reduce the reliance on hardware-heavy on-premise solutions in the event of future or prolonged supply chain issues. Perhaps even more important, cloud computing holds the promise to reduce the impact of workforce disruptions. The pandemic highlighted how susceptible our workforce is to global health crises. Investing in cloud architecture holds the promise of improving worker health and safety and greater ease of navigating crises where on-site access may be severely limited or complicated.

5. DOE proposes to open the first application cycle for the GRIP program in fall 2022 for 45 days for applicants to submit concept papers, that the Department will then down select to recommend submission of full applications in winter 2023, targeting award selections announced in spring 2023.

a. Any comments on this proposed timing?

GridWise Alliance members are concerned that the timing for the 2022-2023 funding opportunities presents a significant hurdle for many entities interested in applying for the funds. The FOA proposes a 45-day period to develop concept papers, and a 30-day period to submit a full application if requested by the DOE. The GridWise Alliance recommends a minimum of 45-60 days for the development of the concept paper and at least 90-120 days for the development of the full application. Since many of the same internal company resources could potentially be working on three different applications at the same time, GridWise recommends staggering application deadlines by two weeks.

b. Are there inter-state inter-regional projects, as described in this RFI, that are sufficiently advanced in development to be ready to apply by this timeline in fall 2022?

One option is to expand or build upon existing projects with large multi-state utility holding companies and operating companies, without diminishing consideration for individual utility projects, some of which may contemplate partnering with others to achieve inter-regional projects For example, expanding successful ADMS projects to include enterprise DERMS (*operations, devices, customer programs, markets, analytics – e.g. M&V/settlements, field service, etc.*) to further support these objectives and include new requirements such as FERC Order 2222 supporting customer-owned DER market operations.

Category 2: DOE Proposed Implementation for Grid Resilience Grants (40101(c))

1. -How should DOE define community and assess "greatest community benefit in reducing the likelihood and consequences of disruptive events" for prioritization of applications?

"Greatest community benefit" should be evaluated based on the magnitude of the impacts and the frequency of the occurrence of major disruptive events. GridWise Alliance recommends "community" definition not be restricted to "legally" recognized boundaries, but instead, take a more functional approach, defining "community" by the nature and scope of the vulnerabilities and risks, needs and requirements of juxtaposed areas, especially those areas with interdependencies. The community could be a city, town, geographic area (within a town, city, county), housing subdivision, or similar areas served by a part of the electric distribution network (substation, feeder, lateral, etc).

Metrics for tracking community benefits would traditionally be defined in IEEE 1366: *Guide for Electric Power Distribution Reliability Indices* (e.g. SAIDI, SAIFI, CAIDI, MAIFI) but in this case, the customer measure would be only customers impacted in the defined community divided by all the customers served within that defined community. Further community value of financial impacts can be calculated based on actual financial loss resulting from the loss of service (e.g. home-based employees not able to work, or commercial/small manufacturing shop disruption). Therefore, the highest value projects would demonstrate the largest improvement per customer project life-cycle cost.

2. What other relevant entities should the Secretary consider as eligible entities?

Some large utility holding companies have multi-state footprints and wish to deploy grid resilience technologies across all of their operating companies. Each operating company may have different systems and different regulatory regimes, however a coordinated grid modernization plan across multiple jurisdictions would significantly improve regional resilience, a key objection of IIJA. DOE should clarify the term "entity" and how to leverage IIJA funding across several states where individual operating companies may be the applicant, but the holding company may be overseeing a multi-state strategy for grid modernization that meets the broader goals of IIJA.

Most electricity consumers cannot choose their transmission or distribution service provider or the ownership model under which that provider operates. As a result, a too narrow definition of 'entity' could inadvertently penalize some consumers for factors beyond their control. For instance, if a single corporation holds numerous operating companies within a given state, each of those operating companies should be deemed an independent entity so that the customers of each operating company are equally able to benefit from the potential submission of an application. This would not be the case if 'entity' was defined at the holding company level forcing a choice between the operating companies the holding company may own in the same state. Similarly, if an operating company has utilities in multiple jurisdictions, that operating company should be able to submit an application for each of its jurisdictions. Finally, in recognition of the operational and financial efficiencies that could be gained by the execution of a single program by a holding company across its various operating companies, a holding company should be deemed as an entity onto itself.

GridWise suggests that 'entity' be defined to allow for an application into each program by a holding company, by each of its operating companies, and by an operating company for each jurisdiction in which it operates. The GridWise Alliance also recommends that DOE includes public-private partnerships (P3s), or a clarification that states/tribes can work with P3 entities to deploy grid edge technologies. States developing plans for 40101(d) funding are submitting resiliency plans that specify they would like to work with private sector entities and take advantage of cost share/other benefits as well.

3. Are there additional burdens or challenges faced by small utilities as defined by the statute that should be taken into consideration for the design of this program?

The federal grant writing process is designed to ensure that taxpayer dollars fund viable projects run by competent, financially solvent entities and can deliver quantifiable and replicable results. A credible process for evaluating the technological and financial merits and community impacts of any proposal is essential for maintaining the public trust in federal funding of such projects. However, the necessity of rigorous documentation and reporting creates costs and burdens that may be insurmountable to smaller utilities absent federal assistance. The technical assistance from the Department of Energy as provided in IIJA may not be sufficient to reach all eligible entities, especially since DOE will have strict ex partie limitations on how it communicates with potential applicants after solicitations are released. DOE must consider how it can make available to the entities eligible for the small- and medium-utility/community carve-outs the resources necessary to develop competitive grant applications.

4. What information could be provided by applicants to ensure proposals are supplemental to

existing or already planned hardening efforts?

Grid modernization is essential for enhancing reliability, resilience and security and to support beneficial electrification, but there is limited capacity to pass the costs of these projects onto customers. The IIJA GRIP funding will allow more of this critical work to get done - increasing both the pace and scale of the work and more projects get completed.

Much of the work that must be done to modernize and improve the resilience of the grid is already well understood. Some of this work may, in fact, already be planned or underway. IIJA grants have the capacity to not only accelerate the operationalizing of innovative new technologies and approaches but also to drive transformation by expanding and accelerating the reach of existing technologies and approaches while maintaining affordability for consumers. Selecting project eligibility criteria that value established as well as nascent technologies and new as well as expanded or accelerated work will be essential to ensuring IIJA truly drives not only transformative but also replicable investments. Equally important will be setting project criteria that can exploit the synergies between technologies, the inter-workings between existing and new innovative technologies, as well as criteria that can unlock strategies, in connection with modernizing and enhancing the resilience of the grid, that can evolve and shape a dynamic grid.

Many applications will likely propose foundational but transformative investments that could be accelerated or expanded under the GRIP framework. For instance, many utilities have programs in place for selective undergrounding, substation hardening, and cable replacement that will deliver improved reliability to the most vulnerable areas of the system. These are expensive programs, but they deliver known and valuable benefits. Expanding these and similar foundational investment programs to the next tier of climate-stressed system areas would be an expansion of a current project with significant resilience benefits. Similarly, accelerating the rollout of distribution automation, energy service interfaces, meter to customer device/energy management systems intelligent interconnectivity and communications, smart reclosers and switch controls, and automatic sectionalization and autonomous systems islanding would offer significant resilience and grid flexibility benefits.

Consumers are under considerable pressure with rising costs and economic uncertainties. IIJA has the potential to reduce the pressure of the clean energy transition on consumers by reducing the financial burden of the utility work needed. Restricting awards to ‘supplemental’ programs that then require a cost match from utilities will place further pressure on consumers as this cost match will eventually appear on customer bills. By coupling IIJA funding for innovative ‘new’ programs with funding to accelerate or expand already envisioned or planned foundational utility work, DOE can not only catalyze change but also reduce economic pressures on consumers.

5. What evaluation criteria, and what accompanying evidence, should DOE seek to best achieve the goals of this program as laid out in the FOA?

As discussed above, evaluation criteria should include success metrics as well as historical metrics to track on-going improvement from past-history and provide economic improvement benefits. This would include delivered reliability improvement and further community value of financial impact resulting improvement because of the project.

6. Is the proposed $100 million Federal funds cap per award appropriate? What actions can DOE take to optimize the overall portfolio supported by 40101(c) through the mobilization of other funds?

Improving the reliability and resilience of the grid is critical work that every grid owner and operator is undertaking. These are often large, complex projects with multi-million dollar costs. The $100 million proposed cap is appropriate for the scale of the grid resilience projects that could be implemented with this funding. **However, DOE should consider applications for grants in the range of $50 - $100 million to allow for funding more than 10 projects with each FOA**. Coupled with utilities' own investments, the IIJA funding can expand and accelerate grid modernization across a broader geography, creating benefits for more consumers and supporting greater decarbonization and resilience.

7. Is the proposed information to be contained in the *Report on Resilience Investments* appropriate to determine if proposed projects are supplemental to existing efforts? What challenges may be faced in developing the report? What additional DOE guidance would aid in development of the report?

The proposed report on resilience investments will provide DOE with a good understanding of an applicant's commitment and experience in implementing grid resiliency solutions. We support the requirement for reports to include a three-year historic view of an entity's resilience investments. However, given the complexities in how energy providers plan their future work and seek approval from state regulators, **GridWise proposes a one-year future looking requirement rather than three.** This would be more representative of how energy companies secure funding for resilience projects in their long-term infrastructure planning.

The GridWise Alliance supports DOE's goal that the IIJA funding be the catalyst for transformational change across the nation's electricity network. Grid modernization for resilience, reliability and decarbonization is occurring in a patchwork fashion across the country because of a variety of reasons, including regulatory environments, economic conditions, consumer demands, and historical equipment legacies. What is transformational for a large utility that already has advanced communication networks may look very different for a small utility that has not yet been able to deploy basic SCADA systems. Therefore, DOE should consider the equity issues associated with using evaluation criteria that would inordinately weight an applicant's previous resilience investments.

Currently, DOE has only announced one webinar on how to compile a Report on Resilience Investments. GridWise members would appreciate other opportunities to learn more about expectations for the report, including a suggested outline or template for the report.

8. What data should be required to be tracked by awardees for the duration of the project and/or after project completion to assess "the extent to which the ability of the power grid to withstand disruptive events has increased" and to inform the biennial Report to Congress?

a. How long after project completion should data be tracked to fully understand the impacts of project funding beyond the biennial report?

The benefits of grid modernization projects will continue for many years after construction is completed, therefore understanding how those long-term benefits accrue to consumers, the economy, and to decarbonization efforts is critical for informing federal funding of these projects. However, it may be difficult for individual grant recipients to gather data that speaks to these longer-term benefits or excessively burdensome to collect some data beyond the performance period of the grant. Therefore, GridWise recommends that DOE develop a process and metrics to track the 5- or 10-year impacts of IIJA funding, rather than asking grant applicants to collect additional data beyond the information already submitted to EIA on an annual or semi-annual basis or submitted during a grant's performance period.

b. What data should be tracked to understand changes in community resilience?

As described above, IEEE 1366 reliability metrics and data on resulting economic improvement to the affected community will provide insights into the impacts of resilience investments.

9. Information or analysis that could be submitted to help identify the highest impact projects and proposals that address (1) public benefit (e.g., cost/benefit of the project), (2) additionality (e.g., obstacles that additional funding would allow the project to overcome or would otherwise prevent the project from advancing in the absence of the funding), (3) stakeholder support (e.g., projects where a regional planning process is underway or is taking place), and (4) transformative potential of the project (e.g., the value of the project in catalyzing follow-on replication).

10. Any comment on the selection criteria specifics, relative weighting, and capacity for applicants to meet the criteria under this program.

The GridWise Alliance supports DOE's goal that the IIJA funding be the catalyst for transformational change across the nation's electricity network. Grid modernization for resilience, reliability and decarbonization is occurring in a patchwork fashion across the country because of a variety of reasons, including regulatory environments, economic conditions, consumer demands, and historical equipment legacies. For example, what is transformational for a large utility that already has advanced communication networks may look very different for a small utility that has not yet been able to deploy basic SCADA systems. Therefore, DOE should consider the equity issues associated with using evaluation criteria that would inordinately weight an applicant's previous resilience investments.

11. Any comment on the proposing staging and timing of the application, evaluation, and award process (including both Concept Paper and Full Application Stages), and on the requested performance period.

The GridWise Alliance recommends a minimum of 45-60 days for the development of the concept paper and at least 90-120 days for the development of the full application. Since many of the same internal company resources could potentially be working on three different applications at the same time, GridWise recommends staggering application deadlines by two weeks.

12. Any comment on the specific proposed application and information submission requirements.

Submitting applications is a time- and resource-intensive process, and it will be difficult to smaller applicants or those who have not previously responded to prior FOA's to pull together all the requirements within the timeframes. Past award winners may have an inherent advantage, so DOE may consider how to provide additional support to help first-time applicants.

Category 3: DOE Proposed Implementation for Smart Grid Grants (40107)

1. Appropriateness of highlighted grid flexibility functions and technologies of interest identified by DOE above. Are there additional smart grid functionalities or technologies that would support grid reliability and resilience that should be considered?

The GridWise Alliance supports the grid flexibility functions described above and urges DOE to fund projects that will deploy a suite of integrated technologies. The GridWise Alliance recommends that DOE support grant applications that enhance equity, affordability, and smart grid functionality and not exclude any currently available grid technologies from its program specifications.

Grid modernization is occurring in a patchwork fashion across the country,[1] so the transformational investments envisioned by IIJA will look different depending on conditions in each state and utility service territory. While some utilities are deploying sophisticated broadband communications networks across their grid, others lack Supervisory Control and Data Acquisition (SCADA) systems. The best example of that patchwork nature is the distribution of Advanced Metering Infrastructure (AMI) across states.

A basic building block of a modern grid, AMI provides the mechanism for two-way electricity flow and communication on the distribution system. AMI gives utilities greater visibility and control of grid conditions, allowing for faster power restoration and enabling demand response. Customers can access timely data on their power consumption and take advantage of time-of-use pricing to plan their consumption. AMI meters are also essential for enabling many energy efficiency programs and technologies. Yet less than 61% of customers across all classes (residential, commercial, and industrial) are connected to the grid with AMI. The regional differences in AMI deployment are stark: whereas 75% of residential customers have AMI in some southwestern states, only 22% of customers in New England have AMI. Furthermore, these statistics include AMI that range from basic hourly internal meters that provide data at least once a day to real-time meters with built-in two-way communication that can transmit instantaneous data.[2] Current AMI with distributed intelligence represents a technological quantum leap from the AMI that was funded a dozen years ago with ARRA investments.

The equity issues of this disparity in AMI deployment are significant. Customers without AMI suffer longer power outages, lack information to reduce their energy burden, and cannot receive pricing signals from the utility. Without modern AMI, customers will not be able to participate in the emerging markets for aggregated Distributed Energy Resources (DERs) envisioned by FERC Order 2222. In Section 40103 of IIJA, Congress expanded the definition of smart grid

[1] The GridWise Alliance's Grid Modernization Index (GMI) uses data inputs and publicly-available information to evaluate and rank the status of grid modernization efforts across all 50 states and the District of Columbia.
[2] https://www.eia.gov/tools/faqs/faq.php?id=108&t=3

functionalities, all of which will require the deployment of a suite of technology solutions. In some cases, utility grid modernization plans will include AMI deployment in concert with other smart grid technologies. **The GridWise Alliance recommends that DOE support grant applications that enhance equity, affordability, and smart grid functionality and not exclude any currently available grid technologies from its program specifications.**

2. Information or analysis that could be submitted to help identify the highest impact solutions and proposals that address (1) greatest public benefit (e.g., cost/benefit of the project), (2) additionality (e.g., obstacles that the Federal funding would allow the project to overcome that would otherwise prevent the project from advancing in the absence of the Federal funding), and (3) transformative potential of the project, (e.g., the value of the project in catalyzing follow-on replication)

Utilities plan investments in grid infrastructure in multi-year intervals–a 5-year planning horizon is standard. A project under construction in a given year has been in the planning process (engineering, financing, PUC or governing board approval, permitting, operations, procurement, etc.) for several years prior to construction. In most circumstances, IIJA funding for grid projects in 2022 and 2023 will ***"expand or accelerate"*** grid modernization projects that utilities are already planning. For example, IIJA funding could allow applicants to expand the number of customers included in planned grid modernization projects or reduce the timeline of planned grid upgrades. This approach to "additionality" will increase the benefits realized to consumers and reduce costs, while supporting decarbonization efforts.

DOE might consider evaluating specific cost/benefit and economic impact analysis on a per capita basis for affected communities to also include engagement, quality jobs, DEIA, and Justice40. The community could be a city, town, geographic area (within a town, city, county), housing subdivision, or similar areas served by a part of the electric distribution network (substation, feeder, lateral, etc). The metrics would traditionally be defined in IEEE 1366: *Guide for Electric Power Distribution Reliability Indices* (e.g. SAIDI, SAIFI, CAIDI, MAIFI) but in this case, the customer measure would be only customers impacted in the defined community divided by all the customers served within that defined community. Further community value of financial impacts can be calculated based on actual financial loss resulting from the loss of service (e.g. home-based employees not able to work, or commercial/small manufacturing shop disruption). Therefore, the highest value projects would demonstrate the largest improvement per customer project life-cycle cost.

3. In the collective portfolio of awarded projects, any suggestions regarding project types that have special strategic importance?

The GridWise Alliance recommends that DOE prioritize the following types of projects for SGIG funding:

- Increased utility delivered hosting capacity/headroom for renewable energy integration;
- Utility communications systems to allow for managed charging and other consumer functionalities;
- DERMS to allow for DER optimization and facilitate aggregated DER access to wholesale

markets;
- Next-generation AMI with consumer- and grid-side applications as needed; and
- Technology applied to existing transmission to improve efficiency and capacity.

The ARRA SGIG funded projects with a matching grant of up to $200 million, for a total possible project cost of $400 million. This scale is in line with projects that are intended to provide broad smart grid functionality across a network. These may be very expensive projects, and the $30 million/project cap, which would leverage an additional $30 million in private capital (or less in the case of smaller utilities) may not be enough to support large grid modernization projects to support the types of projects described above. The GridWise Alliance recommends raising the cap to the range of $100-$200 million and scaling the size of the grant aware in relation to the proposed scale of deployment, impact to the grid, and benefit to communities.

4. Appropriateness of the requirement for a cybersecurity plan for this provision, and the required contents of such a cybersecurity plan.

Because of the critical nature of the grid operational systems and the large number of customer-owned beyond-the-meter DER that could be participating as both an energy market and grid-side resource, cybersecurity plans will be critical. The relevance and depth of cybersecurity plans/approaches will vary significantly depending on the technology approach, partnerships, and solution maturity provided. GridWise Alliance recommends that if any minimum filing requirements are submitted related to cyber plans that they be brief to allow diverse applications. Given the security issues associated with cybersecurity planning, GridWise Alliance seeks clarity on how to seek assistance from DOE in evaluating the cybersecurity plan for a given component and when and how to incorporate the plan as a part of the application.

5. Any comment on the selection criteria specifics, relative weighting, and capacity for applicants to meet the criteria under this program.

The GridWise Alliance supports DOE's goal that the IIJA funding be the catalyst for transformational change across the nation's electricity network. Grid modernization for resilience, reliability and decarbonization is occurring in a patchwork fashion across the country because of a variety of reasons, including regulatory environments, economic conditions, consumer demands, and historical equipment legacies. For example, what is transformational for a large utility that already has advanced communication networks may look very different for a small utility that has not yet been able to deploy basic SCADA systems. Therefore, DOE should consider the equity issues associated with using evaluation criteria that would inordinately weight an applicant's previous resilience investments.

6. Any comment on the proposing staging and timing of the application, evaluation, and award process (including both Concept Paper and Full Application Stages), and on the requested performance period.

GridWise Alliance members are concerned that the timing for the 2022-2023 funding opportunities presents a significant hurdle for many entities interested in applying for the funds. The FOA proposes a 45-day period to develop concept papers, and a 30-day period to submit a full

application if requested by the DOE. The GridWise Alliance recommends a minimum of 45-60 days for the development of the concept paper and at least 90-120 days for the development of the full application. Since many of the same internal company resources could potentially be working on three different applications at the same time, GridWise recommends staggering application deadlines by two weeks.

7. Any comment on the specific proposed application and information submission requirements.

Submitting applications is a time- and resource-intensive process, and it will be difficult to smaller applicants or those who have not previously responded to prior FOA's to pull together all the requirements within the timeframes. Past award winners may have an inherent advantage, so DOE may consider how to provide additional support to help first-time applicants.

Category 4: DOE Proposed Implementation for Grid Innovation Program(40103(b))

1. How should DOE define and evaluate a full range of "innovative approaches" to transmission and distribution projects that deploy large-scale, high-value projects that are innovative in scope; scale; stakeholder engagement; technology; partnership or business model; financial arrangement; use of innovative planning, modeling, or cost allocation approaches; environmental siting or permitting strategies; or in overcoming other existing barriers to project development and deployment in ways that enhance reliability and resilience and unlock new renewable generation?

DOE should define "innovative projects" as novel cost-effective approaches that best meet the primary objectives of the Program. Evaluation should prioritize benefits to cost analysis on communities and end-use customers impacted by the innovation project and consider technology risk as part of the evaluation. New cost-effective grid edge non-wires alternatives should be a priority in this evaluation to enable more beyond-the-meter customer technologies as both a supply side and grid-side resource. As these novel grid-edge technologies could become building standards to enable a more sustainable energy future.

2. What technical review criteria, and what accompanying evidence, should DOE seek to best achieve the goals of this program as laid out in the FOA?

Review criteria should consider how to commercialize innovation and fully evaluates the risks and rewards to local communities and end-use customers compared with traditional Generation, Transmission, and Distribution engineering and construction standards. The benefits and costs could be evaluated on a per capita basis for the local communities impacted.

3. Information or analysis that could be submitted to help identify the highest impact projects and proposals that address (1) greatest public benefit (e.g., cost/benefit of the project), (2) additionality (e.g., obstacles that the Federal funding would allow the project to overcome that would otherwise prevent the project from advancing in the absence of the Federal funding), (3) stakeholder support (e.g., projects where a regional planning process is underway or is taking

place), and (4) transformative potential of the project (e.g., the value of the project unlocking resilience and reliability benefits from investments elsewhere on the grid).

Analysis could include specific cost/benefit and economic impact analysis on a per capita basis for affected communities to also include engagement, quality jobs, DEIA, and Justice40. The community could be a city, town, geographic area (within a town, city, county), housing subdivision, or similar areas served by a part of the electric distribution network (substation, feeder, lateral, etc). The metrics would traditionally be defined in IEEE 1366: *Guide for Electric Power Distribution Reliability Indices* (e.g. SAIDI, SAIFI, CAIDI, MAIFI) but in this case, the customer measure would be only customers impacted in the defined community divided by all the customers served within that defined community. Further community value of financial impacts can be calculated based on actual financial loss resulting from the loss of service (e.g. home-based employees not able to work, or commercial/small manufacturing shop disruption). Therefore, the highest value projects would demonstrate the largest improvement per customer project life-cycle cost.

The biggest obstacles that the Federal funding would allow the project to overcome would be how increased rates from similar utility-only funded projects might negatively impact disadvantaged utility customers and communities. This should be part of the business case for states to participate jointly in these programs, to not only delver the solution but also provides utility performance incentives as part of the DOE and state cost-justification. Thus, grid resilience and reliability benefits are truly shared with customers, community, and the utility who will provide it.

If there is any regional planning process underway or is taking place in the project region, applicants should include how the proposed project will also support those objectives and include letters of support from the regional planning organization. Once a few projects establish actual on-going benefits, these projects can be replicated and perhaps become of community planning and development standards.

4. What are best practices and processes for states, public utility commissions, Tribes, and other eligible entities to obtain input and engage in coordination with regional planning organizations, electricity utilities, and other stakeholders in developing and submitting proposals?

In recent years, GridWise has observed a number of successful stakeholder engagement processes around grid modernization proposals at the state PUC level and also at the RTO/ISO level in development of 20-30 year roadmaps for the bulk power system. We would welcome the opportunity to discuss our members' observations with the DOE.

5. This draft FOA will make up to $2 billion available for this first award cycle under BIL section 40103(b). Any comment on whether any specific projects or types of large transformative projects might not be viable within the current FOA total of $2 billion, but could be viable if additional funding were made available and/or if the maximum award size were increased *(see question #6 below on maximum award size).*

The GridWise Alliance strongly supports IIJA funding for grid modernization projects across the transmission and distribution system, including the construction of new transmission capacity. . Funding under Section 40103b is intended for large interregional transmission projects that would not be built, but for IIJA funding. This funding would promote projects that will allow states to make a large multi-state regional impact. However, there are novel grid-edge technologies that are ready to scale to provide enhanced resilience at the distribution level and when aggregated, to the bulk power system as envisioned by FERC Order 2222. Therefore, DOE should also consider funding projects that demonstrate innovative beyond-the-meter customer technologies as both a supply-side and grid-side resource these novel grid-edge technologies.

6. Appropriateness of the proposed range of $50 million to $250 million for Federal investment; as well as the provision allowing an increased maximum award of up to $1 billion for an application submitted by a coalition of multiple states for interregional transmission projects.

a. What actions can DOE take to optimize the overall portfolio supported by 40103(b) through the mobilization of other funds? Does such a scale of investment support the right scale of project to achieve transformative impact?

The GridWise Alliance strongly supports IIJA funding for grid modernization projects across the transmission and distribution system, including the construction of new transmission capacity. Funding under Section 40103b is intended for large interregional transmission projects that would not be built, but for IIJA funding. This funding would promote projects that will allow states to make a large multi-state regional impact. However, there are novel grid-edge technologies that are ready to scale to provide enhanced resilience at the distribution level and when aggregated, to the bulk power system as envisioned by FERC Order 2222. Therefore, DOE should also consider funding projects that demonstrate innovative beyond-the-meter customer technologies as both a supply-side and grid-side resource these novel grid-edge technologies. The proposed funding levels would allow projects of both types to proceed.

b. Are there any impactful projects that may not be sufficiently supported with these minimum and maximum award sizes but that would provide significant public benefits, consistent with the statute, by cost-effectively 1) increasing transfer capacity between regions, 2) addressing the most consequential system needs and challenges related to interconnection queue times, and 3) increasing access to geographically and technologically diverse energy resources to enhance energy affordability, resource adequacy, and resilience? What are examples of these projects that would not be viable, and what maximum / minimum award size would accommodate these projects?

See above.

7. In the collective portfolio of awarded projects, any suggestions regarding project types that have special strategic importance? Should the program prioritize inter-regional multi-state

or other types of projects that may be more transformative and provide multiple benefits on a large scale?

GridWise Alliance recommends funding resilience demonstration projects at both the Transmission and Distribution levels. At the Distribution System level, demand flexibility demonstrations should be identified as the kinds of projects to be supported to cost-effectively access distributed resources when and how needed to address the increasing frequency and impacts of climate change events in support of strengthening the resilience of the grid. Funding should prioritize:

- Interregional transmission projects that promote capacity transfers of clean energy for reliability and flexibility
- Investment and strategies that accelerate interconnection of offshore wind
- Long-duration energy storage
- Non-wire alternatives for reliability
- Microgrids for resilience and reliability

8. Appropriateness of the requirement for a cybersecurity plan for this provision, and the required contents of such a cybersecurity plan.

Because of the critical nature of the grid operational systems and the large number of customer-owned beyond-the-meter DER that could be participating as both an energy market and grid-side resource, cybersecurity plans will be critical. The relevance and depth of cybersecurity plans/approaches will vary significantly depending on the technology approach, partnerships, and solution maturity provided. GridWise Alliance recommends that if any minimum filing requirements are submitted related to cyber plans that they be brief to allow diverse applications. Given the security issues associated with cybersecurity planning, GridWise Alliance seeks clarity on how to seek assistance from DOE in evaluating the cybersecurity plan for a given component and when and how to incorporate the plan as a part of the application.

9. Any comments on the selection criteria specifics, relative weighting, and capacity for applicants to meet the criteria under this program.

Grid modernization for resilience, reliability and decarbonization is occurring in a patchwork fashion across the country because of a variety of reasons, including regulatory environments, economic conditions, consumer demands, and historical equipment legacies. What is transformational for a large utility that already has advanced communication networks may look very different for a small utility that has not yet been able to deploy basic SCADA systems. Therefore, DOE should consider the equity issues associated with using evaluation criteria that would inordinately weight an applicant's previous resilience investments.

10. Any comments on the proposing staging and timing of the application, evaluation, and award process (including both Concept Paper and Full Application Stages) to accommodate the most impactful types of deployment projects at various stages of development.

GridWise Alliance members are concerned that the timing for the 2022-2023 funding opportunities

presents a significant hurdle for many entities interested in applying for the funds. The FOA proposes a 45-day period to develop concept papers, and a 30-day period to submit a full application if requested by the DOE. The GridWise Alliance recommends a minimum of 45-60 days for the development of the concept paper and at least 90-120 days for the development of the full application. Since many of the same internal company resources could potentially be working on three different applications at the same time, GridWise recommends staggering application deadlines by two weeks.

11. Any comments on the requested performance period, considering that potential projects will be different stages of development and readiness

DOE may consider different performance periods for different types of projects, depending on technology maturity, scale, expected construction completion and time to operation, and other factors. Some projects may take a year or more to complete and require another several years of validation, while others may be quickly established and require a shorter validation period.

12. Any comments on the specific proposed application and information submission requirements

Submitting applications is a time- and resource-intensive process, and it will be difficult to smaller applicants or those who have not previously responded to prior FOA's to pull together all the requirements within the timeframes. Past award winners may have an inherent advantage, so DOE may consider how to provide additional support to help first-time applicants.

The GridWise Alliance proposes the following recommendations to reduce the burden on first-time applicants:

1. Streamline the concept papers so that several can be submitted and DOE selects which programs of GRIP can be utilized for those that are downselected (clarification on multiple concept papers allowed for submission);
2. Allow vendors to help and submit concept papers to help states, etc. as they will need support for a very detailed applicant. Grantwriters that are hired can help entities draft concept papers; and
3. Standardize concept paper application so that it is shorter than 3 pages and is a form/government link or something that allows easy replication.

13. Appropriateness of the use of a minimum 50% non-Federal cost share for the proposed project. Should DOE establish a different minimum non-Federal cost share? Should DOE express a preference for projects with a higher non-Federal cost share than the statutory minimum?

a. To what degree should DOE include in the Technical Review Criteria and Policy Program Factors an assessment of applicant's ability to provide sufficient information to show that minimal federal cost-share is being requested, so that GRIP program dollars are 1) only providing the amount of additional capital needed to advance project development and 2) unlocking the greatest possible public benefits relative to the amount of federal investment. What types of

application information should be requested to indicate that minimal federal cost-share is being requested?

The 50% cost-share is appropriate to demonstrate equal investment commitment to the project success by the other participants, communities, and end-use customers who most benefit from the project.

14. DOE is interested in supporting highly impactful projects that can deliver significant public benefit and acknowledges that some of these projects may be earlier in the planning or development stages. DOE is considering an option to offer grants of up to $20 million for planning and development activities for concept papers submitted by a coalition of multiple states for projects that are interregional (i.e., cross multiple ISOs, grid operators, or other balancing authorities) and/or a product of an interregional planning process – assuming the concept paper shows promise in the ability to deliver significant public benefit, but has a project that is not sufficiently mature enough to submit a Full Application. Please provide comment on this approach, the maximum planning and development grant size, what factors to consider in offering these types of grants, and any other additional considerations.

The GridWise Alliance recognizes that successful applications will include detailed technical specifications and require extensive collaboration with stakeholders. The eligible entities for this funding stream may not have the relevant technical expertise and may have limited budgets, so GridWise supports the concept of providing resources to potential applicants to help develop materials to inform the concept papers.

Category 5: Community Benefits, Justice40, Quality Jobs, and Performance Metrics

2. How can DOE best support the creation and retention of high-quality jobs, and the clear workforce training pathways into those jobs, through the GRIP program?

Collaboration with universities, local-community colleges, and tradeshools to support the proposed project with professor advisors and student internships that will be working on the project and trained in critical skills to support GRIP program objectives beyond the initial project lifecycle by bringing these skills into a broader sustainable energy future community ecosystem.

3. DOE identified eight policy priorities to guide DOE's implementation of Justice4038 in DACs: (1) decrease energy burden;39,40,41 (2) decrease environmental exposure and burdens;42 (3) increase access to low-cost capital; (4) increase the clean energy job pipeline and job training for individuals;43 (5) increase clean energy enterprise creation (e.g., minority-owned or disadvantaged business enterprises); (6) increase energy democracy, including community ownership and other economic benefits associated with the energy transition; (7) increase parity in clean energy technology access and adoption; and (8) increase energy resilience.

a. Of the eight Justice40 benefits, any comments on tracking these across the GRIP program?

Customer engagement plans will be particularly critical to achieving these eight Justice40 outcomes. Project applications should demonstrate how local knowledge and lived experiences from the communities affected by the project will be collected and integrated into project plans. Moreover, DOE should encourage applicants to take advantage of the best available technology to engage traditionally underserved communities and individuals.

4. What are the most appropriate performance and other metrics to track community benefits?

The community could be a city, town, geographic area (within a town, city, county), housing subdivision, or similar areas served by a part of the electric distribution network (substation, feeder, lateral, etc). As an example Reliability metrics would traditionally be defined in IEEE 1366: *Guide for Electric Power Distribution Reliability Indices* (e.g. SAIDI, SAIFI, CAIDI, MAIFI) but in this case, the customer measure would be only customers impacted in the defined community divided by all the customers served within that defined community. Further community reliability improvement value of financial impacts can be calculated based on actual financial loss resulting from the loss of service (e.g. home-based employees not able to work, or commercial/small manufacturing shop disruption). Therefore, the highest reliability value projects would demonstrate the largest improvement per customer project life-cycle cost. Similar metrics could be applied to end-use customer energy cost savings, renewable energy, the eight Justice40 benefits, and others.

Category 6: Build America, Buy America requirements

If funded, DOE will consider applicability of the Build America, Buy America Act44. All projects subject to the corresponding FOA for GRIP are considered "infrastructure." The Buy America requirements of the BIL do not apply to DOE projects in which the prime recipient is a for-profit entity; the requirements only apply to projects whose prime recipient is a "non-Federal entity," e.g., a State, local government, Indian tribe, Institution of Higher Education, or nonprofit organization.

1. Identify any iron, steel, manufactured goods/products or construction materials which may be crucial to this work, and whether those items would normally be procured domestically or from a foreign source.

This could be factored into the supply chain requirements understanding the potential impacts on costs and schedule. Due to the duration of these programs, mitigation considerations might be required for supply-chain costs increases and delays.

2. For any item that would normally be procured from a foreign source, please specify to the best of your ability what actions would be required to comply with this requirement should it be deemed to apply, such as the expected added cost of sourcing the requisite materials from domestic sources, seeking a waiver from Build America, Buy America, etc.; the impact on your project, and whether these items would be unable to be procured domestically due to lack of availability or cost.

DOE must clarify whether a for-profit sub-applicant under section 40103(b) would be subject to Buy America requirements if the primary applicant is a non-profit. [Requirements that stick to the prime grant recipient, also apply to sub awardees, hence if the prime is a for-profit entity, no BA requirements would be imposed on any non-federal gov't entities that were subawardees. Likewise, if the prime is a public entity, any for-profit entity in a subaward position would be subject to the Buy America obligations of the prime. The GridWise Alliance requests clarity on how these requirements flow to the subawardees; a chart on how Buy America provisions will be applied across awardees would be helpful, as would a description of how these provisions might be applied across other DOE programs.

The Department of Transportation recently requested the Office of Management and Budget (OMB) issue a waiver for all components within electric vehicle chargers. DOE should consider waiving the Build America, Buy America requirements on other smart grid products in light of global and domestic supply chain shortages until there is significant domestically available content. Alternatively, DOE may consider adjusting Buy America provisions, such as by expanding provisions to include the U.S. - Mexico - Canada (i.e. near shore) Agreement (USMCA). Without this expansion, significant beneficial projects may not make it to market in an expedited, necessary fashion. This minor adjustment will help alleviate broader supply chain issues and ensure that resources are managed and allocated properly.

The Obama Administration used a "substantial transformation" rule for ARRA funds - i.e. regardless of origin, if components received in a domestic factory were substantially transformed into a new and more advanced end project, that project in its entirety would be considered Made in America. Likewise, the Biden Administration should use a substantial transformation test for IIJA funds.

Finally, current domestic content accounting rules only consider the cost of components and subcomponents, with no consideration of other attributes and value streams that go into modern grid components like software, firmware, R/D, engineering - most of which occur in the USA. Additionally, DOE should count the costs of domestic labor in US based factories and assembly plants for the purposes of BA.

GridWise Alliance commends the DOE's clarification that Buy America provisions will only apply to funds that pass through state and local governments. As demonstrated by multiple industry letters to DOE and the White House, supply chain issues have entered a new phase of criticality that may be further exacerbated in 2023 depending on economic and global factors. Shortages from metals to semiconductors threaten critical infrastructure and innovative technologies that may be deployed to support resiliency in America's disadvantaged communities. While the CHIPS and Science Act semiconductor supply chain provisions are transformational, domestic market adoption and cost levelization will take years. The DOE should consider further waiving or adjusting Buy America provisions considering these extraordinary circumstances. Without leveraging the U.S. - Mexico - Canada Agreement (USMCA), significant beneficial projects may not make it to market in an expedited, necessary fashion. This minor adjustment will help alleviate broader supply chain issues and ensure that resources are managed and allocated properly.