



Concept Papers Due: December 16, 2022
DOE Response to Concept Papers: January 27, 2023
Full Applications Due: March 17, 2023

**Department of Energy (DOE)
Grid Deployment Office (GDO)
Office of Clean Energy Demonstrations (OCED)**

BIL – Grid Resilience and Innovation Partnerships (GRIP)

Funding Opportunity Announcement (FOA) Number: DE-FOA-0002740

Group Concept Paper – Surety Resource Connection Enhancing Interoperability and Data Architecture of Systems

Funding Opportunity Announcement

Smart Grid Priority Investment Areas:

Topic Area #2: Enhancing interoperability and data architecture of systems

1. Smart Grid Grants Fact Sheet
2. Outline for Concept Paper
3. Criteria for Award

Submission to the DOE

1. 2022 12-16 Smart Grid Grants - SRC Concept Paper - FOA Submission - Cover Page
2. 2022 12-16 Smart Grid Grants - SRC Concept Paper - FOA Submission - Project Technology Description
3. 2022 12-16 Smart Grid Grants - SRC Concept Paper - FOA Submission - Community Benefits Plan
4. 2022 12-16 Smart Grid Grants - SRC Concept Paper - FOA Submission - Addendum A

Prior Submissions to DOE

1. June 1, 2022
Response to DOE Request for Information
Preventing Outages and Enhancing the Resilience of the Electric Grid
2. September 25, 2022
Response to DOE FOA DE-FOA-0002736
Non-traditional grant request
Formula Grants to States and Indian Tribes for Preventing Outages and Enhancing the Resilience of the Electric Grid
3. November 18, 2022
Response to DOE Request for Information
Cost and value of acquiring, accessing, and sharing solar photovoltaic system performance data.
Addendum - Proposal for Model Digital Ecosystem for Community Resiliency
On November 18th we submitted our response to the DOE RFI regarding performance data, and on the 18th the DOE issued a new funding opportunity, Smart Grid Grants, that ties directly to our request for funding.



Concept Papers Due: December 16, 2022
DOE Response to Concept Papers: January 27, 2023
Full Applications Due: March 17, 2023

**Department of Energy (DOE)
Grid Deployment Office (GDO)
Office of Clean Energy Demonstrations (OCED)**

BIL – Grid Resilience and Innovation Partnerships (GRIP)

Funding Opportunity Announcement (FOA) Number: DE-FOA-0002740

Group Concept Paper – Surety Resource Connection Enhancing Interoperability and Data Architecture of Systems

Funding Opportunity Announcement

Smart Grid Priority Investment Areas:

Topic Area #2: Enhancing interoperability and data architecture of systems

1. Smart Grid Grants Fact Sheet

Links

[Smart Grid Grants](#)

[Fact Sheet](#)

FedConnect: [Opportunity: BIL Grid Resilience and Innovation Partnerships \(GRIP\)](#)

November 18, 2022

[Biden-Harris Administration Announces \\$13 Billion To Modernize And Expand America's Power Grid](#)



Smart Grid Grants

Funded through the Bipartisan Infrastructure Law (BIL), the Smart Grid Grants (40107) are designed to increase the flexibility, efficiency, and reliability of the electric power system, with particular focus on: increasing capacity of the transmission system, preventing faults that may lead to wildfires or other system disturbances, integrating renewable energy at the transmission and distribution levels, and facilitating the integration of increasing electrified vehicles, buildings, and other grid-edge devices. Smart grid technologies funded and deployed at scale through this program must demonstrate a pathway to wider market adoption.

The Smart Grid Grant program will invest up to **\$3 billion (\$600 million/year for Fiscal Years 2022-2026)** in grid resilience technologies and solutions. The first funding cycle will include both FY22 and FY23, up to \$1.2 billion. Recipients must provide a cost-share of at least 50% of the grant. This program is open to domestic entities including:

- Institutions of higher education
- For-profit entities
- Non-profit entities
- State and local governmental entities
- Tribal nations

The Smart Grid Grants Program was previously funded by the Recovery Act of 2009. The Bipartisan Infrastructure Law expands on the existing program, including additional eligible investment areas.

Concept Papers are due **December 16, 2022**. DOE will provide a response to Concept Papers by January 27, 2023. Full Applications are due **March 17, 2023**. Applicants are allowed to submit more than one Concept Paper, provided that each describes a unique project.

Smart Grid Priority Investment Areas:

- ▶ **Increasing transmission capacity and operational transfer capacity**
Grid enhancing technologies such as dynamic line rating, flow control devices, advanced conductors, and network topology optimization, to improve system efficiency and reliability.
- ▶ **Improving the visibility of the electrical system to grid operators**
Help quickly rebalance the electrical system with autonomous controls through data analytics, software, and sensors.
- ▶ **Enhance secure communication and data flow between distribution components:**
Investments in optical ground wire, dark fiber, operational fiber, and wireless broadband communications networks.
- ▶ **Aggregation and integration of distributed energy resources and other “grid-edge” devices to**
Provide system benefits, such as renewable energy resources, electric vehicle charging infrastructure, vehicle-to-grid technologies and capabilities, and smart building technologies.
- ▶ **Enhancing interoperability and data architecture of systems**
Support two-way flow of both electric power and localized analytics to provide information between electricity system operators and consumers.
- ▶ **Anticipate and mitigate the impacts of extreme weather or natural disaster on grid resiliency**
Investments to increase the ability to redirect or shut of power to minimize blackouts, prevent wildfires, and avoid further damage.





Concept Papers Due: December 16, 2022
DOE Response to Concept Papers: January 27, 2023
Full Applications Due: March 17, 2023

**Department of Energy (DOE)
Grid Deployment Office (GDO)
Office of Clean Energy Demonstrations (OCED)**

BIL – Grid Resilience and Innovation Partnerships (GRIP)

Funding Opportunity Announcement (FOA) Number: DE-FOA-0002740

Group Concept Paper – Surety Resource Connection Enhancing Interoperability and Data Architecture of Systems

Funding Opportunity Announcement

Smart Grid Priority Investment Areas:

Topic Area #2: Enhancing interoperability and data architecture of systems

Outline for Concept Paper

The Concept Paper must conform to the following content and form requirements and must not exceed the stated page limits. If applicants exceed the maximum page lengths indicated below, DOE will review only the authorized number of pages and disregard any additional pages:

Section	Page Limit	Description
Cover Page	1 page maximum	The cover page should include the project title, the specific announcement Topic Area being addressed, both the technical and business points of contact, names of all team member organizations, the project location(s), and any statements regarding confidentiality.
Project and/or Technology Description	12 pages maximum	Applicants are required to describe succinctly: <ul style="list-style-type: none"> • How the project addresses the topic area’s eligible uses and technical approaches. • How the project supports State, local, Tribal, community and regional resilience, in reducing the likelihood and consequences of disruptive events, decarbonization, or other energy strategies and plans. • The grid-benefitting outcomes to be delivered by the project. • The impact of the project to reduce innovative technology risk; achieve further deployment at-scale; and lead to additional private sector investments. • The impact that DOE funding would have on the proposed project. • The readiness, viability, and expected timing of the project.
Community Benefits Plan	5 Pages maximum	Applicants are required to describe succinctly the approach to be taken with the Community Benefits Plan, addressing the four core elements: <ul style="list-style-type: none"> • community and labor engagement leading to negotiated agreements; • investing in job quality and workforce continuity; • advancing diversity, equity, inclusion, and accessibility; and • contributing to the Justice40 Initiative goal that 40% of the overall benefits of certain climate and clean energy investments flow to disadvantaged communities.
Addendum A	5 pages maximum	Applicants are required to describe succinctly the qualifications, experience, and capabilities of the proposed Project Team, including: <ul style="list-style-type: none"> • Whether the Project Manager and Project Team have the skill and expertise needed to successfully execute the project plan;

		<ul style="list-style-type: none"> • Whether the applicant has prior experience that demonstrates an ability to perform tasks of similar risk and complexity; • Whether the applicant has worked together with its teaming partners on prior projects or programs; and • Whether the applicant has adequate access to equipment and facilities necessary to accomplish the effort and/or clearly explain how it intends to obtain access to the necessary equipment and facilities. • Applicants may provide graphs, charts, or other data to supplement their Project and/or Technology Description.
Addendum B Topic Area 1 ONLY, if applicable*	N/A	Applicants who are small utilities applying to Topic Area 1 must submit the EIA Form 861 for the last reporting year showing the total retail electricity sales to ultimate customers to ensure status as a small utility.
*Small utilities ONLY: 30% of the total funding available will be set aside for small utilities, which are defined as entities that sell no more than 4,000,000 MWh of electricity per year. ⁴⁵		

DOE makes an independent assessment of each Concept Paper based on the criteria in Section V of the FOA. DOE will encourage a subset of applicants to submit Full Applications. Other applicants will be discouraged from submitting a Full Application. An applicant who receives a “discouraged” notification may still submit a Full Application. DOE will review all eligible Full Applications. However, by discouraging the submission of a Full Application, DOE intends to convey its lack of programmatic interest in the proposed project in an effort to save the applicant the time and expense of preparing an application that is unlikely to be selected for award negotiations.

DOE may include general comments provided from reviewers on an applicant’s Concept Paper in the encourage/discourage notification sent via email at the close of that phase.

⁴⁵ 42 USC §18711(c)(5)



Concept Papers Due: December 16, 2022
DOE Response to Concept Papers: January 27, 2023
Full Applications Due: March 17, 2023

**Department of Energy (DOE)
Grid Deployment Office (GDO)
Office of Clean Energy Demonstrations (OCED)**

BIL – Grid Resilience and Innovation Partnerships (GRIP)

Funding Opportunity Announcement (FOA) Number: DE-FOA-0002740

Group Concept Paper – Surety Resource Connection Enhancing Interoperability and Data Architecture of Systems

Funding Opportunity Announcement

Smart Grid Priority Investment Areas:

Topic Area #2: Enhancing interoperability and data architecture of systems

Criteria for Award

Criterion 1 Topic Area 2: Impact, Transformation, and Technical Merit (50%):

This criterion involves consideration of the following factors:

- Extent to which the project supports the Topic Area 2 objectives and desired outcomes.
- Extent to which the project deploys technology solutions that address Topic Area 2 priority investments.
- Extent to which the project deploys technology solutions that increase the flexibility, efficiency, reliability and resilience of the electric power system.
- Extent to which the project supports State, local, Tribal, regional resilience, decarbonization, or other energy strategies and plans.

- Extent to which the application provides sufficient technical detail to demonstrate that the proposed project is technically feasible and would likely result in the described smart grid benefits.
- The potential impact of the project to reduce risk for deployment of innovative technologies or solutions and lead to further deployment at-scale.
- The potential impact of the project to catalyze additional private sector investments and/or non-federal public or regulated capital.

Criterion 2 for Topic Area 2: Project Plan and Project Financial Feasibility (20%)

This criterion involves consideration of the following factors:

Project Approach, Workplan, and Statement of Project Objectives (SOPO)

- Degree to which the approach and critical path have been clearly described and thoughtfully considered.
- Degree to which the task descriptions are clear, detailed, timely, and reasonable, resulting in a high likelihood that the proposed Workplan and SOPO will succeed in meeting the project goals.

Identification of Risks

- Discussion and demonstrated understanding of the key anticipated risks (e.g. technical, financial, market, environmental, regulatory) involved in the proposed work and the quality of the mitigation strategies to address them.

Baseline, Metrics, and Deliverables

- The level of clarity in the definition of the baseline, metrics, and milestones.
- Relative to a clearly defined baseline, the strength of the quantifiable metrics, milestones, and mid-point deliverables defined in the application, such that meaningful interim progress will be made.

Project Financial Feasibility

- The reasonableness of the budget and spend plan for the proposed project and objectives.
- Soundness of proposed cost share; level of dedication as demonstrated by letter(s) of commitment that clearly identify type and amount of proposed cost share. Proposed cost share meets requirements outlined in the FOA.
- The degree to which the proposed project yields additive benefit(s) from the federal funding to undertake additional efforts that would not be

taken but-for the funding or to accelerate or expand planned activities that would not be accelerated or expanded but-for the funding.

- The degree to which the applicant justifies the project's economic viability.
- The degree to which the project provides enhanced system value and/or provides improved current and future system cost-effectiveness and delivers economic benefit.

Criterion 3 for Topic Area 2: Management Team and Project Partners (10%)

This criterion involves consideration of the following factors:

Project Management

- Clarity and appropriateness of the roles and responsibilities of the project management organization and the project team, including relevant and critical subrecipients and vendors.
- The capability of the Project Manager(s) and the proposed team to manage and address all aspects of the proposed work with a high probability of success.
- The qualifications, relevant expertise, and time commitment of the key individuals on the team.
- The level of participation by project participants as evidenced by letter(s) of commitment and how well they are integrated into the Project Plan/Workplan.
- The degree to which the applicant has defined and described a project management structure that addresses interfaces with DOE.

Partners

- Degree to which the applicant includes partnerships with critical entities that will help ensure project success, as well as any partnerships with entities (including other states) outside of the applicant's jurisdiction, who will commit to encourage asset operators (e.g., utilities, merchant developers) to replicate the proposed approaches, technologies or solutions, as applicable.

Criterion 4 for Topic Area 2: Community Benefits Plan (20%)

Every BIL-funded project is expected to contribute to the country's energy infrastructure modernization goals, energy technology demonstration and deployment goals, and climate goals, and also to (1) support meaningful community and labor engagement; (2) support quality jobs and ensure workforce continuity; (3) advance diversity, equity, inclusion, and accessibility; and (4) contribute to the Justice40 Initiative's goal that 40% of the overall project benefits flow to disadvantaged communities.

To ensure these goals are met, applications must include a Community Benefits Plan that illustrates how the proposed project plans to incorporate the four goals stated above and are encouraged to submit Community Partnership Documentation from established labor unions, Tribal entities, and community-based organizations that demonstrate the applicant's ability to achieve the above goals as outlined in the Community Benefits Plan.

This criterion involves consideration of the following factors:

Community and Labor Engagement

- Extent to which the applicant demonstrates community and labor engagement to date that results in support for the proposed project.
- Extent to which the applicant has a clear and appropriately robust plan to engage—ideally through a clear commitment to negotiate an enforceable Workforce & Community Agreements—with labor unions, Tribal entities, and community-based organizations that support or work with disadvantaged communities and other affected stakeholders.
- Extent to which the applicant has considered accountability to affected workers and community stakeholders, including those most vulnerable to project activities with a plan to publicly share SMART community benefits plan commitments.
- Extent to which the applicant demonstrates that community and labor engagement will lead to the delivery of high-quality jobs, minimal environmental impact, and allocation of project benefits to disadvantaged communities.

Quality Jobs

- Quality and manner in which the proposed project will create and/or retain high quality, good-paying jobs with employer-sponsored benefits for all classifications and phases of work.
- Extent to which the project provides employees with the ability to organize, bargain collectively, and participate, through labor organizations of their choosing, in decisions that affect them and that contribute to the effective conduct of business and facilitates amicable settlements of any potential disputes between employees and employers, providing assurances of project efficiency, continuity, and multiple public benefits.
- Extent to which applicant demonstrates that they are a responsible employer, with ready access to a sufficient supply of appropriately skilled labor, and an effective plan to minimize the risk of labor disputes or disruptions.

Diversity, Equity, Inclusion, and Accessibility (DEIA)

- The quality and manner in which the proposed project incorporates and measures diversity, equity, inclusion and accessibility goals in the project, as reflected in the applicant’s Community Benefits Plan.
- Extent to which the project supports the development or demonstration in disadvantaged communities, supports existing minority business enterprises (MBEs) or promotes the creation of MBEs and underrepresented businesses in disadvantaged communities.
- Quality of any partnerships and agreements with apprenticeship readiness programs, or community-based workforce training and support organizations serving workers facing systematic barriers to employment to facilitate participation in the project’s construction and operations.
- Extent of engagement of organizations that represent underserved communities as core element of their mission to include Minority Serving Institutions (MSIs), MBEs, associations, and non-profit organizations.
- Extent to which the project illustrates the ability to meet or exceed the objectives of the Justice40 initiative, including the extent to which the project benefits disadvantaged, underserved communities or partners with Tribal Nations.

Justice40 Initiative

- Extent to which the Community Benefits Plan identifies: specific, measurable benefits for disadvantaged communities, how the benefits will flow to disadvantaged communities, and how negative environmental impacts affecting disadvantaged communities would be mitigated.
- Extent to which the project would contribute to meeting the objective that 40% of the benefits of climate and clean energy investments flow to disadvantaged communities.



Concept Papers Due: December 16, 2022
DOE Response to Concept Papers: January 27, 2023
Full Applications Due: March 17, 2023

**Department of Energy (DOE)
Grid Deployment Office (GDO)
Office of Clean Energy Demonstrations (OCED)**

BIL – Grid Resilience and Innovation Partnerships (GRIP)

Funding Opportunity Announcement (FOA) Number: DE-FOA-0002740

Group Concept Paper – Surety Resource Connection Enhancing Interoperability and Data Architecture of Systems

Submission to the DOE

2022 12-16 Smart Grid Grants - SRC Concept Paper - FOA Submission - Cover Page

Surety Resource Connection – Collaboration Proposal
Expand XBRL Taxonomy for Model Digital Ecosystem for Community Reliability
Enhancing Interoperability and Data Architecture of Systems
FOA Number: DE-FOA-0002740

Project Concept:

Expand the XBRL Taxonomy to Support Model Digital Ecosystem for Community Resiliency to unleash the power of data standardization with a multi-stakeholder effort that is individual but collaborative, independent but integrated, that results in:

A “Model Digital Ecosystem for Community Resiliency” that identifies and incorporates all the data elements that need to be in the XBRL taxonomy and establishing an open standards based digital ecosystem model that can be utilized by any system and replicated by any community.

Expanded the XBRL taxonomy as a public benefit that can be monetized by the private sector and leveraged by public agencies; local, state and federal.

Accelerating the implementation of private digital construction management systems that align with all federal agencies, specifically SEC, SBA, GSA, DOE and DOT.

Topic Area being addressed: Topic Area #2

Smart Grid Grants - Enhancing Interoperability and Data Architecture of Systems

Technical and business points of contact:

K. Dixon Wright, Chairman

Surety Resource Connection, Inc. - www.SRC-Digital-Insurance-Services.com

Dixon@Surety-RC.com

415-717-1092

Names of all collaboration member organizations

Orange Button Collaboration/XBRL US

SunSpec Alliance – Submitting separate concept paper

OS2 Initiative

Texas A&M/PrairieDog

Construction Progress Coalition

Commander Technologies – Submitting separate concept paper

Financial Data Exchange

Digital 360 Summit - CMG Consulting

American Resilience Project

Project location(s)

Physical Project: Novato California

Statements regarding confidentiality

Open Standards – Open Collaboration - No Confidentiality



Concept Papers Due: December 16, 2022
DOE Response to Concept Papers: January 27, 2023
Full Applications Due: March 17, 2023

**Department of Energy (DOE)
Grid Deployment Office (GDO)
Office of Clean Energy Demonstrations (OCED)**

BIL – Grid Resilience and Innovation Partnerships (GRIP)

Funding Opportunity Announcement (FOA) Number: DE-FOA-0002740

Group Concept Paper – Surety Resource Connection Enhancing Interoperability and Data Architecture of Systems

Submission to the DOE

2022 12-16 Smart Grid Grants - SRC Concept Paper - FOA Submission - Project Technology Description

Project and/or Technology Description

Executive Summary

Surety Resource Connection (SRC) and various collaborators seek funding to support a continuing collaboration with the Orange Button working group, expanded to include other data interoperability initiatives like the Accelerated Capital Project Formation (ACPF) research initiative at Texas A&M University, Financial Data Exchange (FDX), Orange Button JSON, and Construction Data Exchange (CDX) to enable a digital ecosystem that can be leveraged across public and private infrastructure market segments, including regulatory, construction, finance, insurance and surety.

This grant funding request is not a traditional application from a single applicant with a narrowly focused objective and detailed budget. Instead, this grant request is an invitation for the DOE to continue its financial support and leadership in multiple areas with multiple stakeholders as would be required for the June 1st recommendations.

Under this concept paper each collaborator will contribute as part of a group working transparently to develop a digital ecosystem that can be replicated, and some will submit individual concept papers for specific areas of interest for their specific industry use case.

Concepts –

Group Concept

1. SRC – Model Digital Ecosystem for Community Resiliency to establish data sets, expand XBRL taxonomy, OB JSON and FDX and implement individual concepts.

Individual Concepts

2. Orange Button – Product registry, project monitoring and more.
3. Construction Progress Coalition – Contract UUID registry and CDX

Outreach and Education

4. OS2/Texas A&M – Accelerated Capital Project Formation (ACPF) research initiative
5. Digital 360 Summit
6. American Resilience Project

Each collaborator has value, but the sum of the whole is far greater than the sum of the parts.

The City of Novato will host the collaborations effort to identify and incorporate into the XBRL taxonomy all the additional data elements required for the model digital ecosystem. Collaborators will utilize the XBRL taxonomy, Orange Button JSON, FDX, and CDX along with model smart contracts and blockchain to upgrade their 17 campuses to be equipped with solar and storage as critical community facilities in the event of power outages, with 40 miles of underground micro-grid infrastructure tunnels for additional resiliency, bi-directional power from homes and businesses, and a fleet of electric school buses.

Deliverables

1. Novato California micro-grid to demonstrate how XBRL and data interoperability will enable an extended public/private digital ecosystem, promote innovation and competition, plus provide grid resiliency that can be replicated by other communities
2. Expanded XBRL Taxonomy with established data sets that will enable mapping across systems and other data standards.
3. Establishing data interoperability with international stock markets for financial reporting in IFRS/XBRL will enable an international supply chain.
4. Extensive university participation for greater outreach, transparency, collaboration and production of free software models and demonstrations.
5. Shareware basic code available on GitHub for converting, sending and receiving standardized data sets in XBRL or Excel.
6. Low-cost subscriptions for applications available on the Salesforce platform for converting, administering, sending and receiving data sets in XBRL or Excel.

Funding Request (Subject to Adjustment)

SRC Digital Insurance Services is the lead with funding under this concept paper going to the following collaborators

\$30,000,000	To City of Novato for Model Digital Ecosystem for Community Resiliency
\$2,000,000	To XBRL US for expanding the XBRL taxonomy
\$200,000	To SRC for retaining Robots and Pencils for shareware software code for developers and low-cost subscriptions for consumers to exchange data.
\$250,000	To American Resilience Project Documentary - Unleashing the Power of Data Standardization.
<u>\$100,000</u>	To CMG Consulting – Sponsorship for the 2023 Digital 360 Summit
\$32,550,000	

50% Co-Share requirement

1. Model Digital Ecosystem for Community Resiliency

SRC Digital Insurance Services as Project Coordinator.

\$30,000,000 Total - \$15,000,000 Cost-Share

In-Kind: Many hours and resources from a wide range of people for In-Kind contributions.

Cash: Our collaboration will seek corporate support from construction related markets and SaaS providers associated with infrastructure that will benefit from the functionality of a digital ecosystem.

2. Expand XBRL Taxonomy

XBRL US

\$2,000,000 Total - \$1,000,000 Cost-Share

In-Kind: Many hours and resources from a wide range of people for In-Kind contributions.

Cash: Our collaboration will seek corporate support from financial markets that will benefit from the functionality. [Liberty Mutual implementing XBRL](#) and estimated a 150% ROI in the first year and 650% over five years.

3. Basic Data Exchange shareware and low cost Subscription

SRC Digital Insurance Services.

\$200,000 Total - \$100,000 Cost-Share

In-Kind: SRC and Robots and Pencils will contribute significant hours

Cash: SRC Will fund balance up to \$100,000

4. Documentary

\$250,000 total - \$125,000 Cost-Share

American Resilience Project

Our collaboration will seek a corporate and or personal sponsor for a [Current Revolution segment](#). See [Unleashing the Power of Data Standardization](#)

5. Outreach and Education

\$100,000 Total - \$50,000 Cost Share

Digital 360 Summit

Our collaboration will host pre-summit working sessions for establishing the data sets and expanding XBRL, OB JSON, FDX to support the Model Digital Ecosystem for Community Resiliency. Collaboration will provide a digital infrastructure panel during the 2023 Digital 360 Summit. See [2020](#) and [2022](#) panels

Texas A&M

Collaborators and participants have the option to engage with Texas A&M University to learn about their research and participate in some of their pilot projects.

Outreach and Education - Texas A&M University

The Accelerated Capital Project Formation (ACPF) research initiative at Texas A&M University (TAMU), led by Dr. Stephen Mulva, Research Professor of the Practice in the Department of Construction Science (COSCI) in the School of Architecture (SOA at TAMU), provides a global hub for advanced project planning and execution for capital projects and programs for Facilities & Infrastructure (F&I), which are technically and managerially complex. Its main goal is to leverage and integrate, within architecture, engineering, procurement, and construction capital projects, the knowledge and experience stemming from the best and most advanced concepts and developments from multiple business and technical knowledge domains, to (1) enable the creation of an agile, resilient, affordable, predictable, and reliable ecosystem for the execution and delivery of F&I capital programs and projects in any sector of the economy; and (2) improve the Return on Investment (ROI) performance by overcoming the rising transactional costs, waste, and delays that today's investors, businesses, and government agencies in the U.S. and around the world face as a result of the traditional approaches to the planning, architecture and engineering design, procurement, construction, and operations and maintenance of F&I.

The foundation to achieve this goal and these two breakthrough gains is a shift of focus from project management premised on the bespoke nature of F&I and the improvement of work processes, to a strong focus on a business process orientation based on standardization and program management. The overall strategic goal of the ACPF is to build on this foundation an ecosystem of alignment, trust, and collaboration within all facets of execution and delivery of F&I capital programs and projects, combined with optimal arrangement of stockholders and stakeholders, financing, enabling technologies, and commercial provisions. More specifically, ACPF tactical objectives include the development of: (1) a neighborhood-based commercial environment (for acquisition and contracting); (2) a transcendent production environment (for manufacturing and assembly); (3) a revitalized logistics environment (for supply chain, risk handling, and work instructions); and (4) a novel measurement environment (for progress monitoring and benchmarking).

The ACPF research initiative is one of the cornerstones of the Institute for Sustainable Communities (ISC) at TAMU, led by Dr. Jorge Vanegas, Professor of Architecture (ARCH) in the SOA and Professor of Civil and Environmental Engineering (CVEN) in the College of Engineering (COE). Through high-impact service learning, high-impact engaged research, and high-impact engagement with society at a community level, the ISC is building capacity within communities in four interdependent and cohesive thrust areas: (1) community livability, structured around the 17 United Nations Sustainable Development Goals as parameters of livability; (2) community resilience to disasters and traumas caused by natural phenomena and human actions, structured around preparedness, mitigation, response, and recovery; (3) community sustainability in the natural, built, virtual, and social environments; and (4) smart and cognitive technologies to support livability, resilience, and sustainability.

The overall strategic goal of the ISC is to enable quality of life for people, quality of place in the natural, built, virtual environments, and quality of human endeavors in the social environment.

More specifically, ISC tactical objectives include the application of: (1) an alignment process to identify and bring together community stockholders and stakeholders and develop a vision of the future that the community aspires to have; (2) a convergent process that, through research, development, demonstration, deployment, evaluation, and dissemination, responds to community drivers – questions to answer, problems to solve, needs to satisfy, opportunities to realize, and aspirations to fulfill; (3) a divergent process, which based on creative, innovative, design, entrepreneurial, and digital thinking, responds to community drivers with new products, processes, services, experiences, business models, and enablers, obstacle-removers, and barrier-breakers; and (4) a process to manage ecosystem connectivity and change.

The ACPF and the ISC fully support this concept paper.

How the project addresses the topic area’s eligible uses and technical approaches.

Data standards enable and enhance interoperability.

Without data standards there is no meaningful interoperability.

Adopted data standards enable software developers to design the Data Architecture of Systems to be able to engage in a digital ecosystem

Without data standards there is no architecture to align with

Data standards enable the accelerated implementation of digital construction management systems as called for in the IJA and IRA.

Without data standards digital construction management systems cannot reliably or cost effectively exchange data

How the project supports State, local, Tribal, community and regional resilience, in reducing the likelihood and consequences of disruptive events, decarbonization, or other energy strategies and plans.

Our collaboration has previously responded to the DOE RFI and FOA - Formula Grants to States and Indian Tribes for Preventing Outages and Enhancing the Resilience of the Electric Grid. We also responded to the RFI regarding performance data on solar systems. Those recommendations provided in the June 1st and September 25th RFI responses with [companion website](#) for additional detail and links are incorporated into this response below.

June 1, 2022 - Response to DOE Request for Information

Preventing Outages and Enhancing the Resilience of the Electric Grid

Recommendation #1 – Effective Cyber Protection

Data interoperability and asset monitoring introduces potential cyber vulnerabilities that need to be addressed in tandem with each individual business case. Every business case should identify cyber vulnerabilities and include a response plan to promote secure and reliable data exchange.

1a Utility Scale – Covering utility scale generation, transmission and grid resiliency

1b Commercial – Providing businesses with polices and procures that enable risk management and insurance.

1c Residential - Providing homeowners with clear and simple guidelines to protect their energy systems.

Recommendation #2 – Codify

Expand the XBRL and JSON taxonomy to incorporate [Orange Button utilized data sets](#) recorded and validated on blockchain

2a Project profiles for procurement and permitting.

2b Company profiles for efficient data exchange.

2c Finance, Insurance and Surety Profiles

2d Energy Monthly Operating Reports

2e Construction Progress Reports and Payments

Recommendation #3 – Implement

Engage with digital ecosystems to reduce the transactional (soft) cost of building infrastructure projects while improving administration, underwriting, AI and risk management for all stakeholders.

3a Expand SBA XBRL functionality

3b Implement smart contracts and blockchain that enhance governance and integrate with finance, insurance and surety.

3c Accept digital surety bonds with online bond validation by surety industry platform and/or company URL on [T-List](#)

3d Provide digital standardized periodic (weekly / monthly) project information to all project stakeholders.

Recommendation #4 – Engage with Next Generation Innovation

Engage with the Orange Button collaboration on the “Any City” [Model Digital Ecosystem for Community Resiliency](#) for insights towards compliance with the Financial Data Transparency Act.

Explore the potential role of cryptocurrency and blockchain “*to tackle climate change as it relates to grid management and reliability, standards, and sources of energy supply*” towards compliance with [Executive Order Section 5.b.vii.](#)

November 18, 2022 – Response to DOE Request for Information

U.S. Department of Energy RFI DE-FOA0002876

Cost and value of acquiring, accessing, and sharing solar photovoltaic system performance data.

Addendum - Proposal for Model Digital Ecosystem for Community Resiliency

Submission Overview

This RFI is focused on specific technical performance data related to solar asset management and the impact on system design and maintenance.

This submission offers a long-term objective to establish key general data elements for multi-industry data interoperability to enable digital ecosystems for infrastructure, including solar, by leveraging open data standards like XBRL, Orange Button Open API, FDX and others.

Participants in this submission may also submit responses to this RFI that address the technical aspects.

The Orange Button and OS2 initiatives have an extensive network of entities that are collaborating on several high-level strategies to improve the infrastructure ecosystem to deliver greater capital efficiency for owners while simultaneously improving profitability for all the various stakeholders engaged.

Creating a digital ecosystem that can leverage performance data beyond single system administration to include finance, insurance and surety that aligns public and private systems across market sectors requires both long term objectives for planning and short-term steps to generate revenue and momentum.

Executive Summary

Performance Data for Solar Photovoltaic Systems has as its primary purpose to inform the asset owner on how their system is functioning so that timely corrective actions can be taken if needed.

A secondary purpose and just as critical to the asset owner is the utilization of standardized data to access products and services related to finance, insurance and surety. Direct benefits can include better finance terms, better insurance coverage and access to surety credit for securing financial guarantees.

A third purpose is for benchmarking across a wide range of asset owners to develop a better understanding of best practices and to assist grid administrators with planning. While important there is no direct benefit to the asset owner, but a benefit to all stakeholders over time.

With adopted data standards the direct benefit will promote the transition to digital by developers and accelerate implementation of digital construction management systems as called for in both the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA).

Our responses to RFI questions are motivated by the vision of a model digital ecosystem from the perspective of all stakeholders, public and private, and based on the continued expansion of XBRL, Orange Button JSON, FDX and other open data standards to accelerate the transition to digital by expanding data interoperability.

Background Introduction

The structure and design of the digital ecosystem has been widely studied and the subject of various private and trade association initiatives along with multiple FOAs that have resulted in

public/private collaborations, in particular: the initial DATA Act, the Orange Button efforts, Construction Progress Coalition, Financial Data Exchange (FDX), ConsensusDocs and the CURT-CII OS2 initiative at University of Texas Austin.

There are two separate uses for performance data relating to a solar facility –

1. Construction performance – Is contractor performance meeting requirements.
2. Ongoing operations – Is system performance meeting requirements.

The challenge is not technology, it is establishing consensus around data sets and data interoperability standards across market segments and public agencies and then implementing these standards.

Establishing key data sets and enabling mapping those data sets from any data source to XBRL will enable data interoperability across industry sectors, public and private.

To accelerate implementation of data standards on May 24, 2022 Senators Mark Warner and Mike Crapo introduced S.4295 - [the Financial Data Transparency Act](#) to require all that federal agencies implement open data, including the requirement to “harmonize and reduce the private sector's regulatory compliance burden, while enhancing transparency and accountability, and for other purposes”. We refer to it as DATA Act 2.0.

In response to the DOE RFI regarding “Preventing Outages and Enhancing the Resilience of the Electric Grid” we set up a “[Digital Ecosystems for Energy Grid](#)” website for internal outreach and collaboration for our June 1st submission of recommendations and submitted a corresponding non-traditional grant request on September 25th based on those recommendations and in support of DAT Act 2.0.

Included in that response to the DOE are recommendations that include Performance Data for Solar Photovoltaic Systems.

Concluding Recommendations

1. Adopt the recommendations outlined in the June 1st submission to the DOE RFI for “Formula Grants to States and Indian Tribes for Preventing Outages and Enhancing the Resilience of the Electric Grid”
2. Support the non-traditional grant request of September 25th to fund:
 - a. \$2M for the continued expansion of XBRL
 - b. \$30M for the proposed Model Digital Ecosystem for Community Resiliency.
Proposal attached as an addendum.

3. Expand the Orange Button taxonomies (both XBRL and OpenAPI implementations) to enhance interoperability with existing IECRE and IEEE solar system performance data sets¹
4. Leverage SolarApp data sets for residential permit data. An Orange Button compliant interface for SolarApp is in development.
5. Leverage DATA Act 2.0 to align government and private data reporting utilizing the XBRL taxonomy and industry recognized data standards.
6. Engage with trade association initiatives like OS2 to establish data interoperability and new approaches to infrastructure construction based on capabilities enabled by standardized data.

FOA Specific Responses

The grid-benefitting outcomes to be delivered by the project.

The collaboration will demonstrate how XBRL enabled cross market sector data interoperability can accelerate the implementation of digital construction management systems to reduce the estimated 40% waste in construction, align public and private data, reduce soft costs for building clean energy facilities from the smallest solar carport to the largest utility scale project, improve risk management and expand opportunities for small and local businesses.

The impact of the project to reduce innovative technology risk; achieve further deployment at scale; and lead to additional private sector investments.

Ongoing collaboration continues to expand the utilization of open data for secure and reliable data interoperability to achieve greater functionality, expanded engagement with more market segments and their respective trade associations for accelerating the implementation of digital transactions.

Adopted and implemented data interoperability reduces technology risk by providing the confidence in the ability to engage with a digital ecosystem to deliver innovative products and services.

Open standards enable innovation of next generation products and services and promotes competition.

¹ [IECRE 61724](#) (UL)

IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications

[IEEE 1526-2020](#) - Testing the Performance of Stand-Alone Photovoltaic Systems

The impact that DOE funding would have on the proposed project.

Open standards that provide a public benefit for all stakeholders without cost or constraint does not present a compelling business case for any private entity to fund.

DOE funding would provide the public benefit and could then be monetized by private entities and leveraged by public agencies.

The readiness, viability, and expected timing of the project.

DOE leadership has already created reliable and secure open data standards that can be utilized by multiple stakeholders in a digital ecosystem – [Green Button](#) for energy consumption, [Orange Button](#) for energy production, [SolarApp](#) for permitting, [inspection standards](#) to establish baseline monitoring and [Outage Data](#) for better analytics.

Proposed timeline

January 27, 2023 - DOE response and feedback

Before March 17, 2023

1. City of Novato formally considers the prospect of being a host city and develops a preliminary budget to administer the project. Note: timeline subject to City regulatory process.
2. Contractor prepares budget for Solar and Storage on all campuses
3. Earthgrid prepares budget for underground tunnels to connect all 17 campuses and create an underground community micro-grid.
4. Electric School Bus company prepares budget for electric school bus fleet
5. Construction Lead prepares a formal proposal to the City of Novato as the prime contractor coordinating all aspects of the project.
6. XBRL US establishes budget to undertake the review and comment period for expanding the XBRL taxonomy with all the additional data elements identified in the process of developing the model digital ecosystem with all the stakeholders
7. Collaborators prepare to submit data elements to XBRL to facilitate the data sets identified in the June 1st DOE, recommendation #2

March 27th, 2023 - Formal Response and Proposed Budget

Summer 2023 - Selection Notification

8. City of Novato undertakes regulatory process to act as project host city, receiver of the grant, and project owner under a prime contract with construction lead administering the digital “community” with smart contract and blockchain.
9. Construction lead prepares a total project budget administered as a digital “community”, negotiates subcontracts that implement smart contracts and blockchain, and negotiates a construction “smart contract” with the City of Novato
10. Collaboration group identifies the initial data sets and associated data elements to be incorporated into the XBRL taxonomy.
11. Collaborators prepare an outreach, education and engagement strategy with trade associations and industry events.

Fall 2023

DOE Award

August 2023

12. City of Novato and construction lead enter into prime “smart contract” with blockchain.
13. City of Novato and Electric School bus company into “smart contract” with blockchain.
14. Construction lead enters into subcontractor “smart contracts” and coordinates with electric school bus company
15. XBRL US opens the process to submit data elements for incorporation into the XBRL taxonomy

September 2023

16. Construction begins
17. Outreach Presentation at the Digital 360 Summit

November

18. Solar and Storage installed (subject to supply chain and regulatory)
19. Electric school bus fleet operational

December

20. Underground tunnel connecting all 17 campuses is operational

January 2024

21. Model Digital Ecosystem is complete
22. XBRL US undertakes review and comment period for all the additional data elements that have been added to the XBRL taxonomy

Summary

Enhancing Interoperability and Data Architecture of Systems will require data interoperability between multiple systems enabled by data standards. XBRL will not be the data standard for every stakeholder or industry segment, but the XBRL taxonomy can provide adopted data terms, definitions and structure that any system can map to. The data sets will provide every stakeholder with the data elements to exchange for the most common data exchange requirements.

Each of the collaborators and every stakeholder has specific needs to their industry or activity that is best served by trade associations and the marketplace, and each has independent value

When there is synergy between industry silos towards an open standards based digital ecosystem that enables any system to securely and reliably exchange data, the sum of the whole is far greater than the sum of the parts

Enhancing Interoperability and Data Architecture of Systems will require that synergy

This concept brings the potential of that synergy to reality.

Further Information

Submissions to DOE

[Formula Grants to States and Indian Tribes for Preventing Outages and Enhancing the Resilience of the Electric Grid](#) (June 1st and September 25)

Orange Button

[SunSpec Alliance – Resources](#)

[Orange Button Taxonomy](#)

[Orange Button Data Element Reference](#)

[Orange Button XBRL Taxonomy Guide](#)

[XBRL Application Programming Interface \(API\)](#)

Presentations

- [Orange Button Response To 2018 PG&E Request For Abstract](#)
- [2018 Global Climate Action Summit](#)
- [Model Digital Ecosystem for Community Resiliency](#)
- [Data Harmonization Strategies: Scaling Up Solar Projects & Mitigating Financial Risks](#)
- [2020 UN Great Reset Unleashing the Power of Data Standardization](#)
- [Digital Ecosystem for Infrastructure Reliability - Attracting Capital and Financial Markets to Infrastructure](#) - UC Berkeley Center for Catastrophic Risk Management

Digital 360 Summit

2022 - [Digital Infrastructure Panel](#)

[OS2 Overview](#) at the 2022 Digital 360 Summit

2020 - [New Financial Tools](#)

2019 - [New Regulations, Financial Tools, and Business Models](#)

[Energy Storage Best Practice Guide: Guidance for Project Developers, Investors, Energy Companies and Financial and Legal Professionals](#)

Chapter 4: Technical Performance- Data Interoperability

Appendix 1: [Chronology and Historical Resource](#)

Appendix 2: [Leadership and Resources](#)

Appendix 3: [Global Climate Action Summit Impact Event](#)

Chapter 7: Risk Management- Surety

IIJA and IRS – Accelerating the implementation of digital construction management systems

- Bentley - [The U.S. Infrastructure Investment and Jobs Act: What to Expect and How to Prepare for Construction Technology Funding](#)
- Ryvit - [The Infrastructure Investment & Jobs Act \(IIJA\) is here.](#)

Other

[Does the Architectural, Engineering, and Construction industry need a UNIVERSAL PROJECT ID? Is Digital Project Delivery Ready to Support the Net-Zero Transition?](#)

[California AB-1223 Construction contract payments: Internet Web site posting](#)



Concept Papers Due: December 16, 2022
DOE Response to Concept Papers: January 27, 2023
Full Applications Due: March 17, 2023

**Department of Energy (DOE)
Grid Deployment Office (GDO)
Office of Clean Energy Demonstrations (OCED)**

BIL – Grid Resilience and Innovation Partnerships (GRIP)

Funding Opportunity Announcement (FOA) Number: DE-FOA-0002740

Group Concept Paper – Surety Resource Connection Enhancing Interoperability and Data Architecture of Systems

Submission to the DOE

2022 12-16 Smart Grid Grants - SRC Concept Paper - FOA Submission - Community Benefits Plan

Community Benefits Plan

Community and labor engagement leading to negotiated agreements;

Enhancing Interoperability and Data Architecture of Systems will enable software developers to innovate next generation products and services that reduce the soft costs of solar (Orange Button) improve the efficiency of construction (OS2 Initiative and Construction Progress Coalition) and improve access to finance, insurance and surety (Financial Data Exchange).

The greatest impact of a digital ecosystem will be expanding opportunities for small businesses to build clean energy projects, and for more consumers to have access to affordable finance, insurance and surety.

Impact of the IJJA, IRA and state and local incentives

On the positive side the incentives to install clean energy facilities contained in the IJJA and IRA, along with the many state and local incentives, will create huge demand for all the components that make up a project; planning, permitting, construction, supply chain, finance, insurance and surety to name just a few.

On the negative side this demand will exceed the supply of qualified builders and expose the consumer and their communities with increased costs and potential for contractor default.

On the positive side this demand will provide opportunities for lenders to provide financing to more borrowers.

On the negative side, access to affordable financing can be a challenge for those who credit scores are below premium grade.

Data interoperability that streamlines administration for all stakeholders, reduces costs and increases risk management will improve access to bank and surety credit to a wider range of consumers and communities by addressing those negative aspects.

Examples:

Insurance brokers and surety markets that can efficiently exchange data with surety markets targeting small transitional risk will be more inclined to work with small contractors and consumers.

Insurance brokers and surety markets that can efficiently exchange data with the SBA can provide support to consumers and lenders where SBA support can make the difference in the loan or surety bond being approved.

See June 1st recommendation 3a - Expand SBA XBRL functionality

Insurance brokers and surety markets that can efficiently exchange data with the SBA can provide support to small local solar installation companies to enable startup's and small businesses to compete while protecting the consumer.

See: [Administrator Guzman Announces Streamlined Support for Local Infrastructure Contractors with Improved Surety Bond Process](#)

[Option for Prior Approval Sureties to Submit the “Work in Process” Information Required by SBA Form 994F through eXtensible Business Reporting Language \(XBRL\)](#)

[SBA Procedural Notice](#)

Consumers and lenders that want to participate in On Bill Repayment programs can leverage data interoperability to reach more consumers.

Investing in job quality and workforce continuity;

Employment in clean energy related companies has been steadily growing, and with the IJA and IRA and other incentives the opportunity that growth opportunity will be accelerated.

Projects and service providers that are enabled with data interoperability will be innovating next generation products and services for that increased demand, creating more job opportunities beyond just construction.

Data interoperability enables companies to efficiently offer products and services to small and local businesses and consumers that would have been to cost inefficient if processed manually.

Advancing diversity, equity, inclusion, and accessibility; and

Enabling companies to leverage data interoperability to innovate new products and services targeting small businesses and consumers will open up opportunities for everyone, particularly those where the inefficiency of manual processing made them unprofitable to work with.

Contributing to the Justice40 Initiative goal that 40% of the overall benefits of certain climate and clean energy investments flow to disadvantaged communities.

Unleashing the power of data standardization will have a significant impact on resources made available to everyone.

Expanding SBA functionality with XBRL will make sure the resources make an impact on meeting the target of 40% going to disadvantaged communities.



Concept Papers Due: December 16, 2022
DOE Response to Concept Papers: January 27, 2023
Full Applications Due: March 17, 2023

**Department of Energy (DOE)
Grid Deployment Office (GDO)
Office of Clean Energy Demonstrations (OCED)**

BIL – Grid Resilience and Innovation Partnerships (GRIP)

Funding Opportunity Announcement (FOA) Number: DE-FOA-0002740

Group Concept Paper – Surety Resource Connection Enhancing Interoperability and Data Architecture of Systems

Submission to the DOE

2022 12-16 Smart Grid Grants - SRC Concept Paper - FOA Submission - Addendum A

Background on the Project Team to demonstrate they have the skill and expertise needed to successfully execute the project plan;

The Following links will provide background on the collaboration team.

Note: This group concept has numerous areas of overlap and mutual interest for accelerating the transition to digital, but also has IP and confidentiality considerations. Participation is voluntary and there are no endorsements, preference or exclusivity to any standard, process, product, or service.

[SRC Digital Insurance Services](#) (SRC) is an innovation company/insurance agency developing next generation surety and risk management tools and resources.

Orange Button Collaboration/XBRL US

[Orange Button Website](#)

[XBRL US](#)

[Orange Button Taxonomy Viewer](#) - [Working Group](#)

[SunSpec Alliance](#) – Completed multiple DOE contracts including DOE Orange Button

[Blu Banyan](#) – Developed [SolarSuccess](#), an award-winning NetSuite application optimized for residential and commercial solar installers. A leading supporter of the US Department of Energy’s Orange Button initiative to establish an Open Data Exchange Format for the solar industry.

[OS2 Initiative](#)

Texas A&M University

[School of Architecture - Department of Construction Science](#)

[Institute for Sustainable Communities](#) (ISC)

Accelerated Capital Project Formation (ACPF)

[PrairieDog Venture Partners](#) - PrairieDog’s innovative transactional platform is transforming the global construction industry with blockchain-powered Smart Contracts.

[Earthgrid](#) - Building a subterranean network of tunnels to rapidly eliminate fossil fuels

[Construction Progress Coalition](#) - Industry group focused on construction technology

[Financial Data Exchange](#) - Industry group focused on lending institution technology

[Digital 360 Summit](#)- Annual meeting focused on the digital transformation of the energy grid

[American Resilience Project](#) – Documentary being produced on the transition of the energy grid.

Prior experience that demonstrates an ability to perform tasks of similar risk and complexity
 The collaboration group has extensive experience in similar risk and complexity.

Worked together with its teaming partners on prior projects or programs
 Various members of the collaboration group has worked together in responding to previous DOE RFI and FOA's and

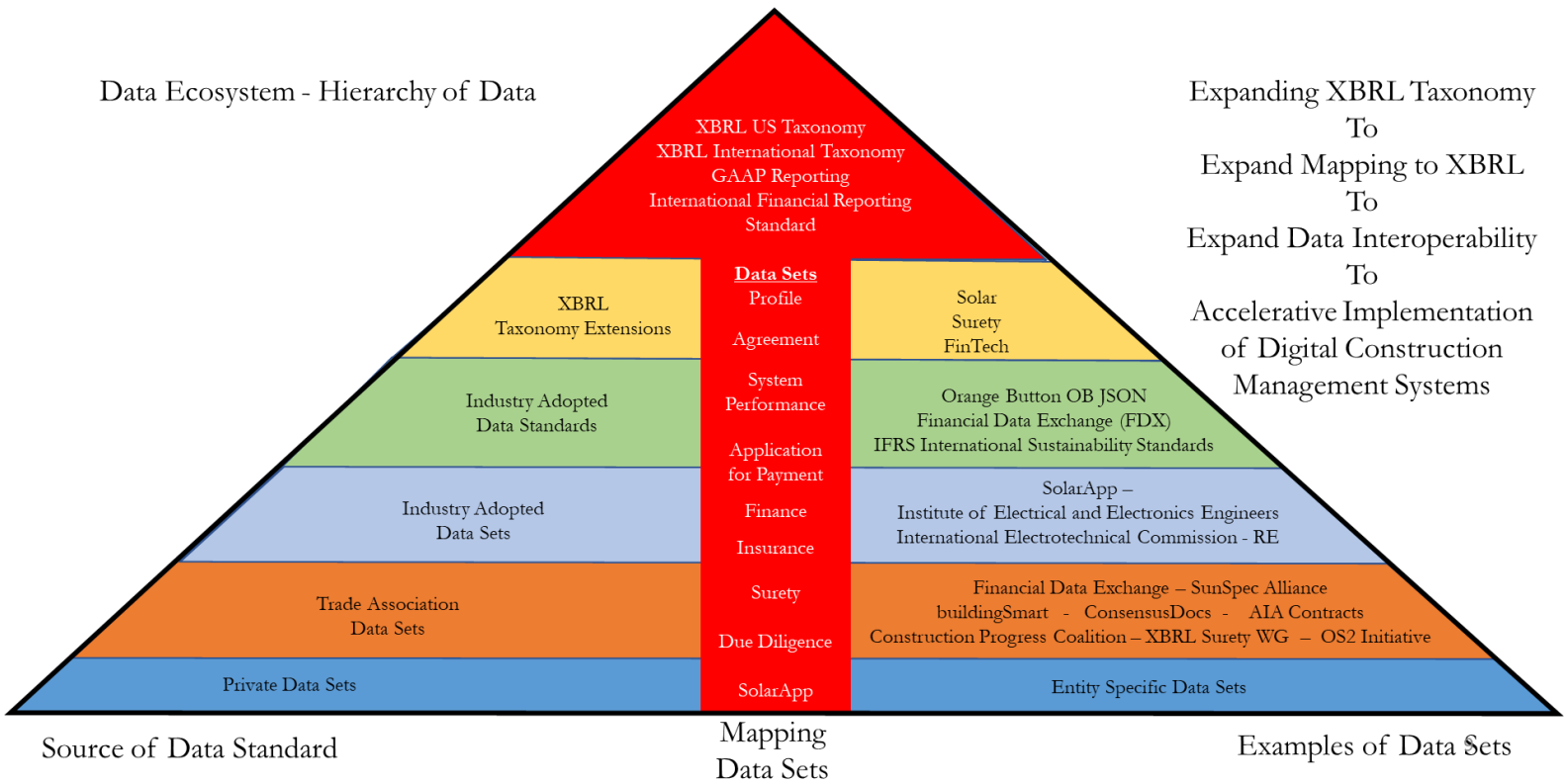
Adequate access to equipment and facilities necessary to accomplish the effort
 XBRL has already expanded the taxonomy as part of Orange Button and will utilize the same process.

The City of Novato has overseen multiple projects and full capable to oversee the prime contract.

The construction of the Model Digital Ecosystem for Community Resilience will be performed by contractors that are bonded with performance and payment bonds.

Graphs, charts, or other data to supplement their Project and/or Technology Description.

**Enhancing Interoperability and Data Architecture of Systems
 Concept - Unleashing the Power of Data Standardization**

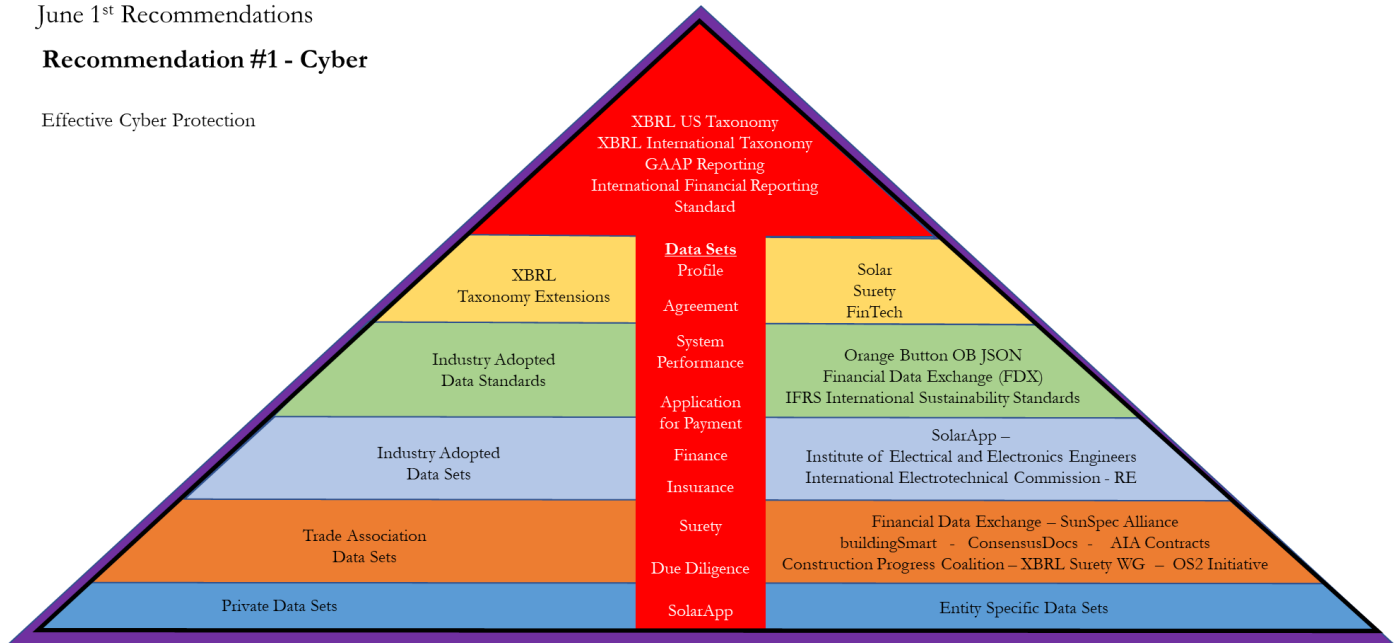


Surety Resource Connection – Collaboration Proposal
 Expand XBRL Taxonomy for Model Digital Ecosystem for Community Reliability
 Enhancing Interoperability and Data Architecture of Systems
 FOA Number: DE-FOA-0002740

June 1st Recommendations

Recommendation #1 - Cyber

Effective Cyber Protection



13

June 1st Recommendations

Recommendation #2 – Codify

Expand the XBRL taxonomy, FDX and JSON to incorporate Orange Button utilized data sets recorded and validated on blockchain

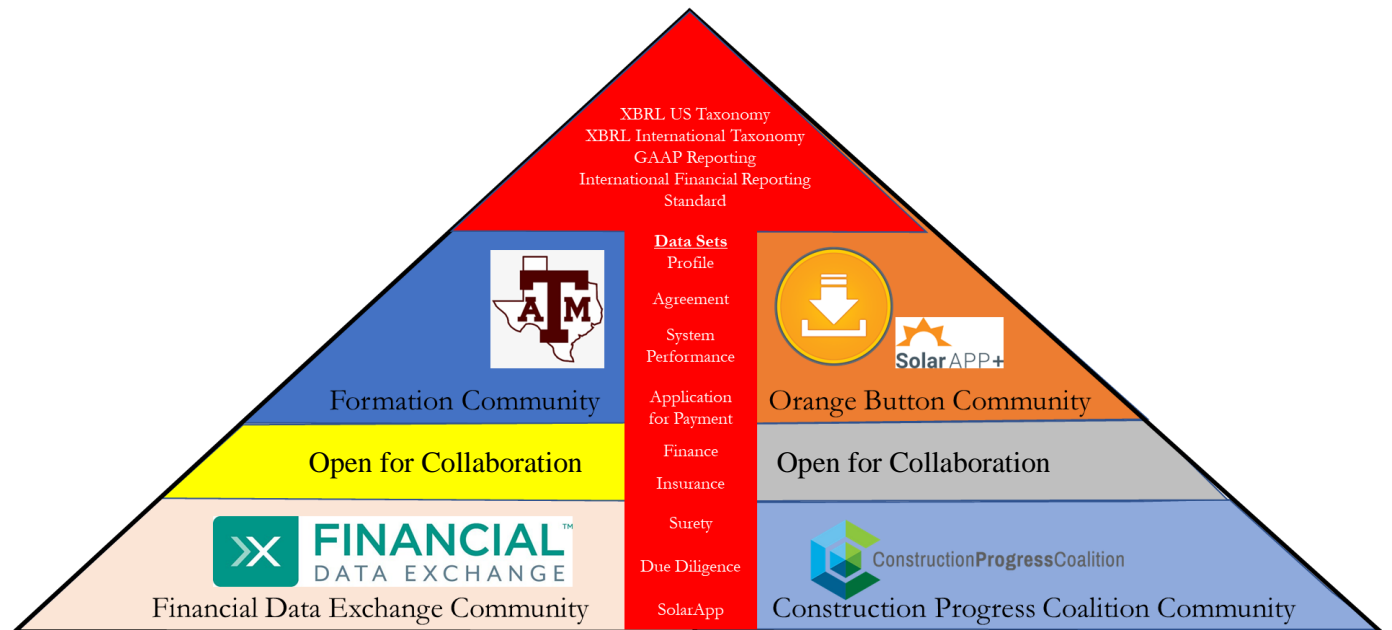
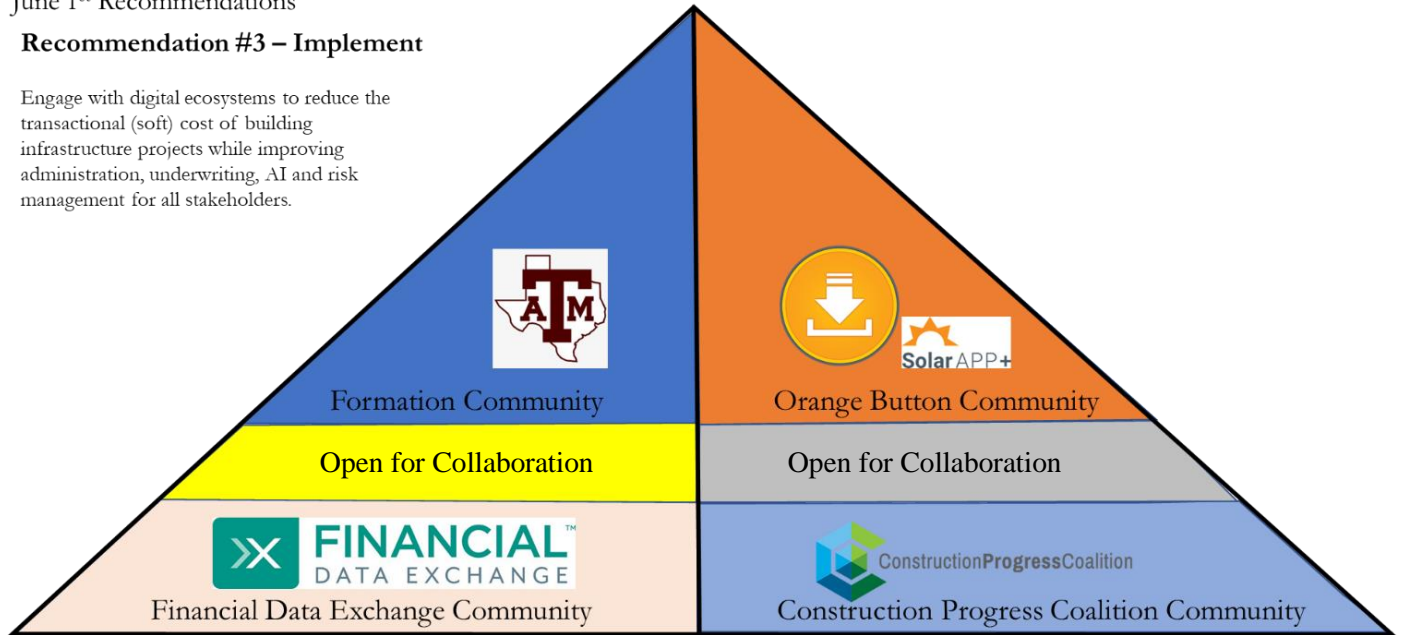


14

June 1st Recommendations

Recommendation #3 – Implement

Engage with digital ecosystems to reduce the transactional (soft) cost of building infrastructure projects while improving administration, underwriting, AI and risk management for all stakeholders.



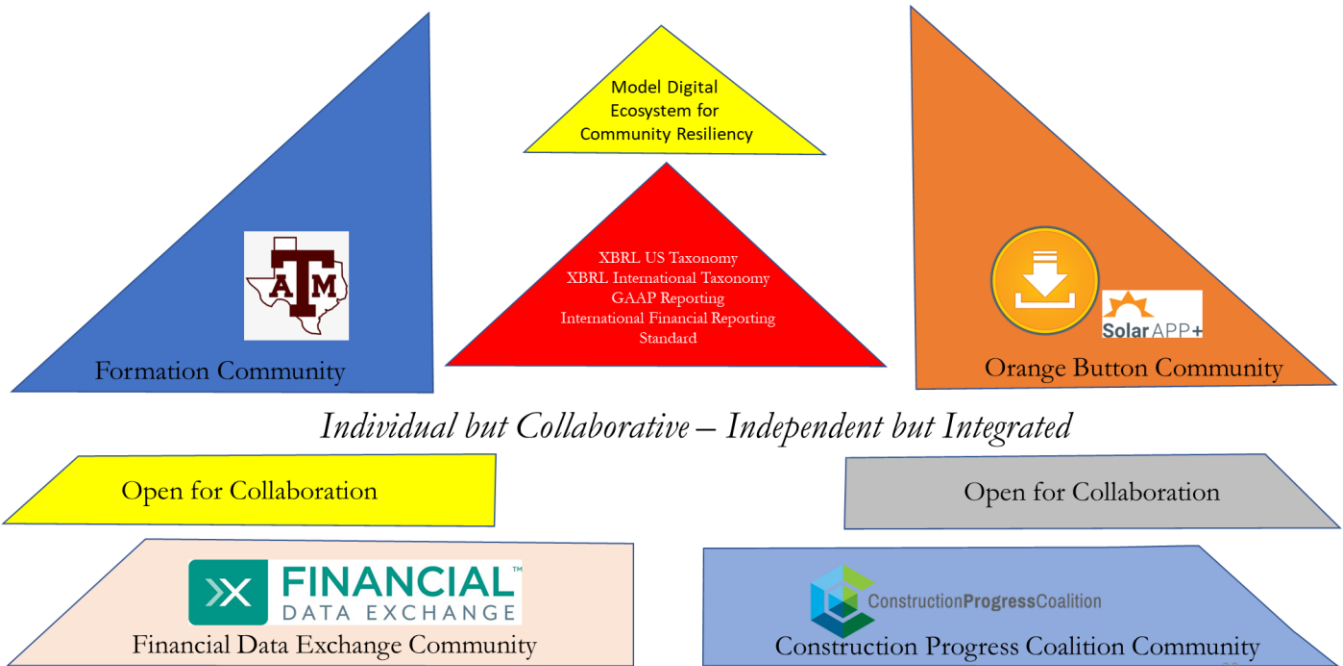
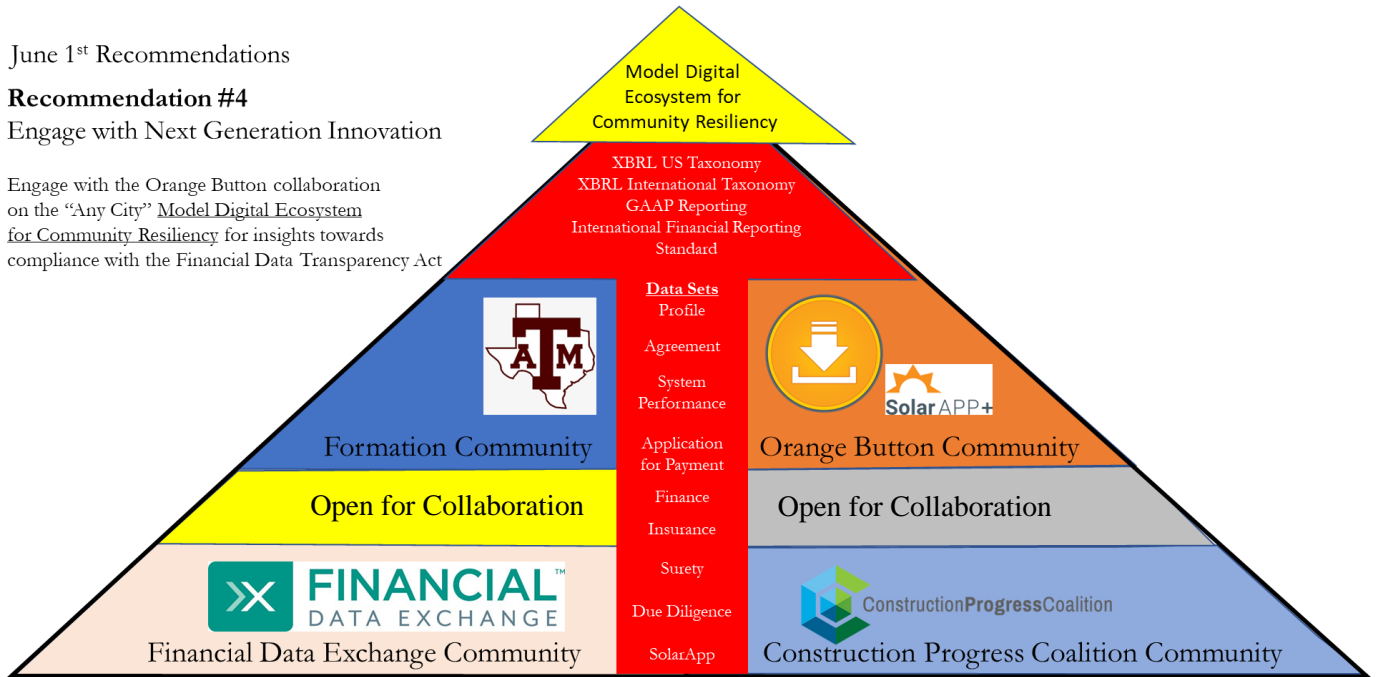
Surety Resource Connection – Collaboration Proposal
 Expand XBRL Taxonomy for Model Digital Ecosystem for Community Resiliency
 Enhancing Interoperability and Data Architecture of Systems
 FOA Number: DE-FOA-0002740

June 1st Recommendations

Recommendation #4

Engage with Next Generation Innovation

Engage with the Orange Button collaboration on the “Any City” Model Digital Ecosystem for Community Resiliency for insights towards compliance with the Financial Data Transparency Act





Concept Papers Due: December 16, 2022
DOE Response to Concept Papers: January 27, 2023
Full Applications Due: March 17, 2023

**Department of Energy (DOE)
Grid Deployment Office (GDO)
Office of Clean Energy Demonstrations (OCED)**

BIL – Grid Resilience and Innovation Partnerships (GRIP)

Funding Opportunity Announcement (FOA) Number: DE-FOA-0002740

Group Concept Paper – Surety Resource Connection Enhancing Interoperability and Data Architecture of Systems

Prior Submissions to DOE

1. June 1, 2022
Response to DOE Request for Information
Preventing Outages and Enhancing the Resilience of the Electric Grid

Section 40101(d) Formula Grant Program of the Bipartisan Infrastructure Law
Preventing Outages and Enhancing the Resilience of the Electric Grid
DATA Act 2.0

Protect - Codify - Implement - Engage

The DATA Act, the nation's first open data law, established the foundation for data interoperability and transparency in financial reporting by establishing and mandating data standards. From that Act came XBRL, a reliable, secure, and open data interoperability standard. This was followed by the DOE Orange Button data interoperability initiative to enable a multi-industry segment digital ecosystem, artificial intelligence (AI), smart contracts and blockchain for building the nation's energy infrastructure as a public benefit.

On May 24, 2022 Senators Mark Warner and Mike Crapo introduced S.4295 - the [Financial Data Transparency Act](#) to require all federal agencies implement open data, including the requirement to *“harmonize and reduce the private sector's regulatory compliance burden, while enhancing transparency and accountability, and for other purposes”*.

Although limited to federal agencies it establishes the foundation for a reliable and trusted digital ecosystem for all stakeholders, public and private. DOE compliance with S.4295 will establish a modern digital ecosystem with improved grid administration capabilities and cyber protection. A key “other purpose” is to accelerate the construction of clean energy facilities while improving access to finance, insurance and surety for all stakeholders.

A reliable and secure digital ecosystem with multiple stakeholders is required for “Preventing Outages and Enhancing the Resilience of the Electric Grid”.

Recommendation #1 – Effective Cyber Protection

Data interoperability and asset monitoring introduces potential cyber vulnerabilities that need to be addressed in tandem with each individual business case. Every business case should identify cyber vulnerabilities and include a response plan to promote secure and reliable data exchange.

- 1a Utility Scale – Covering utility scale generation, transmission and grid resiliency
- 1b Commercial – Providing businesses with policies and procures that enable risk management and insurance.
- 1c Residential - Providing homeowners with clear and simple guidelines to protect their energy systems.

Recommendation #2 – Codify

Expand the XBRL and JSON taxonomy to incorporate [Orange Button utilized data sets](#) recorded and validated on blockchain

- 2a Project profiles for procurement and permitting.
- 2b Company profiles for efficient data exchange.
- 2c Finance, Insurance and Surety Profiles
- 2d Energy Monthly Operating Reports
- 2e Construction Progress Reports and Payments

Recommendation #3 – Implement

Engage with digital ecosystems to reduce the transactional (soft) cost of building infrastructure projects while improving administration, underwriting, AI and risk management for all stakeholders.

- 3a Expand SBA XBRL functionality
- 3b Implement smart contracts and blockchain that enhance governance and integrate with finance, insurance and surety.
- 3c Accept digital surety bonds with online bond validation by surety industry platform and/or company URL on [T-List](#)
- 3d Provide digital standardized periodic (weekly / monthly) project information to all project stakeholders.

Recommendation #4 – Engage with Next Generation Innovation

Engage with the Orange Button collaboration on the “Any City” [Model Digital Ecosystem for Community Resiliency](#) for insights towards compliance with the Financial Data Transparency Act.

Explore the potential role of cryptocurrency and blockchain *“to tackle climate change as it relates to grid management and reliability, standards, and sources of energy supply”* towards compliance with [Executive Order Section 5.b.vii](#).

[More Information](#)



Concept Papers Due: December 16, 2022
DOE Response to Concept Papers: January 27, 2023
Full Applications Due: March 17, 2023

**Department of Energy (DOE)
Grid Deployment Office (GDO)
Office of Clean Energy Demonstrations (OCED)**

BIL – Grid Resilience and Innovation Partnerships (GRIP)

Funding Opportunity Announcement (FOA) Number: DE-FOA-0002740

Group Concept Paper – Surety Resource Connection Enhancing Interoperability and Data Architecture of Systems

Prior Submissions to DOE

September 25, 2022

Response to DOE FOA DE-FOA-0002736

Non-traditional grant request

Formula Grants to States and Indian Tribes for Preventing Outages and Enhancing the Resilience of the Electric Grid

SRC Digital Insurance Services

Novato, California 94949

415-717-1092

September 25, 2022

Patricia Hoffman
Grid Deployment Office
U.S. Department of Energy
1000 Independence Avenue
SW, Washington, DC 20585

RE: FOA Number DE-FOA-0002736
Non-traditional grant request
Formula Grants to States and Indian Tribes for Preventing Outages and Enhancing the Resilience of the Electric Grid

Ms. Hoffman,

The DOE Orange Button initiative brought together over 300 collaborators to bring greater efficiency to infrastructure construction by starting the process of establishing data interoperability for enabling a digital ecosystem based on open standards.

In the spirit of our long-standing collaboration with the DOE we offer this non-traditional grant request to continue the dialogue towards meeting identified objectives through continued public/private collaborations. Accelerating the implementation of digital construction management systems depends on data interoperability. Meeting the administrative demand created by the IJJA and IRA to build a significant number DER's to provide resiliency requires a digital ecosystem. This non-traditional grant request meets objectives of the FOA, IJJA, IRA and can comply with requirements.

Acknowledging this non-traditional approach may not be qualified under the grant program pending DOE review to determine interest. The collaboration is not representing a State or Indian Tribe but would have a State agency if the DOE expressed interest. In the meantime, the FOA does recognize "any other relevant entity, as determined by the Secretary of DOE" and "robust engagement and collaboration with States and Indian Tribes, as well as with other interested stakeholders, including industry, unions, and local communities, for successful implementation of this Program¹".

As our June 1st response to the DOE RFI reflects, this collaboration covers many aspects and involves many public and private stakeholders over an extended period. Our recommendations seek a funding outcome that services the public benefit with no preference or exclusivity to promote competition and innovation, which is contrary to a single applicant for a limited commercial purpose.

¹ DE-FOA 0002736 Page 7 & 8 Preventing Outages and Enhancing the Resilience of the Electric Grid Formula Grants to States and Indian Tribes

Accordingly, this grant funding request is not a traditional application from a single applicant with a narrowly focused objective and detailed budget. Instead, this non-traditional grant request is an invitation for the DOE to continue its financial support and leadership in multiple areas with multiple stakeholders as would be required for the June 1st recommendations.

If consideration can be given there is an extensive history and future collaboration ready to continue working with the DOE to accelerate the implementation of advanced digital construction systems enabled by data interoperability as called for in the IJA and IRA.

Each of June 1st recommendations represent an interrelated component in the holistic approach across various stakeholders. Each have different individual objectives and would necessitate interest expressed by the DOE and a State and/or Tribe to warrant both the time and expense to develop a traditional application and to know which stakeholders need to be engaged.

Expressed DOE interest would also enable discussions to define the scope desired by the DOE, and the engagement of States and Indian Tribes as potential primary grantees.

If there is interest by the DOE a traditional application can be completed to comply with grant requirements and defined scope.

Grant Request – June 1st Recommendation #2

Provide \$2,000,000 in funding to continue the work of the Orange Button initiative to expand Orange Button XBRL and Orange Button JSON to include the data elements identified in 2a to 2e

Grant Request – June 1st Recommendation #4

[Model Digital Ecosystem for Community Resiliency](#)

This grant option continues the tradition of a collaborative public/private effort for a public benefit. The collaboration group will utilize the project to develop and implement a model grant for local governments to develop community “*energy resilience plans and expedite permit review of distributed energy resources by local governments*” as outlined in [California SB-833 Community Energy Resilience Act of 2022](#), with transparency for project funds as required by [AB1223](#) and enabled by the DOE Orange Button/XBRL and SolarAPP.

The proposed model utilizes the old 2015 public report from Kyoto prepared for the City of Novato. Using the still relevant data we can demonstrate how Novato school campuses can be equipped with solar and storage as critical community facilities for resiliency in the event of power outages, with 40 miles of underground micro-grid infrastructure tunnels for additional resiliency, bi-directional power from homes and businesses, and a fleet of electric vehicles and buses with batteries that add even more resiliency.

Preliminary Budget and use of funds:

\$10,000,000	Installing solar and battery storage on all 17 campuses for the City of Novato and the Novato Unified School District
\$12,000,000	Underground infrastructure tunnel for 40-mile network of 2.5-meter diameter tunnels for a community wide microgrid.
\$ 3,000,000	Electric School Bus Fleet
<u>\$ 5,000,000</u>	Host city and school district for administrative costs.
\$30,000,000	

The estimates are provided by companies willing and able to do the work as a collective and transparent undertaking for the public benefit a digital ecosystem would provide everyone.

As noted earlier, the time and expense to prepare the traditional detailed information for applying for grant funding to expand taxonomies and implement the model digital ecosystem for community resiliency is extensive and not warranted without interest and direction from DOE.

Should there be interest in pursuing the recommendations offered in the June 1st response, the resulting discussion and collaboration will result in traditional funding that does meet grant criteria and will accelerate the implementation of advanced digital construction systems.

In closing we appreciate the work of the DOE in administering grants to achieve the most beneficial results for the public and recognize this non-traditional approach may not fit within the constraints of the structured grant program -- but may fit elsewhere.

We look forward to contributing to a successful model.

Sincerely



K. Dixon Wright
President
SRC Digital Insurance Services
California Insurance License 6005678
www.SRC-Digital-Insurance-Services.com
Dixon@SRC-Digital-Insurance-Services.com
415-717-1092



Concept Papers Due: December 16, 2022
DOE Response to Concept Papers: January 27, 2023
Full Applications Due: March 17, 2023

**Department of Energy (DOE)
Grid Deployment Office (GDO)
Office of Clean Energy Demonstrations (OCED)**

BIL – Grid Resilience and Innovation Partnerships (GRIP)

Funding Opportunity Announcement (FOA) Number: DE-FOA-0002740

Group Concept Paper – Surety Resource Connection Enhancing Interoperability and Data Architecture of Systems

Prior Submissions to DOE

November 18, 2022

Response to DOE Request for Information

Cost and value of acquiring, accessing, and sharing solar photovoltaic system performance data.

Addendum - Proposal for Model Digital Ecosystem for Community Resiliency

On November 18th we submitted our response to the DOE RFI regarding performance data, and on the 18th the DOE issued a new funding opportunity, Smart Grid Grants, that ties directly to our request for funding.

U.S. Department of Energy (DOE)
Energy Efficiency and Renewable Energy Office (EERE)
Solar Energy Technologies Office (SETO)
EERE T 540.111-02: Request for Information (RFI)
DOE RFI DE-FOA0002876

Request for Information on the cost and value of
acquiring, accessing, and sharing solar photovoltaic
(PV) system performance data.

SETO seeks responses from all interested
stakeholders in industry.

Cost Benefit of Data Interoperability and the Value of Performance Data

K. Dixon Wright
President
SRC Digital Insurance Services
www.SRC-Digital-Insurance-Services.com
Dixon@SRC-Digital-Insurance-Services.com
415-717-1092

November 18, 2022

Submission Overview

This RFI is focused on specific technical performance data related to solar asset management and the impact on system design and maintenance.

This submission offers a long-term objective to establish key general data elements for multi-industry data interoperability to enable digital ecosystems for infrastructure, including solar, by leveraging open data standards like XBRL, Orange Button Open API, FDX and others.

Participants in this submission may also submit responses to this RFI that address the technical aspects.

The Orange Button and OS2 initiatives have an extensive network of entities that are collaborating on several high-level strategies to improve the infrastructure ecosystem to deliver greater capital efficiency for owners while simultaneously improving profitability for all the various stakeholders engaged.

Creating a digital ecosystem that can leverage performance data beyond single system administration to include finance, insurance and surety that aligns public and private systems across market sectors requires both long term objectives for planning and short-term steps to generate revenue and momentum.

Executive Summary

Performance Data for Solar Photovoltaic Systems has as its primary purpose to inform the asset owner on how their system is functioning so that timely corrective actions can be taken if needed.

A secondary purpose and just as critical to the asset owner is the utilization of standardized data to access products and services related to finance, insurance and surety. Direct benefits can include better finance terms, better insurance coverage and access to surety credit for securing financial guarantees.

A third purpose is for benchmarking across a wide range of asset owners to develop a better understanding of best practices and to assist grid administrators with planning. While important there is no direct benefit to the asset owner, but a benefit to all stakeholders over time.

With adopted data standards the direct benefit will promote the transition to digital by developers and accelerate implementation of digital construction management systems as called for in both the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA).

Our responses to RFI questions are motivated by the vision of a model digital ecosystem from the perspective of all stakeholders, public and private, and based on the continued expansion of XBRL, Orange Button JSON, FDX and other open data standards to accelerate the transition to digital by expanding data interoperability.

Background Introduction

The structure and design of the digital ecosystem has been widely studied and the subject of various private and trade association initiatives along with multiple FOAs that have resulted in public/private collaborations, in particular: the initial DATA Act, the Orange Button efforts, Construction Progress Coalition, Financial Data Exchange (FDX), ConsensusDocs and the CURT-CII OS2 initiative at University of Texas Austin.

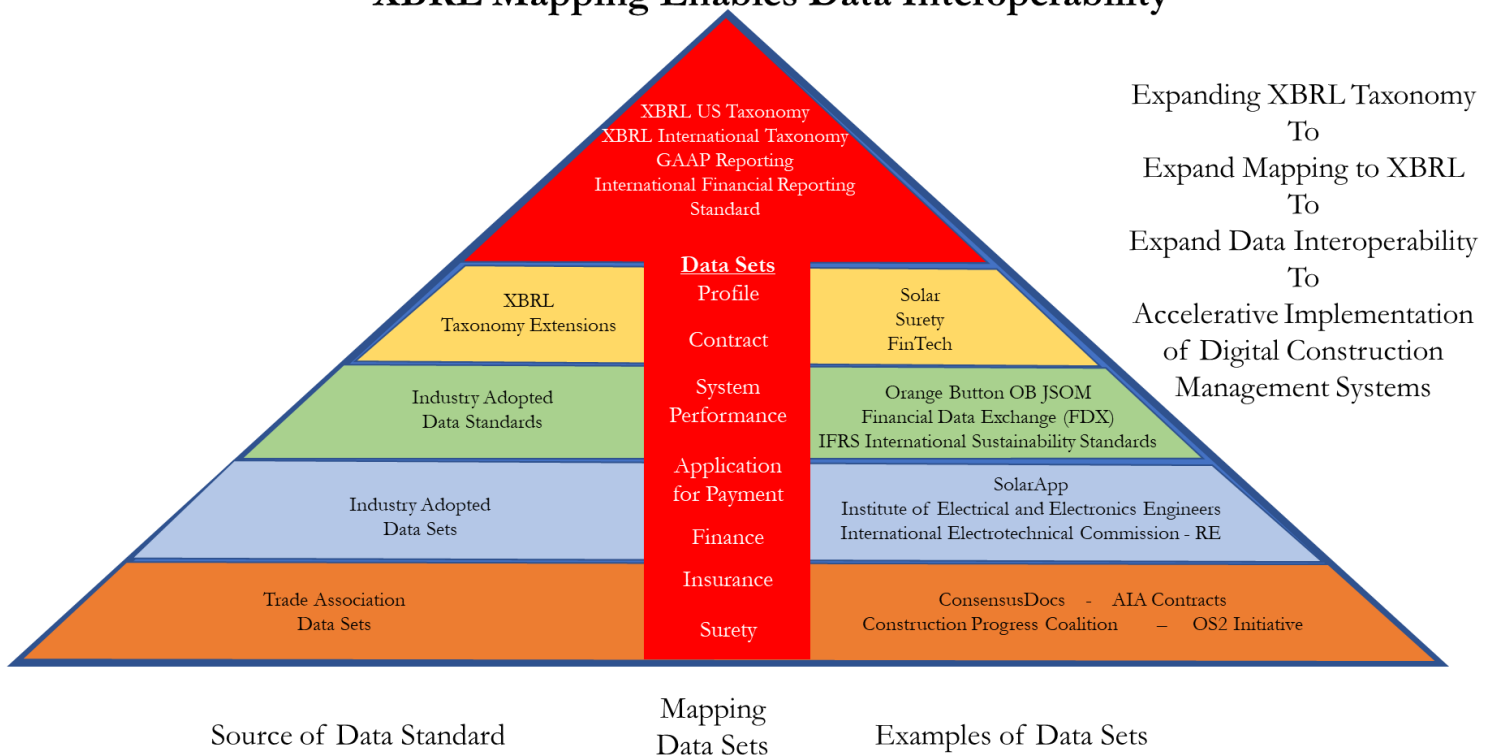
There are two separate uses for performance data relating to a solar facility –

1. Construction performance – Is contractor performance meeting requirements.
2. Ongoing operations – Is system performance meeting requirements.

The challenge is not technology, it is establishing consensus around data sets and data interoperability standards across market segments and public agencies and then implementing these standards.

Establishing key data sets and enabling mapping those data sets from any data source to XBRL will enable data interoperability across industry sectors, public and private.

Data Ecosystem – Hierarchy of Data XBRL Mapping Enables Data Interoperability



To accelerate implementation of data standards on May 24, 2022 Senators Mark Warner and Mike Crapo introduced S.4295 - [the Financial Data Transparency Act](#) to require all that federal agencies implement open data, including the requirement to “harmonize and reduce the private sector's regulatory compliance burden, while enhancing transparency and accountability, and for other purposes”. We refer to it as DATA Act 2.0.

In response to the DOE RFI regarding “Preventing Outages and Enhancing the Resilience of the Electric Grid” we set up a [“Digital Ecosystems for Energy Grid”](#) website for internal outreach and collaboration for our June 1st submission of recommendations and submitted a corresponding non-traditional grant request on September 25th based on those recommendations and in support of DAT Act 2.0.

Included in that response to the DOE are recommendations that include Performance Data for Solar Photovoltaic Systems.

Concluding Recommendations

1. Adopt the recommendations outlined in the June 1st submission to the DOE RFI for “Formula Grants to States and Indian Tribes for Preventing Outages and Enhancing the Resilience of the Electric Grid”
2. Support the non-traditional grant request of September 25th to fund:
 - a. \$2M for the continued expansion of XBRL
 - b. \$30M for the proposed Model Digital Ecosystem for Community Resiliency.
Proposal attached as an addendum.
3. Expand the Orange Button taxonomies (both XBRL and OpenAPI implementations) to enhance interoperability with existing IECRE and IEEE solar system performance data sets¹
4. Leverage SolarApp data sets for residential permit data. An Orange Button compliant interface for SolarApp is in development.
5. Leverage DATA Act 2.0 to align government and private data reporting utilizing the XBRL taxonomy and industry recognized data standards.
6. Engage with trade association initiatives like OS2 to establish data interoperability and new approaches to infrastructure construction based on capabilities enabled by standardized data.

Request for Information Categories and Questions

Category 1: Cost and Value of Data (from a data owner perspective)

Every stakeholder in a solar or clean energy project is a “data owner” with respects to the data. The perspective is unique for each stakeholder in a project, but the cost/benefits are the same.

The cost is relatively low if there are digital ecosystems enabled by open standards that can be implemented across industry segments.

The value or benefits can be extensive, depending on how much the data interoperability is leveraged to secure or offer products or services.

Example is the DOE SolarApp, a single data set for permitting solar projects that can also be used for finance, insurance, and surety. The cost of utilizing the data beyond just the permit is zero, but the benefits can include better financing, lower pricing for insurance or access to surety credit.

¹ [IECRE 61724](#) (UL)

IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications

[IEEE 1526-2020](#) - Testing the Performance of Stand-Alone Photovoltaic Systems

The value of the data is in its interoperability with other stakeholders in a digital ecosystem to reduce administrative costs, improve risk management and lower the total project cost by eliminating waste and improving efficiency.

A reasonable cost and predictable outcomes are warranted by the value and enabled by XBRL.

The following are responses to the specific questions

1. What would be the estimated cost of curating a multi-year, high-quality dataset for a PV system, where that data set is captured at sampling rates of at least one reading every 15 minutes and contains readings from components such as the AC meter, the AC output of the inverter(s), the DC input(s) of the inverter(s), and the weather station?

Developing data without having it comply with an adopted data standard can be very expensive as the data would have little value outside of individual monitoring, so no offsetting benefits.

When the data is consistent with the Orange Button data standards then the data can be utilized by multiple stakeholders and service providers creating many options to leverage the data that offset the cost.

Many of the costs to add capability for performance data elements into the Orange Button taxonomy have already been incurred.

The one-time cost for platform developers to generate a report in a standardized Orange Button format is warranted by the value of the data individually for monitoring and system and compounded by the number of stakeholders that can also utilize the data for finance, insurance, and surety.

The ability for commercial system owners to monitor their systems is already provided by several independent service providers so the costs are known and predictable.

Many residential system owners are provided system performance data as part of their service, so no additional cost.

Primary examples of value are access to finance, insurance and surety for an immediate benefit to specific stakeholders.

Secondary examples are R&D for long-term benefits for all stakeholders.

2. What, if any, would be the added cost per MWDC associated with collecting, storing, and curating data for:

- a. tracker position
- b. string- or combiner-level DC information
- c. energy flows to and from energy storage (if applicable)

No Comment

3. Opportunity cost of data sharing:

- a. What is the perceived opportunity cost or burden for publicly sharing a data set containing historical values (with a lag of at least one year)?

The ROI for contributing to a standardized performance measurement process will be realized over time in better access to finance, insurance, and surety.

The more capital markets know about the risks they are assuming the better the risk management and lower pricing can be secured for financial products and services.

- b. What is the source of the opportunity cost?

Data that is already being generated for internal monitoring

- c. How does recency affect the opportunity cost? (i.e., is there a time lag of a certain number of years after which the opportunity cost drops to zero?)

Depends on the application.

If purchasing insurance or surety where the coverage is the performance of the solar system, then the timing must be close to real time.

If it is for R&D, actuarial purposes, or improvements to risk management, then the timeline can be broader.

- d. Would collecting less precise information help reduce that cost? (e.g., location recorded as gross coordinates with just two decimal places instead of an address or 4 decimal place precision, normalization of power and irradiance values instead of raw values)

Depends on the cost, but the more complete the data the better.

4. Operations and maintenance information:

- a. Aside from cost concerns, what would stand in the way of sharing operations and maintenance information that is concurrent with the time series datasets?

Lacking any standardization of O&M reporting information, shared data is at substantial risk of misinterpretation. O&M data records are not in any standard format, so any sharing requires bespoke interpretation.

Confidential information could be restricted to just those stakeholders that warrant the information.

- b. What would be the estimated cost of curating that dataset?

No Comment

Category 2: Access, Availability, and Value of Data (from a data user perspective)

1. If you are performing or plan to perform R&D related to the performance of PV systems, do you have sufficient data for analysis and validation? If not, what is the most critical missing information? (e.g., length of collection time, variety of system types, sizes, and locations, number of observed variables, completeness and/or fidelity of data)

It is not just about the data; it is the ability to import the data in a format that has the information.

Capital markets are constantly undertaking R&D to determine risk and pricing. Standardized consistent data enables that R&D and performance data sets like [IECRE](#) and [IEEE](#) provide the level of detail.

The missing component is having the various data compliant with the Orange Button taxonomy so they could be utilized more effectively by more stakeholders.

2. What are the minimum and optimum sets of PV system performance variables collected from a standard non-residential PV system (anything bigger than 50 kWDC) that are necessary to perform and validate your R&D project (e.g., modeling of output of DC field, inverters, or entire systems, modeling of impact of soil and snow, identification, classification, and prediction of performance anomalies)?

A system providing the IECRE or IEEE data sets should have all the data necessary to provide R&D.

If not, those data elements needed should be added to the industry adopted data sets and incorporated into Orange Button.

3. What is the value of collecting high-quality time series data from residential systems at higher sampling rates (at least one reading every 15 minutes), given the lack of ground sensor-based irradiance measurements from such systems?

That would depend on its indented use for the data.

4. What are unique parameters regarding the performance of residential systems that cannot be estimated from models or lab-scale prototypes?

No response

5. Accessibility of large datasets:

- a. How much value would be added by an interactive interface for accessing large datasets if that data is already otherwise accessible and accompanied by high-quality metadata (e.g., through an Application Programming Interface—API—or directly from a data repository)?

No response

- b. Do you know of any examples of interactive interfaces for accessing time series data that you consider exemplary?

No response

6. DOE and other federal, state, and local government organizations collect and publicly share some environmental data (e.g., high-quality irradiance data available from the Surface Radiation Budget (SURFRAD) and SOLar RADiation (SOLRAD) networks). Is there a need for additional environmental data that could be collected by government agencies that is not currently captured at a sufficient granularity, rate, and quality, or at all?

No response

Category 3: Value-add Ancillary Datasets (from a system developer/owner perspective)

1. Unavailable data

- a. What data is not currently collected by the operators of your assets that could provide additional value?

Data elements that need to be included include unique identifiers (UUID's) like the [SolarApp site ID](#), The [Legal Entity Identifier \(LEI\)](#), Surety Bond Validation Number (BVN) and the federal [SAMS](#) number.

- b. What advantage could this data provide for the operation and long-term value of the assets?

Connecting various stakeholders to an individual project or portfolio.

- c. What are the barriers to collecting or accessing those data sets?

Data interoperability

2. How does an aerial inspection of the asset impact its optimal operation?

No response

- a. In your experience, what (if any) is the desired frequency of such an inspection?

No response

3. Extreme weather impact

- a. Do you collect data about damage inflicted by extreme weather events, such as hurricanes, derechos, large hail, or floods?

The insurance industry does collect this type of data

If so, what would be the optimal way to leverage the data to support more resilient PV systems?

Defer to insurance colleagues

Addendum

U.S. Department of Energy (DOE)
Energy Efficiency and Renewable Energy Office (EERE)
Solar Energy Technologies Office (SETO)
EERE T 540.111-02: Request for Information (RFI)
DOE RFI DE-FOA0002876

Request for Information on the cost and value of acquiring, accessing, and sharing solar photovoltaic (PV) system performance data.

Model Digital Ecosystem for Community Resiliency For Acquiring, Accessing, and Sharing Solar Photovoltaic (PV) System Performance Data.

100 Stakeholders Collaboration for Transitioning to Digital

Lead by:
SRC Digital Insurance Services

United Nations Sustainable Development Goals

- 7 - Affordable and Clean Energy
- 9 - Industry, Innovation and Infrastructure
- 11 - Sustainable Cities and Communities
- 12 - Responsible Consumption and Production
- 13 - Climate Action
- 17 - Strengthen the means of implementation and revitalize the Global Partnership for Sustainable

November 18, 2022

Model Digital Ecosystem for Community Resiliency

For Acquiring, Accessing, and Sharing Solar Photovoltaic (PV) System Performance Data.

Page 2 of 4

Proposal

SRC Digital Insurance Services (SRC) and various collaborators seek funding to support a collaboration and demonstration project for how XBRL and data interoperability can accelerate the implementation of digital construction management systems to reduce the estimated 40% waste in construction, align public and private data, reduce soft costs for building clean energy facilities from the smallest solar carport to the largest utility scale project, improve risk management and expand opportunities for small and local businesses.

Project – Model Digital Ecosystem for Community Resiliency

The City of Novato will utilize the XBRL taxonomy, Orange Button and the OS2 initiative to upgrade their 17 campuses to be equipped with solar and storage as critical community facilities in the event of power outages, with 40 miles of underground micro-grid infrastructure tunnels for additional resiliency, bi-directional power from homes and businesses, and a fleet of electric vehicles.

Collaboration 100

The collaboration for the digital ecosystem will have an initial stakeholder group of 100 from public and private entities, international and domestic, each working on initiatives in their respective industry sectors or markets.

Where each has their own interests, each subscribes to the basic mission statement

Collaboration 100 Mission Statement

Internationally recognized open data standards and established data sets that enable digital ecosystems to reliability and securely exchange data represent best practices to reduce administrative costs and improve risk management for infrastructure projects.

Preliminary Budget

Funding to the City of Novato of approximately \$30,000,000, subject to formal budget and scope being prepared.

Deliverables

The proposed Novato California micro-grid will demonstrate how XBRL and data interoperability will enable an extended public/private digital ecosystem, promote innovation and competition, plus provide grid resiliency that can be replicated by other communities

• UN Sustainable Development Goals

7 - Affordable and Clean Energy

Reduce the administrative costs of permitting and construction

Increase risk management capabilities to reduce exposure to lenders for better terms.

9 - Industry, Innovation, and Infrastructure

Accelerate the implementation of digital construction management systems, public and private.

Model utilizes open standards, so software developers have no constraints, trademarks or exclusivity to implement data exchange.

11 - Sustainable Cities and Communities

Model Digital Ecosystem can be easily replicated without changing software platforms.

SoalrApp is ready to be implemented to help reduce administrative costs and speed up timelines for permitting solar projects

Model Digital Ecosystem for Community Resiliency

For Acquiring, Accessing, and Sharing Solar Photovoltaic (PV) System Performance Data.

Page 3 of 4

12 - Responsible Consumption and Production

The demand for energy will put pressure on generation and meeting demand will be a challenge.

Enabling the production of clean energy to be more efficient so clean energy can be price competitive to fossil fuels will drive responsible consumption and production.

13 - Climate Action

Accelerating the construction of all clean energy infrastructure projects that connect to the smart grid is direct climate action.

17 -Strengthen the means of implementation Revitalize the Global Partnership for Sustainable Development

Expansion of the internationally recognized XBRL Taxonomy for infrastructure related data elements will promote and enable global partnerships.

Engagement with the California-China Climate Institute and XBRL for China financial markets

- June 1st recommendations to the DOE

- 1 A cyber response plan to promote secure and reliable data exchange
 - a. Utility Scale – Covering utility scale generation, transmission and grid resiliency
 - b. Commercial – Providing businesses with polices and procures that enable risk management and insurance.
 - c. Residential - Providing homeowners with clear and simple guidelines to protect their energy systems.
- 2 Expand the XBRL taxonomy and JSON to incorporate [Orange Button utilized data sets](#) recorded and validated on blockchain
 - a. Project profiles for procurement and permitting.
 - b. Company profiles for efficient data exchange.
 - c. Finance, Insurance and Surety Profiles
 - d. Energy Monthly Operating Reports
 - e. Construction Progress Reports and Payments
- 3 Implement
 - a. Expand SBA XBRL functionality
 - b. Implement smart contracts and blockchain that enhance governance and integrate with finance, insurance and surety.
 - c. Accept digital surety bonds with online bond validation by surety industry platform and/or company URL on Treasury list of acceptable sureties T-List
 - d. Provide digital standardized periodic (weekly / monthly) project information to all project stakeholders.
- 4 Engage with Next Generation Innovation

Engage with the Orange Button collaboration on the “Any City” [Model Digital Ecosystem for Community Resiliency](#) for insights towards compliance with the Financial Data Transparency Act.

Model Digital Ecosystem for Community Resiliency

For Acquiring, Accessing, and Sharing Solar Photovoltaic (PV) System Performance Data.

Page 4 of 4

Other Deliverables

- Establishing data interoperability with international stock markets for financial reporting in IFRS/XBRL
- Extensive university participation for greater outreach, transparency, collaboration and production of free software models and demonstrations.
- Low-cost subscriptions for applications available on the Salesforce platform for converting, administering, sending and receiving data sets in XBRL or Excel.

Summary

Implementation of data standards is not a technical issue; it is a consensus issue.

This collaboration model, with full transparency throughout the project lifecycle will engage a wide range of participants, public and private, and demonstrate the future potential is ready today.

Implementation will have its bumps, but in an environment that is designed to identify where there are issues and what data elements are needed those bumps create engagement and learning so best practices can be established.

That environment cannot happen in a commercial project where information is mostly confidential, but it can when under a grant where all stakeholders are fully transparent and share what would normally be confidential information.

Further Information

[Model Digital Ecosystem for Community Resiliency](#)

[Digital Infrastructure Panel](#) at the 2022 Digital 360 Summit

[OS2 Overview](#) at the 2022 Digital 360 Summit

Solar Power World - [Data Harmonization Strategies: Scaling Up Solar Projects & Mitigating Financial Risks](#)

[DOE Orange Button](#)

[DATA ACT 2.0 - Digital Ecosystems for Energy Grid](#)

[2020 UN Great Reset Unleashing the Power of Data Standardization](#)

[Digital Ecosystem for Infrastructure Reliability - Attracting Capital and Financial Markets to Infrastructure](#)

- UC Berkeley Center for Catastrophic Risk Management

[2018 Global Climate Action Summit](#)