

March 6th 2023

The Honorable Jennifer M. Granholm
Secretary, U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

335 Madison Ave.
4th Floor
New York
NY 10017

Dear Secretary Granholm,

Smarter Grid Solutions (SGS) understands that National Grid is seeking a federal grant to support the implementation of the Future Grid 2.0 project under Department of Energy's Grid Innovation and Partnerships Program. Federal funding for Future Grid 2.0 will enable National Grid to deploy innovative technology solutions to maximize the value of DER through advanced network management, resource orchestration, and control. The project will leverage and build upon foundational investments currently being deployed, including investments in National Grid's distributed energy resources management system (DERMS) managed by SGS.

SGS is an enterprise energy software company with a unique end-to-end approach to DERMS to deliver net zero energy systems. Our products are used to manage power grid and market participation in energy systems with high penetrations of distributed, clean, and flexible energy assets. We have invested significantly for more than a decade in developing and enhancing our technology platform and the supporting user, data, integration, and engineering environments. This allows our customers and partners to gain from a wide range of standard features to build their own solutions, create their own value propositions and implement their unique business models. Advances in underlying technologies also enable users to design and implement solutions that include online grid analytics, optimization, data analytics, flexibility markets, artificial intelligence, and more.

Future Grid 2.0 will transform National Grid's Operations Technology and Information Technology systems by integrating complex systems such as ADMS, DERMS, AMI, and FLISR. As National Grid's DERMS partner, SGS commits to ensuring investments in DERMS are executed successfully.

SGS and National Grid have a long strategic partnership in developing and deploying critical power system platforms. SGS looks forward to continuing this successful partnership and is excited for the opportunity to support Future Grid 2.0 which will drive the clean energy transition through innovation and collaboration.

Yours Sincerely,



Alan Gooding, EVP Go to Market



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P.O. Box 999, MSIN K9-69
Richland, WA 99352
(509) 375-4328
Carl.imhoff@pnnl.gov
www.pnnl.gov

March 10, 2023

Jean Dubois
Enterprise Domain Architect
National Grid
National Grid Headquarters 40 Sylvan Road
Waltham, MA 02451 USA

Dear Mr. Dubois:

SUBJECT: LETTER OF COMMITMENT TO SUPPORT NATIONAL GRID'S IMPLEMENTATION OF FUTURE GRID 2.0 THROUGH THE DEPARTMENT OF ENERGY'S GRID RESILIENCE AND INNOVATION PARTNERSHIP PROGRAM

The Pacific Northwest National Laboratory (PNNL) is pleased to support your proposed effort entitled "Future Grid 2.0" submitted in support of The Infrastructure Investment and Jobs Act through the Grid Resilience and Innovation Partnership (GRIP) program, Topic Area 2 – Smart Grid Grants. It is the intention of PNNL to informally advise National Grid's efforts in "Future Grid 2.0" that will enable the accelerated integration of Distributed Energy Resources (DER) and behind-the-meter technologies to reduce the impact of outages and maximize the output of clean energy resources to deliver network efficiency and achieve climate goals.

Future Grid 2.0 will transform National Grid's Operations Technology (OT) and Information Technology (IT) systems by integrating complex systems such as ADMS, DERMS, AMI, and FLISR, in which PNNL is a world class leader. PNNL will provide technical guidance as it relates to phase measurement units (PMUs), analytics, and DER management across a federated grid. Through this collaboration PNNL will advise on critical components of the substation edge computing implementation plan to ensure this advanced technology is executed successfully.

Sincerely,

A handwritten signature in blue ink, appearing to read "C. Imhoff", is positioned above the printed name.

Carl Imhoff
Manager of the Electric Infrastructure Sector
Pacific Northwest National Laboratory



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3/6/2023

The Honorable Jennifer M. Granholm
Secretary, U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Dear Secretary Granholm,

The Massachusetts Clean Energy Center (MassCEC) understands that National Grid is seeking a federal grant to support the implementation of the Future Grid 2.0 project under Department of Energy's Grid Innovation and Partnerships Program. The Future Grid project will support an accelerated integration of Distributed Energy Resources (DER) and aligns with MassCEC's objectives of promoting renewable energy, building an inclusive clean energy economy and a resilient and distributed energy infrastructure.

As the Commonwealth's clean energy economic development agency, MassCEC works to convene stakeholders and encourage innovation that will enable Massachusetts to reach Net Zero by 2050. We look forward to the success of the Future Grid 2.0 project and are excited to work with National Grid to:

- Find innovative ways to integrate increasing amounts of DERs into the distribution grid
- Build robust collaborations between National Grid and partner communities
- Bolster efforts to develop a local, skilled clean energy workforce

MassCEC strongly supports the Future Grid 2.0 project that can be transformative in enabling clean energy transition in Massachusetts and urges you to consider their application for federal grant funds favorably.

Sincerely,

A blue ink signature of Galen Nelson, consisting of a large, stylized 'G' followed by a horizontal line.

Galen Nelson
Chief Program Officer

Hitachi Energy USA Inc.
3151 Briarpark Drive, Houston 77042, Texas, United
States

02/28/2023

The Honorable Jennifer M. Granholm
Secretary, U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Dear Secretary Granholm,

Hitachi Energy (Hitachi) understands that National Grid is seeking a federal grant to support the implementation of the Future Grid 2.0 project under Department of Energy's Grid Innovation and Partnerships Program. Federal funding for Future Grid 2.0 will enable National Grid to deploy innovative solutions to maximize the contribution of Distributed Energy Resources to their grid operations using advanced network management, resource orchestration, and control. The project will leverage and build upon foundational investments currently being deployed, which include advanced distribution management system (ADMS), distributed energy resources management system (DERMS), and advanced metering infrastructure (AMI).

Hitachi Energy is a global leader in power technologies and energy systems. Customers across utilities, transportation, IT such as data centers, industry and Smart Life sectors trust our world-class teams of experts to deliver pioneering and digital solutions across the electrical-energy value chain. Our solutions help meet the growing demand for electricity – affordably, reliably, sustainably and in a modern way.

Future Grid 2.0 will transform National Grid's Operations Technology (OT) and Information Technology (IT) systems by integrating complex systems such as ADMS (including Fault Location Isolation and Restoration functionality), DERMS and AMI. As National Grid's ADMS partner, Hitachi commits to ensuring integrations with this critical system are executed successfully.

Hitachi looks forward to continuing this successful partnership and fully support National Grid's Future Grid 2.0 initiative, which will drive the clean energy transition through innovation and collaboration.

Sincerely,



Ernst Scholtz, PhD
Vice President, Product Management
Network Control

 **Hitachi Energy USA Inc.**

Postal Address: 3151 Briarpark Drive, 77042 Houston, United States
Visiting Address: 3151 Briarpark Drive, 77042 Houston
www.hitachienergy.com



March 10, 2023

Jean Dubois, Substation Edge Computing Lead
National Grid USA Services Co., Inc.
170 Data Drive
Waltham, MA 02451

Dear Mr. Dubois,

Intel Corporation understands that National Grid is seeking a federal grant to support the implementation of the Future Grid 2.0 project under Department of Energy's Grid Innovation and Partnerships Program. Federal funding for Future Grid 2.0 will enable National Grid to deploy innovative solutions to maximize the contribution of Distributed Energy Resources (DER) to their grid operations using advanced network management, resource orchestration, and control.

At Intel, we create world-changing technology that improves the life of every person on the planet. Today we are applying our reach, scale, and resources to enable our customers to capitalize more fully on the power of digital technology. Intel products are designed, manufactured, and maintained using the industry's best security practices. Our innovative security capabilities and robust processes to find and address vulnerabilities are designed to help our customers meet today's security challenges.

Future Grid 2.0 will transform National Grid's Operations Technology (OT) and Information Technology (IT) systems by integrating complex systems as well as developing and deploying advanced software. Intel is keen to support National Grid's project in leveraging the maximum potential of these technology solutions and developing new standards across the Utility and Energy industries. With this objective, we are currently negotiating a memorandum of understanding in supplying our chip technology to deliver accelerated functionality and superior security to National Grid's critical smart grid infrastructure.

Intel looks forward to continuing discussions with National Grid to drive the successful implementation of the Future Grid 2.0 project. This Letter of Intent is non-exclusive and does not constitute a Teaming Agreement or any other type of binding commitment on behalf of INTEL or any of its business units. No contract will exist between Intel and National Grid. Any subsequent purchase agreement would be between Intel and an OEM, subject to negotiated price, terms, and conditions.

Sincerely,

A handwritten signature in black ink that reads "Joe Jankosky". The signature is fluid and cursive, with the first name "Joe" and last name "Jankosky" clearly distinguishable.

Joe Jankosky
Director, Energy Center of Excellence
Intel Corporation



DANIEL L. BROOKS
Vice President,
Integrated Grid and Energy Systems

March 8, 2023

The Honorable Jennifer M. Granholm
Secretary, U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Subject: Letter of Commitment for the National Grid's Proposal in Response to DE-FOA-0002740 "BIL – Grid Resilience and Innovation Partnerships (GRIP)" Topic Area 2

Dear Secretary Granholm:

The Electric Power Research Institute (EPRI) is pleased to provide this Letter of Commitment to National Grid's proposal in response to DE-FOA-0002740. EPRI is a nonprofit corporation organized under the laws of the District of Columbia Nonprofit Corporation Act and recognized as a tax-exempt organization under Section 501(c)(3) of the U.S. Internal Revenue Code of 1986, as amended, and seeks involvement in furtherance of its public benefit mission. EPRI undertakes public benefit research on topics surrounding the production and distribution of electric power and the impact of these activities on the environment.

EPRI understands that National Grid is seeking this federal grant to support the implementation of the Future Grid 2.0 project under Department of Energy's Grid Innovation and Partnerships Program. The project proposed for the grant would enable National Grid to support an accelerated integration of Distributed Energy Resources (DER) and behind-the-meter technologies to reduce the impact of outages and maximize the output of clean energy resources to delivery network efficiency and achieve climate goals. The total estimated cost of the anticipated EPRI effort on this proposed project, if the resultant award is fully funded, would be \$560,000. EPRI's work would include reviewing and validating the system architecture, modeling assumptions, interface logic, and testing to ensure these technologies are developed efficiently without compromising the safety or reliability of the grid.

Any potential support provided by EPRI is conditioned upon the final project plan being acceptable to EPRI and the successful negotiation of mutually acceptable contractual terms between National Grid and EPRI. EPRI's potential support shall not be construed as an endorsement of any facility, product, or entity, as EPRI does not endorse specific facilities, companies, or products. For the avoidance of doubt, this letter may not be construed by National Grid, DOE, EPRI, or any third party as creating any legally binding obligation.

Sincerely,

Daniel Brooks
Vice President, Integrated Grid and Energy Systems
[Electric Power Research Institute](#)
942 Corridor Park Drive, Knoxville, TN, 37932
Telephone: (865) 218-8040
Email: dbrooks@epri.com

rsg

Together . . . Shaping the Future of Energy™

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COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENERGY RESOURCES

Maura T. Healey
Governor

Kimberley Driscoll
Lt. Governor

Rebecca L. Tepper
Secretary

Elizabeth Mahony
Commissioner

U.S. Department of Energy
Grid Deployment Office
3/3/2023
Re: Letter of Support from National Grid

The Massachusetts Department of Energy Resources (DOER) is pleased to provide this Letter of Support to National Grid as it pursues funding under the Grid Resilience and Innovation Program's Topic Area 2: Smart Grid Grants provided by the U.S. Department of Energy (DOE) Grid Deployment Office (GDO). The proposed Future Grid 2.0 Project will enable National Grid to deploy innovative technology solutions to maximize the value of distributed energy resources (DER) through advanced network management, resource orchestration, and control. Future Grid 2.0 will focus on technology solutions that will provide benefits across National Grid's service territories in New York and Massachusetts. DOER determined that the applicant has considered and demonstrated that the proposed project meets clean energy goals for the Commonwealth of Massachusetts. This applicant demonstration is the basis for DOER providing this Letter of Support.

DOER is an agency of the Executive Office of Energy and Environmental Affairs. DOER's mission is to create a clean, affordable, equitable and resilient energy future for all residents, including low-income and Environmental Justice populations, businesses, communities, and institutions in the Commonwealth. To meet these objectives, DOER develops and implements policies and programs to ensure the adequacy, security, diversity, and cost-effectiveness of the Commonwealth's energy supply. DOER is committed to working to promote energy programs and policies that are developed and implemented to ensure environmental justice among all the Commonwealth's citizens, communities, businesses, and institutions. DOER provides letters of support to projects that achieve the energy goals of the Commonwealth.¹

The Bipartisan Infrastructure Law, also known as the Infrastructure Investment and Jobs Act, includes new DOE programs and funding opportunities, several of which will be administered by the DOE's [Grid Deployment Office](#) and the [Office of Clean Energy Demonstrations](#). For funding opportunities where DOER is not an applicant or a partner to an applicant, DOER welcomed applicants to submit a Request for a Letter of Support about how the proposed project meets DOER and Commonwealth of Massachusetts energy goals.

National Grid requested a Letter of Support from DOER for their project application to the Grid Resilience and Innovation Program's Topic Area 2: Smart Grid Grants provided by the U.S. Department of Energy Grid Deployment Office. DOER has reviewed the proposed project, as submitted to DOER on February 13, 2023, and finds that it addresses the following Commonwealth energy goals:

- **Clean Energy and Emission Reduction** by deploying and integrating critical technologies to maximize the operational flexibility of large and small-scale DERs, thereby reducing the reliance on fossil fuel generation that directly contributes to GHG emissions and poor air quality.
- **Energy Reliability and Resilience** by accelerating integration of National Grid's advanced distribution management system (ADMS), distributed energy resources management system (DERMS), and advanced metering infrastructure (AMI) with other enterprise systems to inform operational schemes of detailed forecasted and real-time system conditions so DER activity can be better coordinated with distribution assets to meet real-time system needs.
- **Energy Affordability** by increasing the availability of DER facilities during grid disturbances to maximize the operational economics for DER developers and allow for faster and less costly system upgrades for interconnection.
- **Energy Equity** by accelerating and prioritizing deployment of Enhanced Fault Location, Isolation, and Service Restoration (FLISR)-DER integrations to improve system reliability and resilience in EJ communities.
- **Environmental Impacts** by priming the system for increased DER penetration and supporting the acceleration of DER, thereby reducing the reliance on fossil fuel generation that directly contributes to GHG emissions and poor air quality.
- **Workforce and Economic Development** by bolstering skill development and pre-apprenticeship programs in in EJ communities such as Worcester and Roxbury, MA which represent some of the lowest-income communities that National Grid serves.

We look forward to further discussions with the project, should it receive federal funding, to ensure integration of state policy objectives.

Signature,

Joanna K. Troy
Director of Energy Policy and Planning
Massachusetts Department of Energy Resources

¹ Please note this Letter of Support does not commit DOER to the proposed project, nor does it imply any commitments of state funding or project management.