U.S. Department of Energy
Office of Clean Energy Demonstrations

Distributed Energy Systems Demonstrations
Funding Opportunity Announcement

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Funding Opportunity Announcement Issue Date:	09/26/2023
Submission Deadline for Concept Papers:	12/13/2023/ 5:00pm ET
Submission Deadline for Full Applications:	4/15/2024 / 5:00pm ET
Expected Date(s) for Pre-Selection Interviews:	Spring/Summer 2024
Expected Date(s) for Selection Notifications:	Summer 2024
Expected Timeframe(s) for Award Negotiations:	Fall – Winter 2024

Modifications

Modification to the Funding Opportunity Announcement (FOA) are [HIGHLIGHTED] in the body of the FOA.

Mod. No.	Date	Description of Modification
000001	11/2/2023	• On the cover page, the submission deadline for Concept Papers has been changed to 12/13/2023 at 5:00PM ET. • On the cover page, the submission deadline for Full Applications has been changed to 4/15/2024 at 5:00PM ET. • On the cover page, the expected Date(s) for Pre-Selection Interviews have been changed to Spring/Summer 2024. • On the cover page, the expected timeframe(s) for Award Negotiations have been changed to Fall – Winter 2024. • In Section 2.2 of the FOA, “non-exhaustive” and “non-exhaustive, non-prescriptive” were bolded and underlined. • In Section 4.1 of the FOA, “In addition, for purposes of this FOA, in place means having the DERs components available onsite and enrolled means that applicants have necessary and associated agreements, by means of letters of commitment, proof of complete recruitment or confirmation, or other document signaling a willingness to participate as described in Table 2 at the time of Full Application” was added. • In Section 5.6.1 of the FOA, “as applicable” was added to the third bullet under Project Overview and Objectives.
000002	12/4/2023	• In Section 5.6.2.1 of the FOA, a hyperlink was updated and the first two sentences of the section were edited to the following: “The Standard Form 424 (Standard Form 424-Revised 12/4/2023) can be found on the OCED eXCHANGE website under the Application Forms and Templates section. The SF-424…”. • In Section 5.6.2.13 of the FOA, “, which can be found on the OCED eXCHANGE website under the Application Forms and Templates section.” was added to the second to last sentence in the section with an updated hyperlink. • An updated Standard Form 424 has been added to the Application Forms and Templates Section on OCED eXCHANGE. • An updated Standard Form LLL (Disclosure of Lobbying Activities) has been added to the Application Forms and Templates Section on OCED eXCHANGE.

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1.0 Overview of Key Information

Program Overview:

The Distributed Energy Systems Demonstrations program will showcase operations of **diverse and flexible clean energy assets** at a **high proportion of peak load**. Utility and/or private sector-led projects will operate integrated distributed energy systems **for sustained periods** to build **confidence** in grid performance, **develop and share best practices, and accelerate market ready** solutions**.**

OCED will fund transformative at-scale projects within distribution systems that demonstrate approaches to integrate grid-edge renewable and distributed energy systems into broader energy networks. These projects will seek to demonstrate reliable operations and system-wide value in the context of distribution grids with high levels of variable as well as non-dispatchable renewable generation and flexible load assets.

Projects should accomplish the maximum practicable number of the following objectives:

- Demonstrate reliable operations and financial value of distribution grids that leverage high levels of variable renewable generation and flexible load assets to the distribution grid operators and end-users.
- Demonstrate interoperability and coordinated control of generation, grid, storage, transportation, industrial and/or building energy systems.
- Demonstrate reliable grid service provision from diverse DER mixes and grid configurations.
- Support the development of best practices for planning, execution, and operation of similar projects.
- Ensure sharing of best practices and key learnings on grid reliability at high levels of penetration utilizing diverse asset mixes with system operators to ensure replicability and extensibility of control approaches.
- Share electricity usage and system performance data with relevant communities (geographic communities and communities of practice) to accelerate adoption and replication of successful solutions.
- Integrate with and expand grid operator training programs.
- Accelerate the incorporation of these solutions into utility planning processes.
- Reduce the cost of capital for implementation of similar, subsequent projects.
- Reduce barriers to participation and access to grid service financial value for a diverse group of energy asset owners and disadvantaged communities (DAC).
- Engage in providing grid services to Independent System Operators/Regional Transmission Organizations (ISO/RTO) through FERC Order 2222.

Eligible Applicants:

The following types of entities are eligible to participate as prime recipients:

1. Utilities, including Municipal, Cooperative and Investor-Owned Utilities.
2. For-profit entities **currently** engaged in grid service provision via an **established portfolio** of aggregated distributed energy resources.

The following types of entities are eligible to participate as subrecipients: institutions of higher education; National Laboratories/FFRDCs, non-profit entities; for-profit entities; Tribal Nations; state and local governmental entities; community choice aggregators; incorporated and unincorporated

consortia; individual contributors; and partnerships or consortia of 2 or more entities described in this list.

Opportunity at a Glance:

Table 1. FOA Topic Areas and descriptions. All values anticipated. Details to be determined through merit reviews and project negotiations.

ANTICIPATED PROGRAM SCOPE AND CHARACTERISTICS	
Total DOE Funding	$50 million
Project Funding	$10M - $25M DOE share, 50% minimum required non-Federal cost share
Project Count	2 – 4 projects
Key Objective	Build confidence among system operators of grid reliability and service provision at high levels of variable generation and flexible load utilizing diverse asset mixes to ensure replicability and extensibility of control approaches.
Definitions	**Distributed Energy Resource (DER)** – a single asset such as a rooftop or community solar installation, a storage system, or an electric vehicle. **Distributed Energy System (DES)** – an aggregation of multiple DERs and the grid systems, sensors, communications, and controls that connect them.
Requirements	• All projects must utilize a distribution grid with at least 20MW peak load for the demonstration. • All projects must utilize distributed energy resources (excluding distributed generation) with an aggregated capacity of at least 25% of the grid system peak load. • All projects must have at least 50% of distributed energy resources in place and/or enrolled at the application stage. • Every project team must include a distribution grid operator, either as prime recipient or as a subrecipient.
Example Metrics/Services	• Capacity services • Demand reduction • Energy shifting • Reliability services, including volt/VAR and frequency support • Congestions and curtailment reductions • Emissions reductions

2.0 Funding Opportunity Description

2.1 Context and Program Purpose

On November 15, 2021, President Joseph R. Biden, Jr. signed the Infrastructure Investment and Jobs Act (IIJA, Public Law 117-58), also known as the Bipartisan Infrastructure Law (BIL). This law authorized the Office of Clean Energy Demonstrations (OCED).[1] Congress appropriated funds for clean energy demonstrations in the Consolidated Appropriations Act, 2023 (Public Law 117-328), which is the authorizing statute for this FOA.[2]

OCED was established in December 2021, building on DOE's expertise in clean energy research and development and expanding DOE's scope to fill a critical gap on the path to net-zero emissions by 2050. OCED's mission is to deliver clean energy demonstration projects at scale in partnership with the private sector to accelerate deployment, market adoption and the equitable transition to a decarbonized energy system.

Across markets and geographies, the clean energy transition – including electrification and the expansion of renewable energy – is impacting communities nationwide, creating opportunities to improve access to affordable, reliable, resilient, and clean energy. Electricity demand is expected to continue to increase through 2050, driven partially by population growth, but more significantly by electrification of various sectors and loads, including building sector heating, cooling and cooking, Electric Vehicles (EVs) and associated charging infrastructure, industrial processes, and others.[3,4] In addition to demand, distributed energy resources (DER) are expected to grow significantly with solar, EVs, and associated charging infrastructure composing the majority of the new distributed capacity in generation, storage, and flexible demand. The increased demand, as well as the unprecedented increase in weather-dependent renewable generation, demand variability, and bidirectional power flows, could necessitate major expansions and upgrades to the transmission and distribution systems unless grid operators look beyond the traditional approaches of serving demand with centralized assets.[5]

These trajectories, while challenging, present an opportunity for communities that rely on distributed energy systems. By generating electricity near the communities where it will be used and utilizing grid resources more flexibly, DERs have the potential to reduce peak demand, increase reliability and resilience, reduce strain on the transmission and distribution systems and provide enhanced value and/or reduced costs to the grid operators and energy consumers if operated in a coordinated, flexible manner. High levels of flexibility from large-scale aggregations of DERs could reduce or avoid distribution grid integration costs, generation capacity additions, and potentially transmission upgrade costs as well,[6, 7] while assisting in faster restoration following outages due to extreme weather events or other disruptions. In order to realize this value and ensure reliability and low electricity costs for

[1] IIJA Section 41201 (42 U.S.C. § 18861).
[2] *See* Division D – Title III – CLEAN ENERGY DEMONSTRATIONS of the Consolidated Appropriations Act, 2023, Pub. L. 117-328, https://www.congress.gov/bill/117th-congress/house-bill/2617/text
[3] NREL Electrification Futures Study, https://www.nrel.gov/docs/fy21osti/79094.pdf
[4] Energy Information Administration, Annual Energy Outlook 2023, https://www.eia.gov/outlooks/aeo/
[5] DOE, Pathways to Commercial Liftoff, Virtual Power Plants. https://liftoff.energy.gov/vpp/
[6] DOE, Updated Grid Modernization Initiative Strategy 2020, https://www.energy.gov/oe/articles/gmi-updated-strategy-2020
[7] DOE, A National Roadmap for Grid-Interactive Efficient Buildings, https://gebroadmap.lbl.gov/

communities, distribution grid operators need better strategies for taking advantage of the benefits of the multitude of DERs coming online.

When combined, DERs including generation, thermal and electrochemical storage, EVs, building HVAC, water heaters and other systems, commercial and industrial equipment, as well as many other assets and the grid systems, sensors, communications, and controls, represent a Distributed Energy System (DES). These DESs are highly varied, due to local grid topologies, existing and new energy systems, and community characteristics. However, they all have the potential to provide value to the communities and to grid operations.

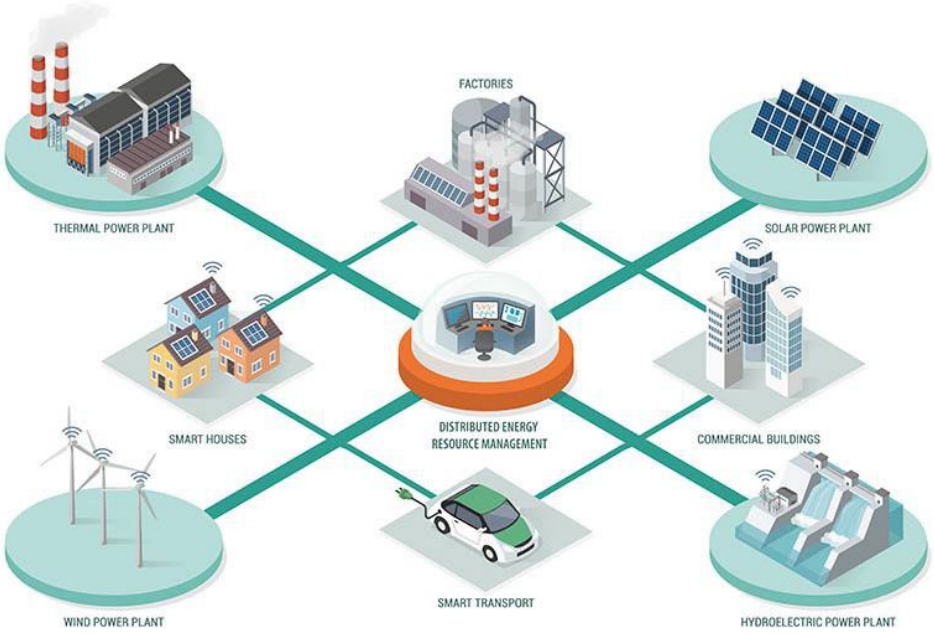


Figure 1: Examples of DERs combined into a distributed energy system[8]

Multiple configurations of DESs, including utility-led demand response programs, Virtual Power Plants (VPP) or similar, could provide value to the grid operator at lower cost than centralized assets, and value to the asset owners through direct payments, avoided integration costs and/or lower energy costs. [9] Grid services such as capacity, ramping, and reliability services such as voltage and frequency support and DERs can be combined to enable significant changes to grid operations. For demand response programs, one framework groups these changes into four main types:

- Shift: Moving energy demand to align with optimal times of day for clean electric generation and delivery
- Shed: Reducing peak demand on the system
- Shape: Modifying the overall system demand curve
- Shimmy: Dynamically adjusting demand to reduce short time-scale system disturbances. [10]

[8] https://www.nrel.gov/grid/distributed-energy-resource-management-systems.html
[9] DOE, Pathways to Commercial Liftoff, Virtual Power Plants. https://liftoff.energy.gov/vpp/
[10] Lawrence Berkeley National Lab, 2025 California Demand Response Potential Study, March 1, 2017

A VPP approach to these four types of demand response functions is shown in Figure 2.

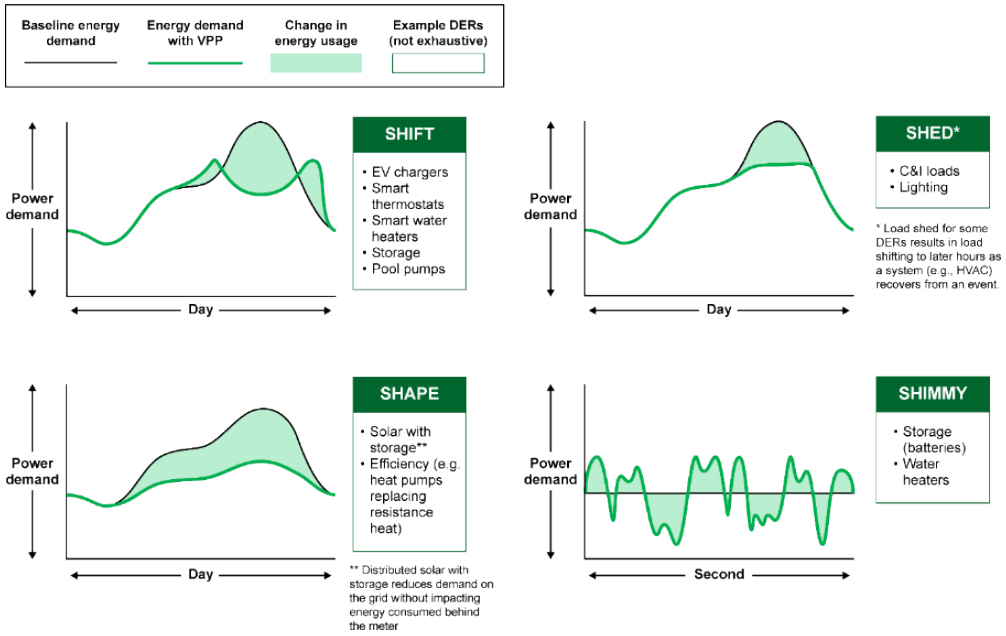


Figure 2: Example VPP demand response service cases[11]

These programs offer the opportunity for consumers and community members to use their local assets to contribute to the reliability and resilience of the local grid,[12] and access the financial markets for reliability-related grid services. Additionally, flexible distributed energy systems have the potential to advance energy and environmental justice by increasing electricity affordability and reliability and reducing or avoiding pollution that would be generated by alternative solutions, such as gas peaker plants, which disproportionately impacts low-income and disadvantaged communities (DAC).[13]

There are remaining challenges for aggregated DERs and DESs from both technology and commercial adoption readiness perspectives. Some of these challenges – including limits in grid infrastructure – have hindered the equitable adoption of distributed energy resources, exacerbating existing inequities in the energy system. DOE has identified the following as key challenges in this space:

Technology Readiness Level (TRL)[14] is high for many DERs; challenges are primarily in complex systems integration:

- Reliable, secure grid operations with high levels of distributed variable generation, distributed storage and flexible load assets (>20% peak load) have not been widely demonstrated in large systems.
- Grid-forming inverters have not been demonstrated in large systems with multiple co-operated units.

[11] DOE, Pathways to Commercial Liftoff, Virtual Power Plants. https://liftoff.energy.gov/vpp/
[12] DOE, Pathways to Commercial Liftoff, Virtual Power Plants. https://liftoff.energy.gov/vpp/
[13] DOE, Pathways to Commercial Liftoff, Virtual Power Plants. https://liftoff.energy.gov/vpp/
[14] https://www.directives.doe.gov/directives-documents/400-series/0413.3-EGuide-04/@@images/file

Commercial Adoption Readiness Level (ARL)[15] challenges center on operator and financier confidence in system performance and valuation:

- Functional performance – System operators lack confidence in system performance above a certain proportion of DERs (closely linked to TRL challenges stated above).
- Ease of use/complexity – Systems have complex architectures and there are challenges with combining legacy and new assets, recruiting participants, and managing cybersecurity risk.
- Demand maturity/market openness – In many regions there is a lack of clear valuation methods and a lack of clarity for aggregated DER participation in established markets.
- Capital flow – There may be reluctance to include these models in system planning and financing due to remaining TRL and ARL challenges.
- Regulatory environment – There is a lack of clear rules or a multi-year horizon for market participation of distributed energy assets in many cases. FERC Order 2222 sets requirements for wholesale markets, but exact tariffs and implementation timelines are not fully defined[16] and there are a lack of clear utility planning requirements and compensation guidelines for retail markets.

Commercial-scale demonstrations are necessary to help address these challenges.[17] Within the distributed energy systems area, OCED intends to complement and build on prior and existing DOE programming to target remaining technical and commercial adoption challenges.

DOE has a broad range of related programming, including:

- Prior programs such as Sustainable and Holistic Integration of Energy Storage and Solar PV (SHINES)[18] and Connected Communities;[19]
- Ongoing planning and partnering through the Grid Modernization Initiative (GMI),[20] Clean Energy to Communities (C2C),[21] and Operation and Planning Tools for Inverter-Based Resource Management and Availability for Future Power Systems (OPTIMA);[22] and
- Large demonstration and deployment support through the Energy Improvements in Rural or Remote Areas (ERA),[23] Solar and Wind Grid Services and Reliability Demonstration,[24] and Grid Resilience and Innovation Partnerships (GRIP)[25] programs.

This FOA makes available approximately $50 million in federal funds for transformative, at-scale projects within distribution systems (see Section 2.2) that demonstrate approaches to integrate grid-edge renewable and distributed energy systems with broader energy networks. These projects will seek to demonstrate reliable operations and system-wide value in the context of distribution grids with high levels of variable renewable generation and flexible load assets.

In this FOA, OCED is seeking to fund a portfolio of projects that demonstrate and validate reliable operations and financial value from a range of grid topologies with diverse energy resources and DES

[15] https://www.energy.gov/technologytransitions/adoption-readiness-levels-arl-complement-trl
[16] https://www.ferc.gov/media/ferc-order-no-2222-fact-sheet; https://www.govinfo.gov/content/pkg/FR-2021-03-30/pdf/2021-06089.pdf
[17] DOE Grid Modernization Initiative. Multi-Year Program Plan, Chapter 8, https://www.energy.gov/articles/grid-modernization-multi-year-program-plan-mypp
[18] https://www.energy.gov/eere/solar/sustainable-and-holistic-integration-energy-storage-and-solar-pv-shines
[19] https://connectedcommunities.lbl.gov/
[20] https://www.energy.gov/gmi/grid-modernization-initiative
[21] https://www.energy.gov/eere/clean-energy-communities-program
[22] https://www.energy.gov/eere/solar/articles/funding-notice-operation-and-planning-tools-inverter-based-resource-management
[23] https://www.energy.gov/oced/energy-improvements-rural-or-remote-areas-0
[24] https://www.energy.gov/eere/solar/articles/funding-notice-solar-and-wind-grid-services-and-reliability-demonstration
[25] https://www.energy.gov/gdo/grid-resilience-and-innovation-partnerships-grip-program

ownership models. In this FOA, OCED is seeking projects that can demonstrate that aggregated and coordinated DERs can provide reliable, predictable grid services for a wide range of system configurations. The program goal is to build confidence that the design, control, and compensation approaches developed can be readily applied to other portions of the distribution grid and extended to other mixes of DERs, potentially extending the value of this approach to a more diverse set of communities, individuals, and entities as the distribution system continues to change.

In this FOA, OCED is seeking to support meaningful value accrual to as many participants as practicable. Examples of participants who may benefit are:

- The grid operator, through avoided costs and improved operational performance;
- System aggregators, through service compensation and broadened access to markets;
- Individual asset owners, through incentives, service compensation, and similar;
- Communities and community members, including historically underserved communities, through improved reliability and/or reduced rates, avoided and/or reduced pollution, as well as improved access and ability to participate in incentive or other valuation programs.

This investment will allow the U.S. to develop more reliable, resilient, and cost-effective distribution grids and DESs while supporting climate action and providing benefits to communities and workers. It will also support the Biden Administration's decarbonization goals of a 50- 52% reduction in GHG emissions from 2005 levels by 2030, a carbon-pollution-free power sector by 2035, and a net-zero GHG emissions economy by 2050.[26,27]

2.2 Topic Areas

This FOA has one Topic Area: **Distributed Energy Systems Demonstrations.**

Objectives:

In this FOA, OCED intends to fund transformative at-scale projects within distribution systems that demonstrate reliable grid operations using higher contributions from DERs than has been previously demonstrated, and in doing so, projects should accomplish the maximum practicable number of the following objectives:

- Demonstrate reliable operations and financial value of distribution grids that leverage high levels of variable renewable generation and flexible load assets to the distribution grid operators and end-users.
- Demonstrate interoperability and coordinated control of generation, grid, storage, transportation, industrial and/or building energy systems.
- Demonstrate reliable grid service provision from diverse DER mixes and grid configurations.
- Support the development of best practices for planning, execution, and operation of similar projects.

[26] Executive Order 14057, Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability, https://www.federalregister.gov/documents/2021/12/13/2021-27114/catalyzing-clean-energy-industries-and-jobs-through-federal-sustainability
[27] FACT SHEET: President Biden sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies, https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies

- Ensure sharing of best practices and key learnings on grid reliability at high levels of penetration utilizing diverse asset mixes with system operators to ensure replicability and extensibility of control approaches.
- Share electricity usage and system performance data with relevant communities (geographic communities and communities of practice) to accelerate adoption and replication of successful solutions.
- Integrate with and expand grid operator training programs.
- Accelerate the incorporation of these solutions into utility planning processes.
- Reduce the cost of capital for implementation of similar, subsequent projects.
- Reduce barriers to participation and access to grid service financial value for a diverse group of energy asset owners and DACs.
- Engage in providing grid services to Independent System Operators/Regional Transmission Organizations (ISO/RTO) through FERC Order 2222.

Grid System Requirements and Cost Considerations:

In the interest of maximizing funding impact and differentiating this program from related prior and current DOE efforts, the minimum requirements stated in Table 2 below apply for the distribution system configuration and composition for all projects under this FOA.

Table 2. System requirements for all projects.

Requirement	Metric	Minimum Requirement	Target
Grid System Capacity	Peak load [MW]	20 MW	50 MW
Grid System Composition	Distributed energy resource capacity, excluding distributed generation, as compared to peak load [%]	25%*	40%
Asset Status	% of distributed energy resources in place **at the application stage** with confirmed willingness to participate	50%	80%

**For example, this would be 5MW at the minimum grid system capacity of 20MW*

DOE anticipates that funds will support primarily system planning, enhancements to sensing, communications and control infrastructure, control software, and sustained operational demonstrations, with a limited portion of funds supporting direct deployment or implementation of distributed energy assets.

In general, the following activities may only compose a limited portion of funding expenditures:

- Capital expenditures for purchase and installation of generation, storage, and load assets may not exceed **15%** of total project costs;
- Recruitment and enrollment activities for consumer and commercially owned DERs may not exceed **10%** of total project costs; and
- Direct payment of participation incentives to asset owners may not exceed **15%** of total project costs excluding program income.

These thresholds are approximate values and may be modified on a project-by-project basis, if justified in the application, and subject to negotiations if selected for an award.

Distributed Energy Resource and System Options:

Applicants are encouraged to utilize a variety of DERs in their projects. A non-exhaustive list of potential DER technologies and the systems they fit into that may be included are shown in Table 3 below.

Table 3. Examples of distributed energy resources and systems.

Distributed Energy Resource	**Description**
Distributed generation	Residential, commercial, and/or community solar; Distributed wind
Stationary energy storage	Thermal and/or electrochemical; Stand-alone, building integrated and/or associated with EV infrastructure
Electric vehicles	Private vehicles, public or private fleet, and/or public transportation vehicles
Flexible building loads	HVAC, lighting systems, water heaters; Residential, commercial and/or industrial
Industrial facility loads	Facility or process level
Sensing, communication, and control systems assets	Wired or wireless, appropriate bandwidth and security for use case
Advanced grid electronics	Grid-forming inverters microgrid controls
Distributed Energy System	**Description**
Electric vehicle charging infrastructure	Flexible loads and/or bidirectional energy flow, aggregation of multiple charging points
Virtual Power Plant	Aggregation of multiple DERs listed above
Microgrid network	Linked and adaptive microgrids
Fleet of DERs or flexible loads	Privately or publicly owned, centrally operable suite of DER assets or flexible loads (e.g., commercial/municipal buildings portfolio)
Other DER aggregation model	Any other centrally operated collection of individual DER assets

Applicants may utilize some or all of the DERs and associated technologies and systems listed above, may utilize existing aggregation programs, and may target a range of services and value propositions depending on grid conditions and community needs. **All DERs and technologies included in the project should be TRL 7-9.** [28]

Projects should clearly describe and define the distribution grid system that will be utilized for the demonstration. Participating energy assets should be located within the grid section of interest, and the grid utilized for the demonstration should be contiguous, with internal value accruing to all relevant parties and communities, including DACs, within the geographic region to the greatest extent practicable. Successful projects will consider a range of grid system configurations from a control and balancing perspective, including individual microgrids, networked microgrids, or other distribution grid topologies.

Recipients will be required to ensure the necessary operating permits and other authorizations required to comply with all applicable Clean Water Act, Clean Air Act, and other applicable Federal, State, local, and Tribal laws and regulations can be and are obtained.

Grid Services and Value:

Projects must demonstrate operational reliability at or above current system reliability (no degradation in services, availability, and/or power quality), and should show a clear financial defensibility and potential for extension and replication to similar grid systems with moderate variability in grid topology and asset mix.

Proposals for DER aggregations may provide value in grid operations and reliability, planning and interconnection activities, system resilience, and emissions reduction. Each proposal should clearly articulate the specific services that will be demonstrated, and the value proposition—and specifics on who will realize that value—of their overall approach. Applicants should set appropriate metrics for their project and clearly indicate how the proposed approach will satisfy the selected metrics. Relevant benchmarks/baselines, targets, and stretch targets should be included for each metric.

In general, the program is seeking proposals that demonstrate service provision from the aggregated system, rather than from a single asset within the system. A list of other potential services (non-exhaustive, non-prescriptive) is shown in Table 4.

Table 4. Examples of applicant-identified grid services and/or flexibility metrics.

Goal	Metric
Capacity services	Power generated over a defined time-period [MW for 2/4/8 hours]
Peak demand reduction	Reduction in peak demand over a defined time-period [MW for 15/30/60 minutes]
Energy shifting	Movement of energy demand by a defined duration [MWh for 4/8/12 hours]
Ramp response	Power ramp rate [+/-MW in 5/10/30 minutes] and sustained minimum and maximum output [MW for 5/30/60 minutes]
Synthetic inertia	Equivalent inertia provided to distribution system [MWs]

[28] https://www.directives.doe.gov/directives-documents/400-series/0413.3-EGuide-04/@@images/file

Fast frequency response	Load response, duration of response, and response time [+/- MW for 5/10/15 minutes in 10/15/30 cycles]
Frequency support	Load damping response and bounds of response [+/-MW/Hz up to +MW/-MW]
Voltage/VAR support	Active power [MW] and reactive power [MVAr] output capabilities
Outage frequency and duration reduction	Reduction in magnitude [MWh/year] and/or rate of occurrence [events/year] of outage events
Outage ride-through	Load that can remain powered through a defined duration of grid outage [MW for 1/4/8 hours]
Blackstart capability	Load that can be independently supported during grid restoration for a defined duration [MW for 8/16/24 hours]
Curtailment reduction	Amount of currently curtailed clean generation that can be successfully utilized [MWh/year]
Congestion reduction	Increase in total energy through a constrained transmission asset over a defined time-period [MWh over 1/2/4 hours]
Interconnection support	New variable clean generation capacity that can be integrated into the distribution system due to project activities [MW]
Emissions intensity reduction	Reduction in per capita emissions intensity with the project region [MT CO2e per capita/year]
Electricity cost reductions	Reduction in annual per capita electricity costs [$ per capita/year]

During the period of performance, identified metrics must be demonstrated empirically and verified and validated via onsite data collection. Applicants must also provide data to demonstrate the project's replicability, adoption potential in project design to accelerate broad commercialization of these solutions, as well as providing good jobs and meaningful community benefits.

Project Examples:

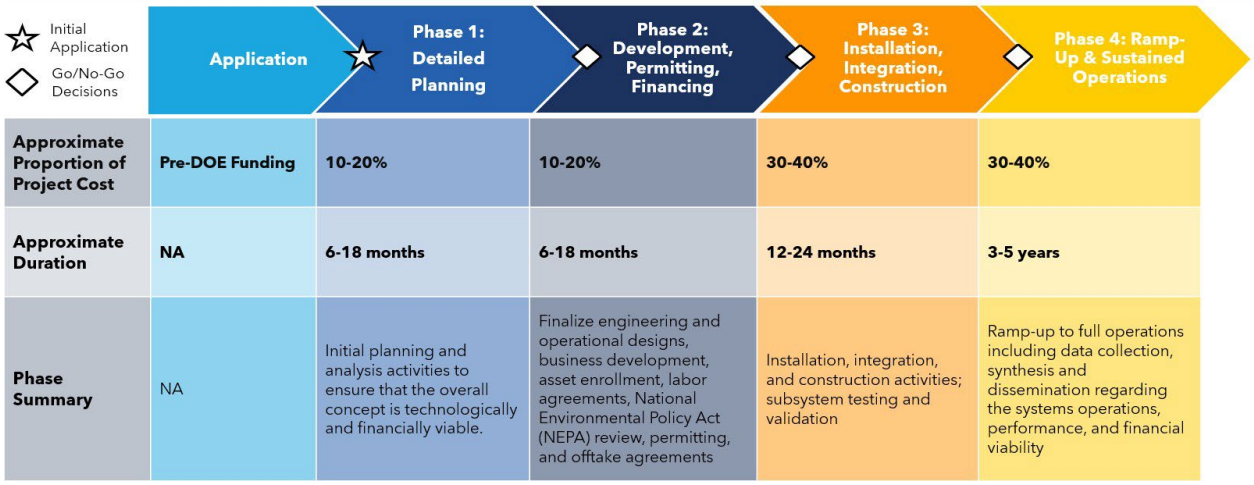
A few examples of projects or components of projects are included below. These are intended to illustrate the range of potential approaches for clarification only.

- Utilization of a municipal electric bus fleet or school bus fleet to provide demand reduction and load shifting to avoid distribution grid upgrade costs.
- Aggregated residential solar systems, storage systems and electric vehicles to provide grid support on extended feeders to reduce integration costs and/or interconnection limits and other distribution grid constraints.
- Combination of third-party VPPs, utility-led demand response programs, and utility-owned and operated grid assets to meet resource adequacy requirements and provide grid reliability services.
- Aggregated commercial building fleet, including solar, storage, EVs, and EV charging infrastructure, to provide load shifting and congestion relief.
- Aggregated industrial energy systems, including clean onsite generation, dynamic scheduling of processes and plant utilities, and flexible non-process loads to provide demand reduction and load shifting.

2.3 Award and Project Management Structure

Awards selected under this FOA will adhere to a four-phased structure for managing scope, schedule, deliverables, and budget. Figure 3 shows an example of the phase progression, major work activities, funding proportion and timeline. These activities will also be further defined during award negotiations and subsequent negotiations between phases. DOE anticipates all awarded projects to be funded through Phase 4 pending successful go / no-go reviews, which will be designed to manage risk and will occur between and within phases.

While the phase figure and the narrative text below provide approximate timetables for each phase, these timetables are representative only. It is DOE's intention to work with Recipients to progress projects through the phased project implementation as prudently as possible.



	Application	Phase 1: Detailed Planning	Phase 2: Development, Permitting, Financing	Phase 3: Installation, Integration, Construction	Phase 4: Ramp-Up & Sustained Operations
Approximate Proportion of Project Cost	**Pre-DOE Funding**	**10-20%**	**10-20%**	**30-40%**	**30-40%**
Approximate Duration	**NA**	**6-18 months**	**6-18 months**	**12-24 months**	**3-5 years**
Phase Summary	NA	Initial planning and analysis activities to ensure that the overall concept is technologically and financially viable.	Finalize engineering and operational designs, business development, asset enrollment, labor agreements, National Environmental Policy Act (NEPA) review, permitting, and offtake agreements	Installation, integration, and construction activities; subsystem testing and validation	Ramp-up to full operations including data collection, synthesis and dissemination regarding the systems operations, performance, and financial viability

Figure 3. Summary of the anticipated phase structure of the projects awarded under this FOA.

Phase 1 – Detailed Planning

Phase 1 activities will focus on completing specific details about the overall project plan and analysis to refine projections submitted as part of the proposal. These activities must provide assurance to DOE that the overall project plan is technologically, financially, and legally viable, with buy-in from relevant local and community stakeholders. This could include any plans to develop a skilled labor pool and provide community benefits through Workforce and Community Agreements.

Teams will complete preliminary engineering, construction, and commercial-scale designs. This will include finalization of a Project Management Plan (PMP), a Risk Management Plan (RMP), the initial Safety Plan, an initial financial plan for the entire 4-phase effort, and final site selection and recruitment plan (if required) for the various technologies to be included in the award.

Phase 1 should also include a continuation of analysis activities to refine and update Techno-Economic Analysis (TEA) data provided in the application and expand the initial environmental impact evaluation into a quantitative Life-Cycle Analysis (LCA) for the specific project. Outreach and stakeholder engagement, which should be active prior to the application process, should continue in Phase 1 as the project site(s) details are finalized and community economic and development impacts become clearer. Applicants should be fully engaged with the DOE's NEPA team as they develop environmental and regulatory plans to prepare for permitting and approval processes in Phase 2.

Phase 2 – Project Development, Permitting, and Financing

Phase 2 encompasses advanced planning activities. Recipients will finalize their project development plans, commercial agreements, financial structure, and complete the necessary permitting and approval activities required to begin construction. By the end of Phase 2, engineering and operational designs should be sufficiently mature to support completion and execution of relevant procurement or construction contracts and overall commencement of major project execution tasks.

Long-lead procurement activities may be started in Phase 2 with prior DOE approval. All distributed energy asset recruitment and enrollment activities should be completed. Third-party financing agreements should be completed and any relevant offtake agreements in place. Risk management plans should be revised and updated to reflect progress made and risks mitigated as well as new or emerging risks and corresponding management plans.

By the completion of Phase 2, safety and security plans should be finalized and execution ready. All necessary permits and approvals should be in place to prepare for construction, including completion of required NEPA reviews and regulatory approvals. Final pre-implementation LCA and TEA activities should be completed according to DOE expectations and corresponding verification and validation (V&V) plans should be in place. Community and labor engagement should have progressed, and an updated comprehensive Community Benefits Plan (CBP) should reflect community and labor input and implementation experience to date and set the stage for ongoing engagement. Community impact targets should be finalized, and tracking plans should be in place to monitor economic, environmental, and social impacts of the projects as they progress to implementation.

Phase 3 – Installation, Integration, and Construction

Phase 3 activities will focus on implementation. Recipients will employ industry standard project management tools and will be required to provide regular status updates and reports. Plans developed in the preceding phases will be revised and updated as appropriate to reflect actual performance. Engineering drawings may be further developed within this phase. Operational protocols and controls will be finalized within this phase.

Previously and newly developed risks will be tracked, actively managed, and regularly reported to DOE. Reporting frequencies and content requirements will be unique to each award and negotiated prior to Phase 3 commencement.

While recipients will manage implementation, DOE will closely monitor progress and evaluate it against the plans developed through Phase 2. DOE and/or its third-party representatives will visit the site(s) regularly to verify progress and collect data, including data related to community benefits, consistent with the established reporting requirements and substantial involvement.

During Phase 3, recipients will continue to implement their community benefits plans and provide ongoing mechanisms for community and labor input that will support the realization of meaningful benefits and minimization of any project negative impacts. Outcomes and impacts related to CBP efforts will be tracked to assess progress.

Phase 3 may look significantly different for each award as there will be varying amounts of construction and retrofitting. Specific details will be addressed for selected projects during the negotiation phase.

Phase 4 – Ramp-Up and Sustained Operations

In Phase 4, recipients will transition to operations. Phase 4 will commence with completion of award-specific criteria which will be negotiated in prior phases. Phase 4 activities will then focus on integrated system performance and ramp-up. By the end of Phase 4, each award will have demonstrated fully functional operations over an extended period. For this program, it is anticipated that Phase 4 will have a minimum duration of 3 years and may extend as long as 5 years. Phase 4 may be divided into two budget periods based on duration of the Phase, specific activities and/or costs.

For example, if there is a clear operational change between initial operations and long-term operations due to additional assets from outside the project coming online, a regulatory requirement or market change being implemented, or similar, the Phase should be divided into two budget periods. Similarly, if the applicant believes it may want to re-optimize its approach following 1-2 years of operations, including physical changes to the system, the Phase should be divided into two budget periods. Specific details will be addressed during negotiations.

A key objective is for DOE-funded commercial demonstration projects to catalyze follow-on private sector investments while meeting CBP goals. Recipients should show a clear path to replicability and extensibility of their design and control approach to other distribution systems and DER mixes, clear financial defensibility of the approach, and ability of their approach to improve equitable access to financial value and inclusion of DACs. To meet this key objective, Phase 4 will also include substantial financial, socio-economic, environmental, and operational data collection and reporting to DOE. To the extent practicable and while protecting sensitive and proprietary information, DOE will synthesize, anonymize, or otherwise incorporate site and operations data into quantitative and qualitative analyses that can be promulgated to external stakeholders for the purpose of informing future private sector investment decisions.

The project teams are also expected to disseminate operational data, lessons learned, and financial, planning, and O&M strategies to the broader community and the public. Specific details and requirements for dissemination will be finalized during negotiations.

Transitions between Phases

All projects selected under this FOA will be eligible to complete all four phases pending successful execution of milestones. DOE is not planning a competitive down-select process among projects after awards are made; however, to manage risk, all projects will be required to complete regular Go/No-Go reviews at the end of each phase. Specific Go/No-Go criteria will be negotiated with each selected project for transitions between each phase.

This may include a requirement to submit a standardized set of data to provide quantitative and qualitative insight on metrics spanning the technological, environmental, economic, market, workforce, community benefits, and other components of the project's analysis activities.

DOE may also require the negotiation of additional Go/No-Go decision points within phases (i.e., phases may include one or more budget periods with Go/No-Go points at the end of each budget period). Applicants must propose quantitative Go/No-Go criteria for each budget period as part of the Workplan.

If DOE determines that an award is making insufficient progress, additional scrutiny and oversight by DOE or its representatives may be employed, and corrective measures negotiated. Awards may be discontinued at any of the Go/No-Go decision points if the Go/No-Go criteria, project, and/or program requirements are not met. If awards are proceeding on an accelerated schedule, it may be possible to move to a Go/No-Go review earlier than originally planned and advance to the next phase if the review is successfully completed.

Specific project structure details for each recipient will be negotiated on a project-by-project basis to produce the best possible balance between project outcomes and DOE risk exposure. Examples of factors that may be considered as part of such negotiations include project and risk management processes, team capabilities, cost share amounts, financial contingencies, and engagement of independent monitors such as an Independent Engineers and/or CBP consultants. DOE will require access to project performance and financial data necessary to track progress against a project baseline (or similar). As these projects are new commercial demonstrations, project progress will be shared with interested stakeholders to the greatest extent possible.

If funded through all four phases, DOE expects that the projects selected under this FOA will reach technical and commercial viability and will continue to operate beyond the financial assistance project period (well beyond DOE funding). Achieving DOE's broad end goals will necessitate review and evaluation of proposed project characteristics that include cost, schedule, and scope; technology; environmental; business; market; financial; management; community support or other factors throughout the project to validate assumptions made for determining commercial viability.

The phased approach is designed to guide Recipients through the project development process incrementally. Each subsequent phase is structured to ensure that each award meets a standard level of maturity, employs a robust execution approach, and that technical and non-technical project risks are adequately and appropriately managed throughout DOE's award.

As the projects are expected to continue as self-sustaining entities operating fully independent of federal funds, DOE may also request financial sustainability plans or long-term disposition and/or decommissioning plans as part of future decision points. This may include proposed sources of funding/revenue and the business model which will support the projects beyond the DOE award. This may also include an estimate of profit and loss demonstrating how the projects will maintain financial self-sufficiency and strategies to grow beyond the initial award.

3.0 Award Information

Anticipated Type of Award: Cooperative Agreement

Application Type(s) Allowed: New

Estimated Number of Awards: 2-4

Anticipated FOA Funding Amount: In total, up to approximately $50M.

Estimated Award Budget: $10M - $25M Federal share

Expected Award Project Period: The maximum expected project period is 8 years; the scope of the proposed project would determine that specific project period within the maximum project period.

Depending on the number and quality of applications, DOE may not award the full FOA funding amount and may issue other FOAs to support additional strategies and approaches or incorporate lessons learned from the first round of applications.

DOE has substantial involvement in work performed under Cooperative Agreements awarded through this FOA. Substantial involvement includes, but is not limited to, the following:

1. DOE shares responsibility with the recipient for the management, control, direction, and performance of the project.
2. DOE may intervene in the conduct or performance of the award for programmatic reasons. Intervention includes the interruption or modification of the conduct or performance of project activities.
3. DOE may redirect or discontinue funding the project based on the outcome of DOE's evaluation of the project at the applicable Go/No-Go decision points.
4. DOE participates in major project decision-making processes.

The applicant should propose four phases for the project corresponding to the phases described in Section 2.3, with one budget period per phase for Phases 1-3, and one to two budget periods for Phase 4 (see discussion in Section 2.3). Upon award, DOE will only fund the initial phase (Phase 1) or otherwise less than all four phases. Ongoing funding is dependent on Go/No-Go determinations and recipient performance.

A contingency reserve is required for all Phase 3 and 4 activities. The amount of contingency will be determined based on the quantitative risk analysis performed by the recipient. The required contingency may be adjusted based on the level of remaining project risks and other considerations as the project progresses in Phase 3 and 4. Recipients must demonstrate that they can meet unexpected financial needs of the project.

The full design package needed to advance to Phase 3 must also include documentation showing that the recipient has access to the required contingency reserve. Typically, DOE expects contingency reserve funds must be: (a) liquid, (b) immediately available, and (c) unrestricted funds dedicated exclusively to the project for the purpose of mitigating project performance baseline risk. The contingency reserve is in addition to total project costs and does not count toward the Recipient's minimum 50% non-federal cost share requirement. If expended, the contingency will not result in reimbursement by DOE above the total federal share approved in the award. DOE discourages recipients from reducing scope to comply with the contingency reserve requirement.

DOE will accept only new applications under this FOA. DOE will not consider applications for renewals of existing DOE-funded awards through this FOA.

This announcement and awards made under this announcement will fall under the purview of 2 CFR Part 200 and 2 CFR Part 910.

4.0 Eligibility Information

To be considered for substantive evaluation, an applicant's submission must meet the criteria set forth below. If the application does not meet all these eligibility requirements, it will be considered ineligible and removed from further evaluation.

To be considered eligible, applicants are required to show how they satisfy these eligibility requirements in their Concept Papers and Full Applications. See Sections 5.6.1 and 5.6.2. The decision whether to submit a Concept Paper or Full Application in response to this FOA lies solely with the applicant.

4.1 Eligible Applicants

Applicants are required to demonstrate their eligibility and specify their entity type from the list below. The following types of entities are eligible to participate as prime recipients:

1. Utilities, including Municipal, Cooperative, and Investor-Owned Utilities.
2. For-profit entities **currently** engaged in grid service provision via an **established portfolio** of aggregated DERs.

For entities to demonstrate eligibility under Type 2, for purposes of this FOA, currently engaged means having at least one active service contract in the DER aggregation and/or VPP operations space at the time of submitting the Full Application to this FOA. For purposes of this FOA, established portfolio of aggregated DERs means having an enrolled asset base and extensive experience with integrated grid operations. In addition, for purposes of this FOA, in place means having the DERs components available onsite and enrolled means that applicants have necessary and associated agreements, by means of letters of commitment, proof of complete recruitment or confirmation, or other document signaling a willingness to participate as described in Table 2 at the time of Full Application. Entities must include a list of all currently enrolled and/or participating DERs aggregated by asset type.

Eligibility for prime recipients under this FOA (the Distributed Energy Systems Demonstration Topic Area) is restricted to the entity types stated above because DOE considers these entities best aligned and most capable of supporting the FOA objectives, such as the ability to demonstrate transformative at-scale projects within distribution systems that demonstrate approaches to integrate grid-edge renewable and distributed energy systems with broader energy networks and having clear motivation and means to directly or indirectly (through peer information sharing and similar) replicate successful outcomes.

The following types of entities are eligible to participate as subrecipients:

- Institutions of higher education
- National Laboratories/FFRDCs
- Non-profit entities
- For-profit entities
- Tribal Nations
- State and local governmental entities
- Incorporated Consortia
- Unincorporated Consortia
- Individual contributors

- Community choice aggregators
- Partnerships or consortia of 2 or more entities described in this list.

Federal agencies and instrumentalities (other than DOE), DOE/National Nuclear Security Administration (NNSA) Federally Funded Research and Development Centers (FFRDC)[29], Non-DOE/NNSA FFRDCs, and Federal Power Marketing Administrations (PMAs) and the Tennessee Valley Authority, are eligible to participate only as a subrecipient and are not eligible to apply as a prime recipient.

For non-DOE/NNSA FFRDCs, the Federal agency sponsoring the FFRDC must authorize in writing the use of the FFRDC on the proposed project and this authorization must be submitted with the application. The use of a FFRDC must be consistent with its authority under the award. For DOE/NNSA FFRDCs, the cognizant Contracting Officer for the FFRDC must authorize in writing the use of the FFRDC on the proposed project and this authorization must be submitted with the application. The funding for the FFRDC will flow through the prime recipient. The following wording is acceptable for this authorization: "Authorization is granted for the Laboratory to participate in the proposed project. The work proposed for the Laboratory is consistent with or complementary to the missions of the Laboratory and will not adversely impact execution of the DOE assigned programs at the Laboratory."

Domestic Entities

The proposed prime recipient and subrecipient(s) must be domestic entities except as stated below. To qualify as a domestic entity, the entity must be organized, chartered, or incorporated (or otherwise formed) under the laws of a particular state or territory of the United States; have majority domestic ownership and control; and have a physical place of business in the United States.

Foreign Entities

In limited circumstances, DOE may approve a waiver to allow a foreign entity to participate as a prime recipient or subrecipient. A foreign entity may submit an application to this FOA, but the application must be accompanied by an explicit written waiver request. Likewise, if the applicant seeks to include a foreign entity as a subrecipient, the applicant must submit a separate explicit written waiver request in the application for each proposed foreign subrecipient.

Appendix D lists the information that must be included in a foreign entity waiver request. The Applicant does not have the right to appeal DOE's decision concerning a waiver request.

4.2 Cost Sharing

Applicants are bound by the cost share proposed in their applications if selected for award negotiations. The cost share must be at least **50% of the total project costs.**[30,31] The cost share must

[29] As specified in the Federal Acquisition Regulation (FAR) 35.017(a)(2), a FFRDC "meets some special long-term research or development need which cannot be met as effectively by existing in-house or contractor resources." A FFRDC is "operated, managed, and/or administered by either a university of consortium of universities, other not-for-profit or nonprofit organization, or an industrial firm, as an autonomous organization or as an identifiable separate operating unit of a parent organization." FAR 35.017(a)(3). A list of FFRDCs can be found at http://www.nsf.gov/statistics/ffrdclist/.

[30] Total project costs are the sum of the government share, including FFRDC costs if applicable, and the recipient share of project costs.

[31] The cost sharing requirements for demonstration projects under this FOA are governed by section 988 of the Energy Policy Act of 2005 (42 USC § 16352). *See also* 2 CFR § 200.306 and 2 CFR § 910.130 for additional cost sharing requirements.

come from non-federal sources unless otherwise allowed by law, such as project participants, state or local governments, or third-party financing. Cost share may be provided in the form of cash or cash equivalents, or in-kind contributions.

Federal financing, such as DOE Loan Guarantees, cannot be leveraged by applicants to provide the required cost share or otherwise cover the same scope that is proposed in the application. Also, in general, deferred or avoided costs such as tax credits may not be used as cost share.

A contingency reserve will also be required for all Phase 3 and 4 activities. More information on contingency reserves can be found in Section 3.0. Contingency funds may not be included as cost share in the applicant's budget.

Each project team is free to determine how best to allocate the cost share requirement among the team members. The amount contributed by individual project team members may vary, provided that the cost share requirement for the project as a whole is met.

Although the cost share requirement applies to the entire project, including work performed by members of the project team other than the prime recipient, the prime recipient is legally responsible for paying the entire cost share.

If the funding agreement is terminated prior to the end of the project period, the prime recipient is required to contribute at least the cost share percentage of total expenditures incurred through the date of termination.

The prime recipient is solely responsible for managing cost share contributions by the project team and enforcing cost share obligation assumed by project team members in subawards or related agreements.

4.3 Responsiveness Criteria

The following Concept Papers and Full Applications will be deemed nonresponsive and will not be reviewed or considered:

- Applications that fall outside the technical parameters specified in Sections 2.1 Context and Program Purpose and 2.2 Topic Areas of the FOA.
- Applications for proposed technologies that are not based on sound scientific principles (e.g., violates the laws of thermodynamics).
- Applications including primarily research, development, and pilot-scale activities.

4.4 Limitation on Number of Concept Papers and Applications Eligible for Review

An entity may submit more than one Concept Paper and Full Application to this FOA, provided that each application describes a unique, scientifically distinct project and provided that an eligible, compliant, and responsive Concept Paper was submitted for each Full Application.

5.0 Application and Submission Information

5.1 Application Package

All submissions in both the Concept Paper and Full Application phases must conform to the form and content requirements described below, including maximum page lengths:

- Each must be submitted in Adobe PDF format unless stated otherwise;
- Each must be written in English;
- All pages must be formatted to fit on 8.5 x 11-inch paper with margins not less than one inch on every side. Use Calibri typeface, a black font color, and a font size of 12 point or larger (except in figures or tables, which may be 10-point font). A symbol font may be used to insert Greek letters or special characters, but the font size requirement still applies. References must be included as footnotes or endnotes in a font size of 10 or larger. Footnotes and endnotes are counted toward the maximum page requirement;
- A **control number** will be issued when an applicant begins the OCED eXCHANGE application process. The control number must be included with all application documents. Specifically, the control number must be prominently displayed on the upper right corner of the header of every page and included in the file name (i.e., *Control Number_Applicant Name_Application*);
- Page numbers must be included in the footer of every page; and
- Each submission must not exceed the specified maximum page limit, including cover page, charts, graphs, maps, and photographs when printed using the formatting requirements set forth above and single spaced. If applicants exceed the maximum page lengths indicated below, DOE will review only the authorized number of pages and disregard any additional pages.

Exceptions: Templates provided by DOE or other government forms may be used in the native formatting of those documents.

NOTE: The maximum file size that can be uploaded to the OCED eXCHANGE website is 50MB. Files exceeding 50MB cannot be uploaded and hence cannot be submitted for review. If a file exceeds 50MB but is still within the maximum page limit specified in the FOA, it must be broken into parts and denoted to that effect. For example:

ProposalContent_Part_1
ProposalContent_Part_2

DOE will not accept late submissions that resulted from technical difficulties due to uploading files that exceed 50MB.

5.2 Application Submission

There are several one-time actions before submitting an application in response to this FOA, and it is vital that applicants address these items as soon as possible. Some may take several weeks, and failure to complete them could interfere with an applicant's ability to apply to this FOA, or to meet the negotiation deadlines and receive an award if the application is selected. These requirements are discussed in the sections that follow.

5.2.1 OCED eXCHANGE

To apply to this FOA, applicants must register with and submit all application materials for both the Concept Paper and Full Application through OCED's online application portal, OCED eXCHANGE, at https://oced-exchange.energy.gov. See detailed instructions at Financial Opportunities: Manuals. OCED eXCHANGE is designed to enforce the deadlines specified in this FOA. The "Apply" and "Submit" buttons will automatically disable at the defined submission deadlines.

Additional documentation cannot be added to applications already submitted in the OCED eXCHANGE system. In order to revise, edit, or add documentation, the applicant must unsubmit their previous application.

While applicants can un-submit their applications and resubmit any time up to the deadline, when an application is unsubmitted, that version of the application (and all associated documents) is not saved in OCED eXCHANGE. When resubmitting a full application, applicants MUST ensure that the full and complete application package is submitted before the deadline. More information may be found in the OCED eXCHANGE Applicant Guide located at https://oced-exchange.energy.gov/Manuals.aspx.

If an applicant experiences technical difficulties with a submission, the applicant should contact the OCED eXCHANGE helpdesk for assistance (OCED-ExchangeSupport@hq.doe.gov) well in advance of the application deadline to allow time for resolution of the issue before the application deadline.

NOTE: OCED eXCHANGE includes form fields that the applicant must complete during the submission of the Concept Paper and the Full Application. OCED eXCHANGE requires the completion of these unique form fields in addition to the upload of files. Applicants must login to the OCED eXCHANGE system with enough time ahead of the deadline to complete all required form fields and uploads to successfully finalize application submission.

5.2.2 Unique Entity Identifier (UEI) and System for Award Management (SAM)

Each applicant (unless the applicant is excepted from those requirements under 2 CFR § 25.110) is required to: (1) Be registered in the SAM at https://www.sam.gov before submitting its application; (2) provide a valid UEI number in its application; and (3) continue to maintain an active SAM registration with current information at all times during which it has an active federal award or an application or plan under consideration by a federal awarding agency.

DOE may not make a federal award to an applicant until the applicant has complied with all applicable UEI and SAM requirements and, if an applicant has not fully complied with the requirements by the time DOE is ready to make a federal award, DOE will determine that the applicant is not qualified to receive a federal award and use that determination as a basis for making a federal award to another applicant. Designating an Electronic Business Point of Contact and obtaining a special password called a Marketing Partner ID Number (MPIN) are important steps in SAM registration.

In OCED eXCHANGE, applicants are requested to provide the Unique Entity Identifier (UEI) for the organization or select N/A if it does not apply. Applicants may also select N/A if the UEI number is still in progress (i.e., has not yet been assigned to the organization). In the case that the UEI number is still in progress, applicant's may update the UEI associated with your account once the UEI is assigned.

Please note that each applicant (unless the applicant is an individual or federal awarding agency that is excepted from those requirements under 2 CFR 25.110(b) or (c), or has an exception approved by the federal awarding agency under 2 CFR 25.110(d)) is required to provide a valid UEI in its application.

NOTE: Due to the high demand of UEI requests and SAM registrations, entity legal business name and address validations are taking longer than expected to process. Entities should start the UEI and SAM registration process as soon as possible. If entities have technical difficulties with the UEI validation or SAM registration process, they should utilize the HELP feature on SAM.gov. Additional entity validation resources can be found here: GSAFSD Tier 0 Knowledge Base - Validating your Entity.

5.2.3 FedConnect

Register in FedConnect at https://www.fedconnect.net. To create an organization account, the applicant's SAM MPIN is required. For more information about the SAM MPIN or other registration requirements, review the FedConnect Ready, Set, Go! Guide at https://www.fedconnect.net/FedConnect/Marketing/Documents/FedConnect_Ready_Set_Go.pdf.

5.2.4 Grants.gov

Register and subscribe in Grants.gov (http://www.grants.gov) to receive automatic updates when modifications to this FOA are posted. However, please note that Concept Papers and Full Applications will not be accepted through Grants.gov.

As applicable, modifications to this FOA will be posted on the OCED eXCHANGE website and the Grants.gov system. However, the applicant will only receive an email when a modification is posted if registered for email notifications for this FOA in Grants.gov. OCED recommends that the applicant register and subscribe in Grants.gov as soon as possible after the release of the FOA to ensure receipt of timely notice of any modifications to this FOA.

5.2.5 Electronic Authorization of Applications and Award Documents

Submission of an application and supplemental information under this FOA through electronic systems used by DOE, including OCED eXCHANGE and FedConnect.net, constitutes the authorized representative's approval and electronic signature.

5.3 Application Forms

Further information and detailed instructions regarding application forms are available on OCED eXCHANGE. To access these materials, go to https://OCED-exchange.energy.gov and select the appropriate FOA number.

5.4 Submission Dates and Times

All required Concept Paper and Full Application components and files must be uploaded and submitted in OCED eXCHANGE no later than 5 p.m. ET on the dates provided on the cover page of this FOA. A

successful submission consists of uploaded documents, completed required OCED eXCHANGE application fields, and submission of the OCED eXCHANGE record.

5.5 Requirement for Full and Complete Disclosure

Applicants are required to make a full and complete disclosure of all information requested. Any failure to make a full and complete disclosure of the requested information may result in:

- Termination of award negotiations;
- Modification, suspension, and/or termination of a funding agreement;
- Initiation of debarment proceedings, debarment, and/or a declaration of ineligibility for receipt of federal contracts, subcontracts, and financial assistance and benefits; and
- Civil and/or criminal penalties.

5.6 Proposal Content

This application process includes multiple phases: Concept Paper, Full Application, and possibly in person interviews or site visits.

Section 5.6.1 lists the required proposal content for Concept Papers, and Section 5.6.2 lists the required proposal content for Full Applications.

5.6.1 Concept Paper

(PDF)	**File Naming Convention:** ControlNumber_LeadOrganization_ConceptPaper.pdf

Each Concept Paper must be limited to a single concept and must conform to the requirements listed below, not exceeding the 11-page maximum. Each Concept Paper must be submitted as a single file in OCED eXCHANGE.

The Concept Paper must address all the requirements described in this subsection. Please note that all statements of expertise provided will need to be substantiated in the Application submission, see Section 5.6.2. DOE makes an independent assessment of each Concept Paper based on the criterion in Section 6.2.1. DOE will encourage a subset of applicants to submit Applications and other applicants will be discouraged from submitting an Application, see Section 7.1.2.

The following are the required Concept Paper components. Each potential applicant must provide all the following information as part of the Concept Paper document and clearly label each section with the section titles listed below, and the Concept Paper as a whole must not exceed a **maximum of 11 pages in total**.

Section and Content
Cover Page
The cover page must include all of the following: • The project title.

Section and Content
• The project team, including prime recipient name, entity type and an explanation of eligibility pursuant to Section 4.1, both the technical and business points of contact, and names of all team member organizations. • The project location(s). • The proposed Federal funding level, cost share and period of performance. • The peak load of the grid system that will be utilized for the demonstration. • The aggregated capacities by type for DERs included in the project. • The specific grid service types included in the project. • Any statements regarding confidentiality as described in Section A.4.1. Applicants are encouraged to use the cover page format in Appendix E.
Project Overview and Objectives
Applicants are required to describe: • The proposed project, including the approach and/or systems to be developed, construction activities, infrastructure development and operational approach. • The grid that will be utilized for the demonstration, including peak load, typical load shapes, topology and geographic boundaries, sensing and control infrastructure, and current composition. As a part of the 11 page Concept Paper a simplified map with identification of key asset locations should be included if available. • The types and capacities (including, as applicable, as a percentage of peak system load) of distributed energy assets that will be utilized to meet the objectives of the FOA, including distributed generation, sensing, communications and control systems, energy storage, EVs and charging infrastructure, and similar. • The current operational status and ownership of these assets, and a preliminary plan for any additional asset recruitment that may be required. • The grid services and/or value that will be provided by the demonstrated system. • The valuation and compensation mechanisms that will be utilized, and a clear definition of the recipients of these mechanisms.
Demonstration Plan
Applicants are required to describe: • A preliminary development plan and timeline, including key risks, regulatory actions, recruitment and enrollment activities, and challenges to achieve deployment of the proposed project. • A preliminary test plan for individual assets, subsystems and integrated systems. • A summary of data and information sharing agreements that will be necessary for the project including information about which ones are already in place and steps necessary to obtain the remaining agreements. • A preliminary operational plan and plan to disseminate performance data and lessons learned. • The impact that DOE funding would have on the proposed project. • The preliminary plan to sustain the project after federal funds are expended. Describe how the project team will be prepared to operate and maintain the project following award completion. Provide the projected project revenue stream or other income to ensure cash flow for operations and maintenance for the life of the project. State the long-term vision to sustain and maintain the project after completing construction and achieving full operations.
Management and Organization
Applicants must describe the qualifications, experience, and capabilities of the proposed Project Team, including the following: • Describe the skills and expertise that the Lead Project Manager (LPM) and Project Team have to successfully design, develop, and operate the proposed plan. Specific details substantiating claims of expertise will be required in the application.

Section and Content	
• Describe any relevant prior experience which demonstrates an ability to perform tasks of similar risk and complexity. If applicable, provide details on the applicant team's prior work together on projects. • A summary organization chart of the team must be provided. • A budget summary by team member and project phase must be provided, including cost share contributions. • Applicants may provide other graphs, charts, or data to supplement their Demonstration plan and Project Team Descriptions. All supplemental data is included in the Total Concept Paper Maximum 11 Page Limit.	
Community Benefits Plan	
Applicants are required to explain how their proposed project will address these four core elements: • Supporting meaningful community and labor engagement. • Investing in the American workforce by creating good local jobs and supporting a skilled workforce. • Advancing diversity, equity, inclusion, and accessibility. • Contributing to the Justice40 Initiative goal that 40% of the overall climate and clean energy investments flow to Disadvantaged Communities.	
Total Concept Paper Maximum Page Limit	**11 pages**

5.6.2 Full Application

Only applicants who have submitted an eligible, compliant, and responsive Concept Paper will be eligible to submit a Full Application.

Applicants will have approximately 2.5 months from DOE's posting of the Concept Paper Encourage/Discourage notification on OCED eXCHANGE to prepare and submit a Full Application. Regardless of the date the applicant receives the Encourage/Discourage notification, the submission deadline for the application remains the date and time stated on the FOA cover page.

All Full Application documents must be marked with the control number issued to the applicant. Each Full Application must be limited to a single proposal. Full Applications must conform to the content and form requirements listed below and must not exceed the stated page limits. Applicants must provide sufficient citations and references to justify the claims and approaches made to DOE. However, DOE and reviewers are under no obligation to review cited sources.

The Application Requirements Checklist is in Appendix B.

5.6.2.1 Application for Federal Assistance (SF-424)

(PDF)	**File Naming Convention:** ControlNumber_LeadOrganization_App424.pdf

The Standard Form 424 (Standard Form 424-Revised 12/4/2023) can be found on the OCED eXCHANGE website under the Application Forms and Templates section. The SF-424 represents the government-wide standard form for grant application packages, and requires basic information about the applicant (name, address, telephone number, type of applicant, etc.), including a list of sources of proposed funding and a description of the proposed project. Complete all required fields in accordance with the instructions on the form.

In Field 21 of the SF-424, the authorized representative must certify and agree with the Certification and Assurances found at https://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms.

NOTE: The dates and dollar amount on the SF-424 are for the complete project.

5.6.2.2 Technical Volume

(PDF)	**File Naming Convention for Technical Volume:** ControlNumber_LeadOrganization_TechVol.pdf
(Excel)	**File Naming Convention for Techno-Economic Analysis Workbook:** ControlNumber_LeadOrganization_TEA_WB.xlsx

The Technical Volume must include all citations, charts, graphs, maps, photos, or other graphics for all sections described below. Applicants should consider the weighting of each of the technical review criterion (see Section 6.2.2) when preparing the Technical Volume.

All elements of the Technical Volume must be addressed; however, it is expected the applicant will tailor the information provided in the Technical Volume to the size and complexity of the proposed project. Approximate page lengths are stated below, though applicants can adjust the length of each section so long as all sections and content are addressed and the total Technical Volume does not exceed the 26 page total maximum page limit. Applicants should clearly label each section with the section titles listed below.

Section and Content	Approximate page length
Cover Page	1
The cover page must include: • The project title. • The project team, including prime recipient name, entity type and an explanation of eligibility pursuant to Section 4.1, both the technical and business points of contact, and names of all team member organizations. • The project location(s). • The proposed Federal funding level, cost share and period of performance. • The peak load of the grid system that will be utilized for the demonstration. • The aggregated capacities by type for DERs included in the project. • The specific grid service types included in the project. • Any statements regarding confidentiality as described in Section A.4.1. Applicants are encouraged to use the cover page format in Appendix E.	
Project Overview	2
This section is a description of the overall scope and objectives of the project. It must include: • A description of the distributed energy asset integration and operational challenges facing the distribution grid in the proposed location. • A description of the distributed energy assets that will be targeted as part of the proposed project and why the proposed solution appropriately addresses the challenges described. • A brief description of the grid network within which the demonstration will occur. • A brief description of the demonstration location and why it was chosen.	

- A brief description of the major value proposition of the proposed approach, the mechanism by which that value will be realized and monetized, and the methodology to verify success of the proposed approach.
- The impact of DOE funding and how the DOE funding, relative to prior, current, or anticipated funding from other public and private sources, is necessary to achieve the project objectives.
- How the project will enable further replication and/or extension of the project and approach.
- The ways in which the proposed project location and related infrastructure, skilled workforce, community engagement, etc. will contribute to the overall project viability and long-term success.

Technical Approach and Impact	5

This section must include:

- A detailed explanation of:
  - The approach proposed, including the operational strategy and any necessary validation and verification testing;
  - Planned integration with the power distribution network/distribution grid, including technical and operational aspects and any potential islanding from the grid;
  - Any necessary infrastructure additions or modifications; and
  - Selected geographic region(s) and site(s).
- A system diagram and/or map and description of distribution grid section that will be utilized for the demonstration, including network map and geographic context including substations, peak load characteristics and forecasts, any existing sensing, communication and control capabilities, and key existing distributed and centralized energy assets.
- A detailed list of the proposed distributed energy assets that will be utilized for the demonstration, including anticipated capacities where relevant and preliminary assessment of the TRL of each solution and identification of any open challenges that need to be addressed for the solution to be fully implemented. Applicants are encouraged to utilize the ARL framework where possible.[32]
- A detailed breakdown of asset status (planned, under development, installed/deployed, etc.) by capacity, asset type, and ownership.
- Any existing engineering evaluations and design work.
- A description of any existing and/or proposed cybersecurity considerations and approaches. While a detailed plan is not required, applicants should specify any potential threats or vulnerabilities that they have identified.
- A summary of data and information sharing agreements that will be necessary for the project, including information about which agreements are already in place and steps necessary to obtain the remaining agreements.
- A detailed description of any additional metrics and associated target values that will be utilized to establish value of the proposed demonstration (see Table 4), and the method by which the system will provide the identified value to the distribution grid, asset owners, and ratepayers.
- A narrative description of the environmental impact of the proposed approach, including CO2e emissions changes from current operations and any other local air and water emissions or utilization impacts. Descriptions should include estimates for any readily quantifiable elements such as new zero-carbon generation enabled, new carbon-emitting capacity avoided, and similar.

Financial and Market Viability	5

This section must include:

- A preliminary business plan, including:
  - A Techno-Economic Analysis (TEA) of the proposed project, considering the financial viability and/or defensibility of the approach and avoided costs as compared to alternative approaches that provide the same grid services and functionality.
    - Applicants must complete the provided TEA Workbook which provides guidelines for the quantitative and qualitative assessments of the technical parameters, capital expenditures,

[32] https://www.energy.gov/technologytransitions/adoption-readiness-levels-arl-complement-trl

operational expenditures, revenue value, avoided cost value, and value of the proposed project. The data fields provided are illustrative and applicants should make a best effort to modify the data fields as needed to best fit the proposed operating and business model. A separate tab should be created for each device type.
    - Applicant should provide a value chain map showing applicant-defined system boundaries and the value flows between participants within this system boundary (DER operator, utility provider, downstream consumer, third-party service providers or customers, etc.) where applicable.
  - A description of any recruitment activities that may be needed to fully enroll the target capacity and composition of distributed energy assets for the demonstration.
  - A description of any incentives and compensation plans that will be used for specific distributed energy assets and/or program participants.
  - A description of any relevant existing or anticipated incentive programs, including rebates and tax credits that will be leveraged, incorporated or superseded by the proposed demonstration program, the potential for negative impacts on these programs by the demonstration, and strategies for mitigating these impacts.
  - Other items including key contracts, required permits and agreements, offtake agreements, preliminary site selection considerations, customer/community impact assessment, and similar.
- A preliminary project finance plan, including total project funding requirements, financial relationship between project members, plan and ability to meet cost share, including other sources of project funding or finance. This plan should also include a project finance diagram.
- A description of the replicability and/or extensibility of the approach to other communities with similar or differentiated grid topologies and asset mixes.
- An assessment of the long-term operational viability of the proposed approach following completion of the demonstration project.

Management and Organization	5

This section must include:

- Management Plan, including key organizational members and structure, roles and responsibilities, and relevant prior experience. This plan must address any changes to the approach and/or responsibilities as the project moves from planning to implement and long-term operations.
- Description of the skills and expertise that the Lead Project Manager (LPM) and Project Team have to successfully design, develop, and operate the proposed plan.
- Description of any relevant prior organizational experience, which demonstrates an ability to perform tasks of similar risk and complexity. If applicable, provide details on the applicant team's prior work together on projects.
- Safety and Occupational Health Plans (SOHPs): Applications should include a brief description of safety culture, including safety and occupational health plan, and available performance history (such as an OSHA 300A form or Experience Modification Rating) of the entities and management involved in the award.
- Time commitment of key roles and personnel: A table showing time commitment (hours per week) of key organizational roles for all project phases and key personnel to fill each role for, at minimum, Phase 1 and Phase 2.
- A summary organization chart of the team must be provided.

Workplan	4

The Workplan must include:

- Technical Scope Summary, divided by budget periods in alignment with the four Project Phases described in Figure 2.
- Proposed Go/No-Go Decision Points for each project phase.
- **Work Breakdown Structure (WBS)**
- **Integrated Project Schedule (IPS)** showing critical path for the entire project, and including task and subtask durations, milestones, Community Benefits Plan, and Go/No-Go decision.

• **Task Description Summary**, with a concise description of the specific activities to be conducted over the life of the project (including project construction and operations) for each task/subtask. • A summary of the End of Project Goal. • Permitting: Applications must identify the anticipated federal, state, and local codes, regulations, and permitting requirements applicable to siting, construction, and operation of the proposed project. If an application is selected for negotiation of award, applicants will be required to complete an Environmental Considerations Summary.	
Risk Analysis and Mitigation	4
This section must include an initial Risk Management Plan (RMP), including: • Identification of technical risks, including technology, systems integration, infrastructure, engineering, scale-up and similar elements. • Identification of security risks, including cybersecurity, physical security, internal and external threat identification and response, and similar elements. • Identification of financial risks including project finance, market and regulatory structures, commercial business models, and similar elements. • Identification of organizational risks, including project team, project management structure, and similar elements. • Identification of execution risks, including engineering, procurement, construction, permitting, safety, testing, and similar elements. • Assessment of the probability of occurrence of each risk and potential impacts. • High-level test narrative that addresses opportunities and needs for smaller-scale and/or subsystem testing to reduce integration and operational risks. • Identification of proposed mitigations for identified risks.	
Total Technical Volume Maximum Page Limit	**26**

(PDF)	**File Naming Convention:** ControlNumber_LeadOrganization_Comm_Benefits.pdf

Projects funded under this FOA are expected to support meaningful community and labor engagement; invest in the American workforce; advance diversity, equity, inclusion, and accessibility (DEIA); and contribute to the President's goal that 40% of overall benefits of certain federal investments flow to disadvantaged communities (the Justice40 Initiative).

Full Applications must include a Community Benefits Plan (CBP) describing how the project will incorporate these four objectives: Community and Labor Engagement, Investing in the American Workforce, DEIA, and Justice40. For each objective, applicants should propose metrics to measure success. CBP activities should be fully integrated into the project schedule, workplan, budget, and other key documents. **Within the CBP section, applicants should cross-reference the relevant Technical Volume, Budget, and other sections as needed to avoid duplicating data—and use the CBP section to summarize or highlight how technical or financial plans will benefit communities and workers.** For additional information, see About Community Benefits Plans.

Because ownership of DERs largely follows patterns of historic social, financial, and racial disparities, efforts to integrate grid-edge renewable and distributed energy systems with broader energy networks

are likely to continue to concentrate benefits in relatively wealthy communities unless concerted efforts are made to overcome barriers facing disadvantaged communities.[33]

The CBP is organized into three parts: Part A addresses budget and staff; Part B addresses the community and workforce impacts of the project itself; and Part C addresses plans for assessing how the project, including lessons learned through project implementation, can lead to the expansion of DER and DES benefits to Tribes, disadvantaged communities (DACs), Low-to-Moderate Income communities (LMIs), Minority-Serving Institutions (MSIs), and/or diverse business enterprises, including minority-, woman-, and veteran-owned businesses and minority business enterprises.

Applicants are encouraged to provide Community and Labor Partnership Documentation (submitted under the Community Partnership Documentation, Section 5.6.2.4) from organizations reflecting engagement and feedback on the applicant's CBP.

The CBP must not exceed 5 pages total.

Part A: CBP Budget and Staff

Budget to implement CBP Parts B and C

	Phase 1	Phase 2	Phase 3	Phase 4
CBP Budget for staff ($ USD)				
CBP Budget for implementation, e.g., trainings, engagements, etc. ($ USD)				
CBP Budget flowing to communities – Direct Payments to participants ($ USD)				
CBP Budget flowing to communities – Other ($ USD)				
Total CBP Budget ($ USD / % of total project budget)				

Staff to implement CBP Parts B and C

Name of person or organization	Role/Responsibility	CBP Expertise/Experience	% Time commitment to CBP on this project*

** As proportion of full-time employment*

Part B: Impacts during project phases 1-4

Part B of the Community Benefits Plan should address the community and workforce impacts of project phases 1-4 at and around the proposed project location(s).

Community and Labor Engagement. This section should include the following elements, and reference the relevant Technical Volume sections as needed to avoid duplicating data:

33 Elizabeth Ross, Megan Day, Christiana Ivanova, Akua McLeod, Jane Lockshin. Intersections of disadvantaged communities and renewable energy potential: Data set and analysis to inform equitable investment prioritization in the United States. Renewable Energy Focus, Volume 41, 2022, Pages 1-14, https://doi.org/10.1016/j.ref.2022.02.002.

1. **Community and Stakeholder Overview**. Describe communities or groups that could experience impacts from the proposed project. Summarize the social, economic, environmental, and energy characteristics of these groups. Discuss existing grid disruptions (including frequency and duration of outages) and energy burden. Identify key stakeholder groups, including existing DER asset holders and workers.
2. **Asset Owner Recruitment.** Describe any plans to recruit diverse asset owners, including asset owners who are members of or whose assets benefit Tribes, DACs, LMIs, MSIs, and/or diverse business enterprises.
3. **Engagement Plan**. Describe objectives, approaches, and timelines for engaging stakeholders, workforce organizations, labor unions, and other impacted communities, including historically excluded groups. Discuss how the project will incorporate input from engagement, how engagement can impact project decisions or characteristics, and how communities will access, and participate in collecting, project data. If applicable, describe any plans to negotiate Workforce and Community Agreements.

If awarded, and in conjunction with DOE, the Recipient will also identify federally recognized Indian tribes, including Alaska Native village or regional or village corporations (who are not project partners) whom the proposed project may impact as applicable. The Recipient will provide information to support DOE's development of a tribal engagement plan that acknowledges each tribe's consultation policies, traditions, and expectations, and adheres to DOE Order 144.1 on tribal consultation, so appropriate mitigation can be identified through government-to-government consultation to off-set potentially unintended adverse impacts. DOE is and remains responsible for government-to-government consultation with federally recognized Indian tribes, including Alaska Native village or regional or village corporations.

Investing in the American Workforce. This section should include the following elements:

1. **Quality Jobs**. Describe plans and ongoing efforts to attract and retain a skilled, local, and diverse workforce for construction (if applicable), ongoing operations, and future replication. Describe the quality of existing and anticipated jobs for this project, including efforts to support worker organizing and collective bargaining.
2. **Workforce Development**. Describe plans to invest in workforce development, including workforce education and training for local workers and support for workers' skill acquisition and opportunities for advancement, for example by integrating existing grid operators into training programs relevant for DES.

Diversity, Equity, Inclusion, and Accessibility (DEIA). This section should include the following:

1. **Background and Current Efforts**. Describe the team's prior and ongoing DEIA efforts, for example existing local hire targets, supplier diversity targets, and/or employee and leadership demographic targets. General DEIA statements are insufficient.
2. **Implementation Plan**. Describe DEIA outcomes and implementation strategies by project phase. Include any plans to:
    a. Partner with community choice aggregators or Tribes
    b. Partner with MSIs and Minority-, Woman-, or Veteran-Owned Businesses
    c. Utilize supplier or sub-contracting diversity programs

d. Provide comprehensive supportive services (to improve representation and access to jobs) and work with other organizations serving under-represented communities and those facing barriers to employment.

Minority Serving Institutions; Minority Business Enterprises; Minority-, Woman-, or Veteran-Owned Businesses; Tribal Colleges and Universities; community- or faith-based organizations, or entities in underserved communities that meet eligibility requirements (see Section 4.0) are encouraged to participate on application teams.

Justice40 Initiative: This section should include the following elements:

1. **Assessment of project benefits**. Describe all anticipated project benefits, including but not limited to compensation for services, reductions in energy burden, improvements in energy reliability and resiliency, and avoided or reduced pollution. For each benefit, include the expected magnitude of the benefit; metrics to track the benefit; and the % of the benefit that will flow to DACs. Describe how much, if any, of the existing DERs in the proposal are owned by, located in, and/or directly benefit Tribes, DACs, LMIs, MSIs, and/or diverse business enterprises.
2. **Assessment of project negative impacts**. Describe all anticipated project negative impacts (including direct, indirect, and cumulative impacts).[34] For each negative impact, include the expected magnitude of the impact; metrics to track the impact; and the % of the impact that will flow to DACs. Describe how project negative impacts will interact with existing cumulative burdens.
3. **Implementation Plan**. Describe any strategies, methods, and milestones aligned with project phases to:
    a. Maximize benefits, including reductions in energy burden, compensation for services, improvements in reliability and resiliency, and pollution reduction to DACs
    b. Minimize negative impacts to DACs
    c. Measure, track, and report impacts to DACs
    d. Ensure accountability, feedback, and transparency mechanisms to DACs

Part C: Plans to extend DES and DER benefits to disadvantaged or underserved communities

This part of the CBP should address plans for assessing how the project, including lessons learned through project implementation, can lead to the expansion of DER and DES benefits to Tribes, DACs, LMIs, MSIs, and/or diverse business enterprises. This should include the following elements:

1. **Plans to assess barriers to equitable access to being a part of a DES**. Provide detailed plans on how the project team will assess the barriers to equitable access to DES benefits in the project team's entire service area. This should focus on Tribes and communities or groups that have relatively limited access to or participation in DERs and DESs and relatively high levels of socio-economic and/or energy challenges.

[34] Negative impacts may include ecological (e.g., effects on natural resources and on components, structures, and functioning of ecosystems), aesthetic, historic, cultural, economic, social, or health impacts.

2. **Plans to develop strategies to overcome barriers to equitable DES.** Propose activities to apply project learnings and extend successful project results to improving equitable outcomes from future projects. This can include, but is not limited to, the following types of activities:
    - Assessing how financial or commercial arrangements, including compensation models and grid service valuations, can create more equitable distribution of benefits, for example, by supporting the ownership of DER assets by Tribes, DACs, LMIs, MSIs, and diverse businesses and the integration of assets owned by these groups into DESs.
    - Developing partnerships, for example with community choice aggregators, to increase energy democracy and participation by Tribes, DACs, LMIs, MSIs, diverse businesses.
    - Developing strategies to target the benefits of improved reliability (e.g., reduction in energy burden) for Tribes, DACs, LMIs, MSIs, diverse businesses even if they are not asset owners.
    - Assessing potential negative impacts of this approach and how to avoid passing those onto Tribes, DACs, LMIs, MSIs, diverse businesses.
3. **Engagement**. Identify individuals or groups that have specific expertise in just and equitable DERs or DESs and outline engagement strategies for how the team will collaborate with these groups for CBP Part C. Describe plans to disseminate results to Tribal communities, LMI communities, or DACs in collaboration with those communities to understand the potential for replication.

5.6.2.4 Community Partnership Documentation

(PDF)	**File Naming Convention:** ControlNumber_LeadOrganization_Partner_Doc.pdf

In support of the Community Benefits Plan, applicants may submit letters, Memoranda of Understanding, or other similar agreements from partnering tribes, labor unions, and/or community entities specifically describing the nature of existing or planned partnerships. If the applicant intends to enter into a Workforce and Community Agreement, please include letters from proposed partners.

5.6.2.5 Resumes

(PDF)	**File Naming Convention:** ControlNumber_LeadOrganization_Resumes.pdf

A resume must be provided for all senior and key personnel. A resume provides information that can be used by reviewers to evaluate the individual's relevant skills and experience of the personnel. Resumes may be up to two pages in length.

5.6.2.6 Letters of Commitment

(PDF)	**File Naming Convention:** ControlNumber_LeadOrganization_LOCs.pdf

Submit letters of commitment from all subrecipient and third-party cost share providers. If applicable, the letter must state that the third-party cost share provider is committed to providing a specific minimum dollar amount or value of in-kind contributions allocated to cost sharing. The following information for each third party contributing to cost sharing should be identified: (1) the name of the

organization; (2) the proposed dollar amount to be provided; and (3) the proposed cost sharing type – (cash or in-kind contributions). Each letter must not exceed one page.

For Energy Service and/or Offtake Arrangements: The applicant must provide letters of commitment for the project partners. If letters of commitment are not signed at the time of application, the Applicant must clearly identify the intended partners and outline clear and concise steps to engage with and secure the intended partnerships and identify when (what project phase) commitments must be finalized. If there is an intention to sell power or other services, identify the general terms of the service agreement, and when these agreements must be finalized. The letters of commitment should be submitted as a separate attachment through OCED eXCHANGE.

5.6.2.7 Budget Justification

(Excel)	**File Naming Convention:** ControlNumber_LeadOrganization_Budget_Justification.xlsx ControlNumber_LeadOrganization_Subrecipient_Budget_Justification.xlsx

The Budget Justification must include the Budget Justification Workbook and Subrecipient budget justification (if applicable). The Budget Justification Workbook is designed as a multipurpose tool used as a template for the duration and life of the award agreement.

At the application phase, DOE is aware that applicants may be able to only provide estimates for some line items while other line items may not be included in the budget submitted with the application. A budget submitted at the time of application may contain a less detail than a potential revised budget workbook submitted in future agreement amendments or modifications. The workbook is used as a template at multiple phases of the project, it is designed to provide line items of varying levels of detail to for inclusion in the application and future potential award phases.

Applicants must provide their Budget Information in a form available on OCED eXCHANGE at https://OCED-exchange.energy.gov/. Applicants must complete each tab of this "Budget Justification Workbook" for the project, including all work to be performed by the prime recipient and its subrecipients and contractors. Applicants should show alignment with expenditure guidance as listed in Section 2.2.

Applicants must include costs associated with implementing the various applicable requirements (e.g., Buy America requirements for infrastructure projects, Davis-Bacon, reporting, oversight) and the Community Benefits Plan, and with required annual audits, and with incurred cost proposals in their proposed budget documents.

5.6.2.8 Summary for Public Release

(PDF, 1 page)	**File Naming Convention:** ControlNumber_LeadOrganization_PublicRelease

Applicants must submit a one-page summary of their project that is suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant, the lead project manager/principal investigator(s), the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (e.g., benefits, outcomes), major participants (for collaborative projects), and the project's commitments and goals

described in the CBP. This document must not include any proprietary or sensitive business information as DOE may make it available to the public after selections are made.

5.6.2.9 Summary Slide

(MS PowerPoint)	**File Naming Convention:** ControlNumber_LeadOrganization_Slide.pptx

Applicants must provide a single slide summarizing the proposed project. The Summary Slide must include the following information:

- A project summary.
- Proposed project goals.
- Any key graphics (illustrations, charts and/or tables).
- The project's key idea/takeaway.
- Topline community benefits.
- Project title, prime recipient, Principal Investigator/Lead Project Manager, and senior/key personnel information.
- Total project costs, including DOE funds and proposed applicant cost share.

5.6.2.10 Disclosure of Connections with Foreign Countries of Risk

(PDF)	**File Naming Convention:** ControlNumber_LeadOrganization_ConnectionDisclosure.pdf

Applicants must identify any of the following connections in relation to the applicant or proposed subrecipients:

1. Any current or pending subsidiary, foreign business entity, or offshore entity that is based in or funded by a foreign country of risk;
2. Any current or pending contractual or financial obligation or other agreement specific to a business arrangement, joint venture or joint venture-like arrangement with an entity owned by a foreign country of risk or foreign entity based in a foreign country of risk;
3. Any current or pending change in ownership structure of the applicant or proposed subrecipients that increases foreign ownership elated to a foreign country of risk. Each notification shall be accompanied by a complete and up-to-date capitalization table showing all equity interests held, including limited liability company (LLC) and partnership interests, as well as derivative securities. Include both the number of shares issued to each equity holder, as well as the percentage of that series and of all equity on fully diluted basis. For each equity holder, provide the place of incorporation and principal place of business, as applicable. If the equity holder is a natural person, identify the citizenship(s).
4. Any current or pending venture capital or institutional investment by an entity that has a general partner or individual holding a leadership role in such entity who has an affiliation with a foreign country of risk; and
5. Any current or pending technology licensing or intellectual property sales to a foreign country of risk.

DOE reserves the right to request additional or clarifying information based on the information submitted.

Foreign Country of Risk. DOE has designated the following countries as foreign countries of risk: Iran, North Korea, Russia, and China. This list is subject to change.

5.6.2.11 Current and Pending Support Disclosures

(PDF)	**File Naming Convention:** ControlNumber_LeadOrganization_Current_Support

Current and pending support is intended to allow the identification of potential duplication, overcommitment, potential conflicts of interest or commitment, and all other sources of support. As part of the application, the lead project manager and all senior/key personnel at the applicant and subrecipient level must provide a list of all sponsored activities, awards, and appointments, whether paid or unpaid; provided as a gift with terms or conditions or provided as a gift without terms or conditions; full-time, part-time, or voluntary; faculty, visiting, adjunct, or honorary; cash or in-kind; foreign or domestic; governmental or private-sector; directly supporting the individual's research or indirectly supporting the individual by supporting students, research staff, space, equipment, or other research expenses. All connections with foreign government-sponsored talent recruitment programs must be identified in current and pending support.

For every activity, list the following items:

- Sponsor of the activity or the source of funding;
- Award or other identifying number;
- Title of the award or activity. If the title of the award or activity is not descriptive, add a brief description of the research being performed that would identify any overlaps or synergies with the proposed research;
- Total cost or value of the award or activity, including direct and indirect costs and cost share. For pending proposals, provide the total amount of requested funding;
- Award period (start date – end date); and
- Person-months of effort per year being dedicated to the award or activity.

To identify overlap, duplication of effort, or synergistic efforts, append a description of the other award or activity to the current and pending support.

Details of any obligations, contractual or otherwise, to any program, entity, or organization sponsored by a foreign government must be provided on request to either the applicant institution or DOE. Supporting documents of any identified source of support must be provided to DOE on request, including certified translations of any document.

The lead project manager(s) senior/key personnel must provide a separate disclosure statement listing the required information above regarding current and pending support. Each individual must sign and date their respective disclosure statement and include the following certification statement:

> *I, [Full Name and Title], certify to the best of my knowledge and belief that the information contained in this Current and Pending Support Disclosure Statement is true, complete, and accurate. I understand that any false, fictitious, or fraudulent information, misrepresentations, half-truths, or omissions of any material fact, may subject me to criminal, civil or administrative penalties for fraud, false statements, false claims or otherwise. (18 U.S.C. §§ 1001 and 287, and 31 U.S.C. §§ 3729-3733 and 3801-3812). I further understand and agree that (1) the statements and representations made herein are material to DOE's funding decision, and (2) I have a*

responsibility to update the disclosures during the period of performance of the award should circumstances change which impact the responses provided above.

The information may be provided in the format approved by the National Science Foundation (NSF), which may be generated by the Science Experts Network Curriculum Vita (SciENcv), a cooperative venture maintained at https://www.ncbi.nlm.nih.gov/sciencv/, and is also available at https://www.nsf.gov/bfa/dias/policy/nsfapprovedformats/cps.pdf. The use of a format required by another agency is intended to reduce the administrative burden to researchers by promoting the use of common formats. If the NSF format is used, the individual must still include a signature, date, and a certification statement using the language included in the paragraph above.

Definitions:

Current and pending support
(a) All resources made available, or expected to be made available, to an individual in support of the individual's research, development, demonstration, and deployment (RDD&D) efforts, regardless of

i. whether the source is foreign or domestic;
ii. whether the resource is made available through the entity applying for an award or directly to the individual; or
iii. whether the resource has monetary value; and

(b) includes in-kind contributions requiring a commitment of time and directly supporting the individual's RDD&D efforts, such as the provision of office or laboratory space, equipment, supplies, employees, or students. This term has the same meaning as the term Other Support as applied to researchers in NSPM-33:

For researchers, "Other Support" includes all resources made available to a researcher in support of and/or related to all of their professional RDD&D efforts, including resources provided directly to the individual or through the organization, and regardless of monetary value (e.g., even if the support received is only in-kind, such as office/laboratory space, equipment, supplies, or employees).

This includes resource and/or financial support from all foreign and domestic entities, including but not limited to, gifts provided with terms or conditions, financial support for laboratory personnel, and participation of student and visiting researchers supported by other sources of funding.

Senior/key personnel
An individual who contributes in a substantive, meaningful way to the scientific development or execution of a RDD&D project proposed to be carried out with DOE award.[35]

5.6.2.12 Potentially Duplicative Federal Funding Notice

(PDF)	ControlNumber_LeadOrganization_PDF.pdf

[35] Typically, these individuals have doctoral or other professional degrees, although individuals at the masters or baccalaureate level may be considered senior/key personnel if their involvement meets this definition. Consultants, graduate students, and those with a postdoctoral role also may be considered senior/key personnel if they meet this definition.

If the applicant or project team member has other active awards of federal funds, the applicant must determine whether the activities of those awards potentially overlap with the activities set forth in its application to this FOA.

If there is a potential overlap, the applicant must notify DOE in writing of the potential overlap and state how it will ensure any project funds (i.e., recipient cost share and federal funds) will not be used for identical cost items under multiple awards. Likewise, for projects that receive funding under this FOA, if a recipient or project team member receives any other award of federal funds for activities that potentially overlap with the activities funded under the DOE award, the recipient must promptly notify DOE in writing of the potential overlap and state whether project funds from any of those other federal awards have been, are being, or are to be used (in whole or in part) for one or more of the identical cost items under the DOE award. If there are identical cost items, the recipient must promptly notify the DOE Grants and Agreements Officer in writing of the potential duplication and eliminate any inappropriate duplication of funding.

If a recipient or project team member receives any other award of federal funds for activities that potentially overlap with the activities funded under the DOE award, the recipient must promptly notify DOE in writing of the potential overlap and state whether project funds from any of those other federal awards have been, are being, or are to be used (in whole or in part) for one or more of the identical cost items under the DOE award. If there are identical cost items, the recipient must promptly notify the DOE Grants and Agreements Officer in writing of the potential duplication and eliminate any inappropriate duplication of funding. If the applicant has no potentially duplicative funding with respect to this funding opportunity, applicants are encouraged to submit a document indicating they do not potential overlap with activities funded under other awards for recordkeeping purposes.

5.6.2.13 Disclosure of Lobbying Activities

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Recipients and subrecipients may not use any federal funds to influence or attempt to influence, directly or indirectly, any officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress, in connection with any Federal contract, grant, loan, or cooperative agreement. In addition, if any registrants under the Lobbying Disclosure Act of 1995 have made a lobbying contact on behalf of the applicant (including with non-federal funds) with respect to this funding opportunity, the applicant must complete and submit SF-LLL, "Disclosure of Lobbying Activities" , which can be found on the OCED eXCHANGE website under the Application Forms and Templates section. If a lobbying contact has not been made on behalf of the applicant (including with non- federal funds) with respect to this funding opportunity, applicants are encouraged to submit the form indicating they do not have lobbying activities to disclose for recordkeeping purposes.

6.0 Application Review Information

6.1 Compliance Criteria

All applicant submissions for Concept Papers and Full Applications must:

- Comply with the applicable content and form requirements listed in Section 5.0 of the FOA;
- Include all required documents;
- Upload successfully in OCED eXCHANGE including clicking the "Submit" button; and
- Comply with the submission deadline stated in the FOA.

DOE will not review or consider submissions submitted through means other than OCED eXCHANGE, submissions submitted after the applicable deadline, or incomplete submissions.

6.2 Technical Review Criteria

6.2.1 Concept Papers

Concept Papers are evaluated based on the following criterion. All factors within the criterion are of equal weight.

Concept Paper Criterion: Overall FOA Responsiveness and Viability of the Project (Weight: 100%)
This criterion involves consideration of the following factors:

- Applicant clearly describes the proposed scope of the demonstration project including the key technologies and systems, control and operational approach, total cost of the project and non-federal cost share amount, grid services and value provided, proposed timeline, and other applicant-proposed metrics.
- Applicant clearly identifies how the proposed approach could be replicated and/or extended to similar systems with moderate variability in grid topology and assets.
- Where appropriate, the applicant demonstrates how it plans to leverage other federal and/or state funding and/or incentive programs (including rebates and tax credits) and partnerships.
- Applicant has identified a preliminary project development plan and timeline that shows a clear path to rapid execution of the proposed project, including a finance plan, any key risks, challenges, and possible mitigation strategies, and has shown the impact that DOE funding and the proposed project would have on supporting decarbonization goals.
- Applicant and proposed team have the qualifications, experience, capabilities, and other resources necessary to design, develop, build, and operate the proposed project.
- Description of strategies to ensure meaningful community and labor engagement, quality jobs and workforce development, DEIA, benefits to the surrounding community, the Justice40 Initiative, and methods to ensure accountability for all strategies.
- Proposed work, if successfully accomplished, would meet the objectives as stated in the FOA, including achieving market liftoff and attracting follow-on investments from the private sector.

6.2.2 Applications

Applications will be evaluated against the technical review criteria shown. All factors within a given criterion are of equal weight.

Criterion 1: Technical Approach and Impact (20%)
This criterion involves consideration of the following factors:

- Degree to which the proposed approach enables reliable grid operations utilizing distributed energy resources to provide grid services and functionality.

- Extent to which the application specifically and convincingly demonstrates how the proposed project will be capable of meeting the technical objectives and system requirements (See Section 2.2) outlined in the FOA.
- Degree to which the proposed project can justify an ability to quickly achieve its technical objectives.
- Degree to which the proposed approaches are replicable and extensible to systems with moderate variation in DERs and grid topology.
- Degree to which the proposed project can justify an ability to enable, encourage and accelerate broader industry-wide implementation.
- Degree to which the proposed technologies, integrated systems, and control and operational approaches are clearly described in the application. This includes the sufficiency of technical detail provided in the application addressing whether the proposed technologies and systems are commercially viable (i.e., able to deploy at scale).
- Degree to which technical work scope to achieve full system operation is clearly defined, including testing and validation plans.
- Adequacy of the details in the preliminary environmental impact evaluation to assess relative environmental value of the approach and viability of the approach if scaled and replicated more widely within the distribution system.
- Where appropriate, the extent to which the applicant demonstrates how it plans to leverage other federal and/or state programs and partnerships.
- Adequacy and clarity of the **technical** risk assessment and management discussion, including technology, systems integration, control approach, infrastructure, engineering, scale-up and similar elements as well as the quality of the mitigation strategies to address them.
- Adequacy and clarity of the **security** risk assessment and management discussion, including preliminary cybersecurity, physical security, and internal and external threat identification and response planning. This includes identification and evaluation of proposed software management systems.

Criterion 2: Financial and Market Viability (25%)

This criterion involves consideration of the following factors:

- Degree to which the applicant assesses and demonstrates potential market competitiveness and sustainability for the proposed project, technology, and operational approach--including specific grid services to be provided--through market analysis and offtake agreements.
- Adequacy of the details in the preliminary techno-economic analysis to justify viability and feasibility of the project and the value proposition and timeline of the technology to be replicated.
- Availability, credibility, and risk/terms of non-federal cost share sources and funds necessary to meet ongoing cost share needs. This includes the ability to leverage DOE financial assistance funding from this FOA with state and local incentives and private financing.
- Degree to which the applicant addresses each key participating organization's financial commitment to the proposed project including overall financial strength and financial capability to implement the proposed plan.

- Degree to which the application justifies the proposed project's economic viability, sustainability, and potential replication and/or extension beyond DOE funding, including achieving market adoptability and follow-on investments.
- Degree to which the proposed project utilizes and leverages available regional resources such as existing incentive programs and DER asset bases, infrastructure, workforce, supplies, or equipment to meet the required FOA objectives.
- Adequacy and justification of the proposed budget and spend plan covering both DOE funding and non-federal cost share. This includes applicant's ability to provide contingency to meet unknown project cost overruns often seen with large demonstration projects.
- Adequacy of the business plan for developing key project agreements such as financing, acquisition strategies, power purchase agreements, supply chain, offtake (sales) agreements, and other relevant project documents.
- Adequacy and clarity of the **financial** risk assessment and management discussion including project finance, market and regulatory structures, commercial business models, and similar elements as well as the quality of the mitigation strategies to address them.

Criterion 3: Management and Organization (20%)

This criterion involves consideration of the following factors:

- Capability of the prime recipient, the proposed team, and key personnel to manage and address all aspects of the proposed work with a high probability of success.
- Qualifications and relevant experience, including number of years and specific project experience, of the key project participants in performing similar projects and the allocation of responsibility commensurate with this experience.
- Reasonableness of time commitment from key personnel to successfully manage a project of this size and complexity.
- Demonstrated safety performance history of all team organizations.
- Level of participation by project participants as evidenced by letter(s) of commitment and how well they are integrated into the Workplan.
- Degree to which existing facilities and/or infrastructure provided by the applicant team are leveraged to support the project.
- Strength of the project management discussion in the project Workplan to give confidence in a high likelihood of project success.
- Degree to which the applicant has defined and described a project management structure that addresses interfaces with DOE and key team members.
- Clarity and appropriateness of the roles of the team members.
- Adequacy and clarity of the **organizational** risk assessment and management discussion, including project team, project management structure, and similar elements as well as the quality of the mitigation strategies to address them.

Criterion 4: Workplan (20%)

This criterion involves consideration of the following factors:

- Overall reasonableness of the Integrated Project Schedule based on the associated complexity of the proposal.
- Degree to which the proposed Workplan and critical path have been clearly and thoroughly 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 will succeed in meeting the project goals.
- Strength and level of clarity in the definition of the project phases, metrics, Integrated Project Schedule, and Go/No-Go criteria.
- Strength of the deliverables as defined in the application, such that DOE and independent experts will be able to review key technical, financial, regulatory, permitting, and community benefit milestones at appropriate project Go/No-Go decision points to mitigate project risk and enable the successful design, procurement, construction, and operation of the proposed project.
- Potential for disruption to current system operations and the degree to which a management plan for that disruption is presented.
- Extent to which the CBP is integrated into the project management schedule and provides mechanisms with measurable actions that enable impacts to project direction in a timely manner.
- Adequacy and clarity of the **execution** risk assessment and management discussion, including engineering, procurement, construction, permitting, safety, testing, operations, and similar elements as well as the quality of the mitigation strategies to address them.

Criterion 5: Community Benefits Plan (15%)

This criterion involves consideration of the following factors:

Overall Approach

- Extent to which the team and resources—including staff and budget—are capable of implementing plans outlined in the CBP.
- Adequacy and clarity of the **community benefit** risk assessment and management discussion as well as the quality of the mitigation strategies to address identified risks.

Community and Labor Engagement

- Extent to which the project demonstrates a clear and appropriately robust plan to meaningfully engage local stakeholders, including community-based organizations, organizations that support or work with disadvantaged communities, labor unions and/or Tribes, in a manner that can impact project decisions, including any plans to negotiate enforceable Workforce and Community Agreements (e.g., good neighbor agreements, workforce agreements, project labor agreements, collective bargaining agreements, and similar agreements).
- Extent to which the project will collaborate and partner with experts in just and equitable implementation of DERs or DESs to inform project planning, execution, and assessments.

Investing in the American Workforce

- Extent to which the CBP demonstrates that the jobs supported by the proposed project will be quality jobs and provides a robust and credible plan to attract and retain skilled workers (e.g., through a workforce and community agreement and commitment to workers' free and fair choice to join a union or labor organization of their choosing, and/or commitments to wages above prevailing wage requirements, benefits, or other worker support).
- Extent to which the CBP demonstrates plans to invest in workforce education and training, support workers' skill acquisition and opportunities for advancement, and utilize an appropriately credentialed workforce, including but not limited to partnerships with high-quality workforce development programs.

Diversity, Equity, Inclusion, and Accessibility

- Extent to which the CBP includes specific and high-quality actions to meet DEIA goals, which may include DEIA recruitment procedures, supplier diversity plans, partnerships with MSIs, and other DEIA initiatives; and
- Extent to which the plans to extend DES and DER benefits to Tribes, DACs, LMIs, MSIs, and diverse businesses include specific and high-quality actions to advance DEIA in the future.

Justice40 Initiative

- Extent to which the CBP identifies specific and measurable benefits, how the benefits will flow, and how negative impacts would be mitigated for disadvantaged communities.
- Extent to which plans to extend DES and DER benefits to disadvantaged or underserved communities will result in improved understanding of mechanisms to support equitable implementation of DES and DER in the future.

6.3 Other Selection Factors

6.3.1 Program Policy Factors

In addition to the above criteria, the Selection Official may consider the following program policy factors in determining which applications to select for award negotiations:

- Degree to which the proposed project exhibits technological diversity in technology and implementation approach when compared to the existing DOE project portfolio and other projects selected from the subject FOA;
- Degree to which the proposed project exhibits diversity and differentiation in business model and valuation approaches when compared to existing DOE project portfolio and existing operational systems;
- Degree to which the proposed project, or group of projects, represent a desired geographic distribution (considering past awards and current applications);
- Degree to which the project's solution or strategy will maximize deployment or replication;
- Level of regulatory, permitting and/or local policy support for the proposed project;
- Degree to which the proposed demonstration supports secure, resilient domestic clean energy supply chains;
- Degree to which the project contributes to a portfolio that meets Justice40 requirements and meets the goals reflected in the CBP criteria by producing additional benefits to communities, particularly disadvantaged communities, such as, reducing co-pollutants and other environmental (e.g., air, water) burdens;
- Degree to which the proposed project incorporates applicant or team members from Minority Serving Institutions (e.g., Historically Black Colleges and Universities (HBCUs)/Other Minority Serving Institutions); and partnerships with minority business enterprises, minority-owned businesses, woman-owned businesses, veteran-owned businesses, or Tribal nations.

6.4 Evaluation and Selection Process

6.4.1 Overview

The evaluation process consists of multiple phases; each includes an initial eligibility review and a thorough technical review. Rigorous technical reviews of eligible submissions are conducted by reviewers that are experts in the subject matter of the FOA. Ultimately, the Selection Official considers the recommendations of the reviewers, along with other considerations such as the program policy factors, in determining which applications to select.

6.4.2 Pre-Selection Interviews

As part of the evaluation and selection process, DOE may invite one or more applicants to participate in pre-selection interviews. Pre-selection interviews are distinct from and more formal than pre-selection clarifications (See Section 6.4.3). The invited applicant(s) will meet with DOE representatives to provide clarification on the contents of the Full Applications and to provide DOE an opportunity to ask questions regarding the proposed project. The information provided by applicants to DOE through pre-selection interviews contributes to DOE's selection decisions.

DOE will not reimburse applicants for travel and other expenses relating to the pre-selection interviews, nor will these costs be eligible for reimbursement as pre-award costs. In the alternative, DOE may invite certain applicants to participate in a one-on-one meeting with DOE virtually.

Any pre-selection interviews and site visits may also include discussions with affected stakeholders or communities potentially impacted to understand their concerns/risks.

Participation in pre-selection interviews with DOE does not signify that applicants have been selected for award negotiations.

6.4.3 Pre-Selection Clarifications

DOE may determine that pre-selection clarifications are necessary from one or more applicants. Pre-selection clarifications are distinct from and less formal than pre-selection interviews. These pre-selection clarifications will solely be for the purposes of clarifying the Full Application. The pre-selection clarifications may occur before, during or after the merit review evaluation process. Information provided by an applicant that is not necessary to address the pre-selection clarification question will not be reviewed or considered. Typically, a pre-selection clarification will be carried out through either written response to DOE's written clarification questions or video or conference calls with DOE representatives.

The information provided by applicants to DOE through pre-selection clarifications is incorporated in their Full Applications and contributes to DOE's selection decisions. If DOE contacts an applicant for pre-selection clarification purposes, it does not signify that the applicant has been selected for negotiation of award or that the applicant is among the top-ranked Full Applications.

DOE will not reimburse applicants for expenses relating to the pre-selection clarifications, nor will these costs be eligible for reimbursement as pre-award costs.

6.4.4 Recipient Integrity and Performance Matters

DOE, prior to making a federal award with a total amount of federal share greater than the simplified acquisition threshold, is required to review and consider any information about the applicant that is in the designated integrity and performance system accessible through SAM (currently the Federal Awardee Performance and Integrity Information System (FAPIIS)[36]).

The applicant, at its option, may review information in the designated integrity and performance systems accessible through SAM and comment on any information about itself that a federal awarding agency previously entered and is currently in the designated integrity and performance system accessible through SAM.

DOE will consider any written comments by the applicant, in addition to the other information in the designated integrity and performance system, in making a judgment about the applicant's integrity, business ethics, and record of performance under federal awards when completing the review of risk posed by applicants as described in 2 C.F.R. § 200.206.

6.4.5 Selection

The Selection Official may consider the technical merit, the Federal Merit Review Panel's recommendations, program policy factors, risk and other related assessments, and the amount of funds available in arriving at selections for this FOA.

6.5 Notice of Selection and Award Negotiation Dates

OCED will notify applicants that are selected for negotiation of award and selected applicants will be notified of their award negotiation dates.

7.0 Award Administration Information

7.1 Notifications

7.1.1 Ineligible Submissions

Ineligible Concept Papers and Full Applications will not be further reviewed or considered for award. The Grants and Agreements Officer will send a notification letter by email to the technical and administrative points of contact designated by the applicant in OCED eXCHANGE. The notification letter will state the basis upon which the Concept Paper or the Full Application is ineligible and not considered for further review.

[36] *See* 41 USC § 2313

7.1.2 Concept Paper Notifications

DOE will notify applicants of its determination to encourage or discourage the submission of a Full Application. DOE will post these notifications to OCED eXCHANGE. DOE may include general comments provided from reviewers on an applicant's Concept Paper in the encourage/discourage notifications.

Applicants may submit a Full Application even if they receive a notification discouraging them from doing so. By discouraging the submission of a Full Application, DOE intends to convey its lack of programmatic interest in the proposed project. Such assessments do not necessarily reflect judgments on the merits of the proposed project. The purpose of the Concept Paper phase is to save applicants the considerable time and expense of preparing a Full Application that is unlikely to be selected for award negotiations.

7.1.3 Full Application Notifications

DOE will notify applicants of its determination via a notification letter by email to the technical and administrative points of contact designated by the applicant in OCED eXCHANGE. The notification letter will inform the applicant whether its Full Application was selected for award negotiations. Alternatively, DOE may notify one or more applicants that a final selection determination on particular Full Applications will be made at a later date, subject to the availability of funds or other factors.

7.1.3.1 Successful Applicants

Receipt of a notification letter selecting a Full Application for award negotiations does not authorize the applicant to commence performance of the project. If a Full Application is selected for award negotiations, it is not a commitment by DOE to issue an award. Applicants do not receive an award until award negotiations are complete and the Grants and Agreements Officer executes the funding agreement, accessible by the prime recipient in FedConnect.

The award negotiation process will take approximately 90 days. Applicants must designate a primary and a backup point-of-contact in OCED eXCHANGE with whom DOE will communicate to conduct award negotiations. The applicant must be responsive during award negotiations by providing requested documentation, including documentation required post-selection and meet the negotiation deadlines. If the applicant fails to do so or if award negotiations are otherwise unsuccessful, DOE will cancel the award negotiations and rescind its Selection. DOE reserves the right to terminate award negotiations at any time for any reason.

7.1.3.2 Alternate Selection Determinations

In some instances, an applicant may receive a notification that its Full Application was not selected for award and DOE designated the Full Application to be an alternate. As an alternate, DOE may consider the Full Application for federal funding in the future. A notification letter stating the Full Application is designated as an alternate does not authorize the applicant to commence performance of the project. DOE may ultimately determine to select or not select the Full Application for award negotiations.

7.1.3.3 Unsuccessful Applicants

DOE shall promptly notify in writing each applicant whose Full Application has not been selected for award or whose Full Application cannot be funded because of the unavailability of appropriated funds.

7.2 Award Conditions and Reporting

Recipients of an award made under this FOA must comply with requirements of all applicable federal, state, and local laws, regulations, DOE policy and guidance, instructions in this FOA, and the award terms and conditions. Recipients must require subrecipients' compliance with all applicable requirements. Reporting requirements are identified on the Federal Assistance Reporting Checklist, attached to the award agreement.

8.0 Questions/Agency Contacts

Upon the issuance of a FOA, DOE personnel are prohibited from communicating (in writing or otherwise) with applicants regarding the FOA except through the established question and answer (Q&A) process as described below. Specifically, questions regarding this FOA must be submitted to: oced.des.foa@hq.doe.gov. Questions must be submitted not later than 3 business days prior to the application due date and time. Please note, feedback on individual concepts will not be provided through Q&A.

All questions and answers related to this FOA will be posted on OCED eXCHANGE at: https://OCED-exchange.energy.gov. **This specific FOA Number (as stated on the cover page) must be selected first to view the questions and answers specific to this FOA**. OCED will attempt to respond to a question within 3 business days, unless a similar question and answer has already been posted on the website.

Questions related to the registration process and use of the OCED eXCHANGE website should be submitted to: OCED-ExchangeSupport@hq.doe.gov. Include FOA name and number in subject line.

APPENDIX A – ADDITIONAL INFORMATION

A.1 Funding Restrictions

A.1.1 Allowable Costs

All expenditures must be allowable, allocable, and reasonable in accordance with the applicable federal cost principles. Pursuant to 2 CFR § 910.352, the cost principles in the Federal Acquisition Regulation (48 CFR Part 31 Subpart 31.2) apply to for-profit entities. The cost principles contained in 2 CFR Part 200 Subpart E apply to all entities other than for-profits.

A.1.2 Pre-Award Costs

Applicants selected for award negotiations (selectees) must request prior written approval to charge pre-award costs. Pre-award costs are those incurred prior to the effective date of the federal award directly pursuant to the negotiation and in anticipation of the federal award where such costs are necessary for efficient and timely performance of the scope of work. Such costs are allowable only to the extent that they would have been allowable if incurred after the date of the federal award and **only** with the written approval of DOE through the DOE Grants and Agreements Officer. Pre-award costs cannot be incurred prior to the Selection Official signing the Selection Statement and Analysis.

Pre-award expenditures are made at the applicant's risk. OCED is not obligated to reimburse costs: (1) in the absence of appropriations; (2) if an award is not made; or (3) if an award is made for a lesser amount than the applicant anticipated. This includes any action related to the proposed project that would have an adverse impact on the environment or limit the choice of reasonable alternatives prior to DOE completing the NEPA review process.

A.1.3 Buy America Requirements for Infrastructure Projects

Pursuant to the Build America, Buy America Act (referred to here as "Buy America") in Title IX of Division G of the BIL, federally assisted projects that involve infrastructure work, undertaken by applicable recipient types, require that:

- All iron, steel, and manufactured products used in the infrastructure work are produced in the United States; and
- All construction materials used in the infrastructure work are manufactured in the United States.

Whether a given project must apply this requirement is project-specific and dependent on several factors, such as the recipient's entity type, whether the work involves "infrastructure" as that term is defined in Section 70912 of the BIL, and whether the infrastructure in question is publicly owned or serves a public function.

Applicants are strongly encouraged to assess whether their project may have to apply this requirement, both to make an early determination as to the need of a waiver, as well as to determine what impact, if any, this requirement may have on the proposed project's budget.

For additional information on Buy America requirements, visit DOE's Build America, Buy America webpage.

A.1.4 Davis-Bacon Act Requirements

The "Davis-Bacon Act" may apply to projects awarded under this FOA. Accordingly, all laborers and mechanics employed by the recipient, subrecipients, contractors or subcontractors in the performance of construction, alteration, or repair work funded in whole or in part under this FOA shall be paid wages at rates not less than those prevailing on similar projects in the locality, as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code commonly referred to as the "Davis-Bacon Act" (DBA). There are weekly reporting requirements.

Recipients of funding under this FOA will also be required to undergo DBA compliance training and to maintain competency in DBA compliance. The Contracting Officer will notify the recipient of any DOE sponsored DBA compliance trainings. The Department of Labor offers free Prevailing Wage Seminars several times a year that meet this requirement, at https://www.dol.gov/agencies/whd/government-contracts/construction/seminars/events.

For additional guidance on how to comply with the DBA provisions and clauses, see https://www.dol.gov/agencies/whd/government-contracts/construction and https://www.dol.gov/agencies/whd/government-contracts/protections-for-workers-in-construction.

A.1.5 Risk Assessment

Pursuant to 2 CFR 200.206, DOE will conduct an additional review of the risk posed by applications submitted under this FOA.

Such risk assessment will consider:

1. Financial stability;
2. Quality of management systems and ability to meet the management standards prescribed in 2 CFR Part 200 and 2 CFR Part 910;
3. History of performance;
4. Audit reports and findings; and
5. The applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-federal entities.

DOE may make use of other publicly available information and the history of an applicant's performance under DOE or other federal agency awards in its risk assessment. Depending on the severity of the findings and whether the findings were resolved, DOE may elect not to fund the applicant.

In addition to this review, DOE must comply with the guidelines on government-wide suspension and debarment in 2 CFR Part 180 and must require non-federal entities to comply with these provisions. These provisions restrict federal awards, subawards and contracts with certain parties that are debarred, suspended or otherwise excluded from or ineligible for participation in federal programs or activities.

The Community Benefits Plan is DOE's approach to identify and mitigate social risks associated with project implementation. Risk assessment should include assessment of community opposition, potential labor disputes, availability of a skilled workforce, public and worker health and safety considerations, etc.

The applicant should consider that for large construction projects, DOE may require a Project Labor Agreement (PLA), an agreement between a private entity (or entities) and a labor organization (or organizations) representing individuals who will be working on a construction project. Assessment of applicability will be conducted on a case-by-case basis.

Further, as DOE invests in critical infrastructure and funds critical and emerging technology areas, DOE also considers possible vectors of undue foreign influence in evaluating risk. If high risks are identified and cannot be sufficiently mitigated, DOE may elect to not fund the award.

A.1.6 Human Subjects

No funding will be provided under this FOA for any activities involving human subjects.

A.1.7 Performance of Work in the United States (Foreign Work Waiver)

a. Requirement

All work performed under awards issued under this FOA must be performed in the United States. The recipient must flow down this requirement to its subrecipients.

b. Failure to Comply

If the recipient fails to comply with the Performance of Work in the United States requirement, DOE may deny reimbursement for the work conducted outside the United States and such costs may not be recognized as allowable recipient cost share.

The recipient is responsible should any work be performed outside the United States, absent a waiver, regardless of whether the work is performed by the recipient, subrecipients, contractors or other project partners.

c. Waiver

To seek a foreign work waiver, the applicant must submit a written waiver request to DOE. Appendix D lists the information that must be included in a request for a foreign work waiver.

A.1.8 Prohibition related to Foreign Government-Sponsored Talent Recruitment Programs

Prohibition

Persons participating in a *Foreign Government-Sponsored Talent Recruitment Program of a Foreign Country of Risk* are prohibited from participating in projects selected for federal funding under this FOA. Should an award result from this FOA, the recipient must exercise ongoing due diligence to reasonably ensure that no individuals participating on the DOE-funded project are participating in a *Foreign Government-Sponsored Talent Recruitment Program of a Foreign Country of Risk*. Consequences for violations of this prohibition will be determined according to applicable law, regulations, and policy. Further, the recipient must notify DOE within five (5) business days upon learning that an individual on the project team is or is believed to be participating in a foreign

government-sponsored talent recruitment program of a foreign country of risk. DOE may modify and add requirements related to this prohibition to the extent required by law.

Definitions

Foreign Government-Sponsored Talent Recruitment Program. An effort directly or indirectly organized, managed, or funded by a foreign government, or a foreign government instrumentality or entity, to recruit science and technology professionals or students (regardless of citizenship or national origin, or whether having a full-time or part-time position). Some foreign government-sponsored talent recruitment programs operate with the intent to import or otherwise acquire from abroad, sometimes through illicit means, proprietary technology or software, unpublished data and methods, and intellectual property to further the military modernization goals and/or economic goals of a foreign government.

Many, but not all, programs aim to incentivize the targeted individual to relocate physically to the foreign state for the above purpose. Some programs allow for or encourage continued employment at United States research facilities or receipt of federal research funds while concurrently working at and/or receiving compensation from a foreign institution, and some direct participants not to disclose their participation to U.S. entities. Compensation could take many forms including cash, research funding, complimentary foreign travel, honorific titles, career advancement opportunities, promised future compensation, or other types of remuneration or consideration, including in-kind compensation.

Foreign Country of Risk. DOE has designated the following countries as foreign countries of risk: Iran, North Korea, Russia, and China. This list is subject to change.

A.1.9 Affirmative Action and Pay Transparency Requirements

All federally assisted construction contracts exceeding $10,000 annually will be subject to the requirements of Executive Order 11246, as amended, Equal Employment Opportunity.

The Department of Labor's (DOL) Office of Federal Contractor Compliance Programs (OFCCP) uses a neutral process to schedule contractors for compliance evaluations. OFCCP's Technical Assistance Guide should be consulted to gain an understanding of the requirements and possible actions the recipients, subrecipients, contractors and subcontractors must take. Additional guidance may also be found in the National Policy Assurances, produced by DOE.

Additionally, for construction projects valued at $35 million or more and lasting more than one year, the recipients, subrecipients, contractors and subcontractors may be selected by OFCCP to participate in the Mega Construction Project Program. DOE, under relevant legal authorities including Sections 205 and 303(a) of Executive Order 11246, will require participation as a condition of the award. This program offers extensive compliance assistance with EO 11246.

A.2 Other Submission Requirements

A.2.1 Post Submission Materials and Just-In-Time Documents

Some materials will be required as post submission materials that are due after the merit review is complete. The applicant will be notified on what documents and materials to submit, the format required and where and when to submit.

A.2.1.1 Applicant Disclosure of Existing Work or Relationship with National Labs

Applicants shall disclose pre-existing work or relationship with national lab(s) that is prior to this FOA's application and that is or may be relevant to its FOA application.

A.2.2 Administrative and National Policy Requirements

To receive a federal award under this FOA, all applicants must follow applicable cross-cutting administrative and national policy requirements. The policies are requirements based on social, economic, or other objectives or considerations that may be attached to the expenditure of federal funds by award recipients, consortium participants, and contractors, in general, or may relate to the expenditure of federal funds for other specified activities. These requirements include, but are not limited to, the following:

- Clean Air Act
- Clean Water Act
- National Flood Insurance Act of 1968 and Flood Disaster Prevention Act of 1973 and EO 13690
- Title VI of the Civil Rights Act of 1964
- Section 504 of the Rehabilitation Act of 1973
- Age Discrimination Act of 1975.

A.3 Standards for Application Evaluation

Applications that are determined to be eligible will be evaluated in accordance with this FOA and the guidance provided in the "DOE Merit Review Guide for Financial Assistance and Unsolicited Proposals" available at https://www.energy.gov/management/articles/merit-review-guide-financial-assistance-and-unsolicited-proposals-current.

A.4 Evaluation and Administration by Non-Federal Personnel

In conducting the merit review evaluation, the Go/No-Go Reviews and Peer Reviews, the government may seek the advice of qualified non-federal personnel as reviewers. The government may also use non-federal personnel to conduct routine, nondiscretionary administrative activities, including DOE contractors. The applicant, by submitting its Concept Paper or Full Application, consents to the use of non-federal reviewers/administrators. Non-federal reviewers must sign conflict of interest and non-disclosure acknowledgements (NDA) prior to reviewing an application. Non-federal personnel conducting administrative activities must sign an NDA.

A.4.1 Treatment of Application Information

DOE takes very seriously the confidentiality of all applicants and will treat information submitted in applications, as well as the identity of applicants, as confidential to the fullest extent permissible under Federal law. For DOE to protect confidential information, the applicant must also treat the information as confidential and properly mark it as described below. DOE will not be able to protect information that the applicant has released publicly or is in the public domain. For additional information on DOE's Freedom of Information Act (FOIA) regulations, see 10 CFR Part 1004.

Applicants should not include business sensitive (e.g., commercial or financial information that is privileged or confidential), trade secrets, proprietary, or otherwise confidential information in their application unless such information is necessary to convey an understanding of the proposed project or to comply with a requirement in the FOA. Applicants are advised to not include any critically sensitive proprietary detail.

If an application includes business sensitive, trade secrets, proprietary, or otherwise confidential information, it is furnished to the federal government (government) in confidence with the understanding that the information shall be used or disclosed only for evaluation of the application. Such information will be withheld from public disclosure to the extent permitted by law, including the FOIA. Without assuming any liability for inadvertent disclosure, DOE will seek to limit disclosure of such information to its employees and to outside reviewers when necessary for merit review of the application or as otherwise authorized by law. This restriction does not limit the government's right to use the information if it is obtained from another source.

Applications, and other submissions containing confidential, proprietary, or privileged information must be marked as described below. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under the Freedom of Information Act or otherwise. The U.S. Government is not liable for the disclosure or use of unmarked information and may use or disclose such information for any purpose.

The cover sheet of the Concept Paper and Full Application, and other submissions must be marked as follows and identify the specific pages containing trade secrets, confidential, proprietary, or privileged information:

Notice of Restriction on Disclosure and Use of Data:
Pages [list applicable pages] of this document may contain trade secrets, confidential, proprietary, or privileged information that is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance or loan agreement between the submitter and the Government. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source. [End of Notice]

The header and footer of every page that contains confidential, proprietary, or privileged information must be marked as follows: "Contains Trade Secrets, Confidential, Proprietary, or Privileged Information Exempt from Public Disclosure." In addition, each line or paragraph containing proprietary, privileged, or trade secret information must be clearly marked with double brackets or highlighting.

Important Guidance for Company Submitters:

As per DOE's FOIA regulations and Department of Justice FOIA guidance, if DOE receives a FOIA request the following general steps will be taken:

1) DOE will review the request to determine whether your company's information is subject to the request. Only federal records are subject to FOIA requests. Depending on the circumstances, information submitted by an outside entity may be considered "federal records" for purposes of FOIA.

2) If your company information is determined to be a federal record and responsive to a FOIA request, DOE will review what is submitted in order to determine if DOE can make a determination whether the information is legally exempt.
   a) If DOE determines your information is fully exempt under an exemption and that it will not be released, DOE may not contact you.
   b) If DOE is unable to determine whether the information is exempt under an exemption or is planning on releasing some or all of your information, DOE will first contact you in order for you to have an opportunity to respond and provide additional justification as to why it may be exempt. DOE will do all that it can to work with company submitters to be in compliance with the law and maintain positive relations with company submitters.
   c) It is critical if DOE or DOE's contractors who are processing your FOIA contact you that you respond in a timely manner. DOE is under strict deadlines when processing a FOIA request.

A.5 Retention of Submissions

DOE expects to retain copies of all applications and other submissions. No submissions will be returned. By applying to DOE for funding, applicants consent to DOE's retention of their submissions.

A.6 Personally Identifiable Information

All information provided by the applicant must to the greatest extent possible exclude Personally Identifiable Information (PII), which is information which can be used to distinguish or trace an individual's identity, such as their name, social security number, biometric records, alone, or when combined with other personal or identifying information which is linked or linkable to a specific individual, such as date and place of birth, or mother's maiden name. See OMB Memorandum M-07-16 dated May 22, 2007, found at: https://www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/memoranda/2007/m07-16.pdf.

By way of example, applicants must screen resumes to ensure that they do not contain PII such as personal addresses, personal landline/cell phone numbers, and personal emails. **Under no circumstances should Social Security Numbers (SSNs) be included in the application**. Federal agencies are prohibited from collecting, using, and displaying unnecessary SSNs. See the Federal Information Security Modernization Act of 2014 (Pub. L. No. 113-283, Dec 18, 2014; 44 U.S.C. § 3551).

A.7 Teaming Partner List

DOE is compiling a "Teaming Partner List" to facilitate the formation of new project teams for this FOA. The Teaming Partner List allows organizations who may wish to participate on an application to express their interest to other applicants and to explore potential partnerships.

Updates to the Teaming Partner List will be available in the OCED eXCHANGE website. The Teaming Partner List will be regularly updated to reflect new teaming partners who provide their organization's information.

Submission Instructions:
Any organization or individual that would like to be included on this list should submit the following information: Organization's Name (if an organization), Contact Name, Organization's Website Address

(if an organization) or Individual's Website Address (if the individual has one that is relevant to the individual's proposed involvement), Contact Address, Contact Email, Contact Phone, Organization Type (if an organization), Area of Technical Expertise, Brief Description of Capabilities, and Area of Interest. Interested parties should email the information to oced.des.foa@hq.doe.gov with the subject line "Teaming Partner Information."

DISCLAIMER: By submitting a request to be included on the Teaming Partner List, the requesting individual or organization (if an organization) consents to the publication of the above-referenced information. By facilitating the Teaming Partner List, DOE is not endorsing, sponsoring, or otherwise evaluating the qualifications of the individuals and organizations that are self-identifying themselves for placement on this Teaming Partner List. DOE will not pay for the provision of any information, nor will it compensate any applicants or requesting individuals or organizations for the development of such information.

A.8 Uniform Commercial Code Financing Statements

Per 2 CFR 910.360 (Real Property and Equipment) when a piece of equipment is purchased by a for-profit recipient or subrecipient with federal funds, and when the federal share of the financial assistance agreement is more than $1,000,000, the recipient or subrecipient must:

Properly record, and consent to the Department's ability to properly record if the recipient fails to do so, Uniform Commercial Code (UCC) financing statement(s) for all equipment in excess of $5,000 purchased with project funds. These financing statement(s) must be approved in writing by the Grants and Agreements Officer prior to the recording, and they shall provide notice that the recipient's title to all equipment (not real property) purchased with federal funds under the financial assistance agreement is conditional pursuant to the terms of this section, and that the government retains an undivided reversionary interest in the equipment.

The UCC financing statement(s) must be filed before the Grants and Agreements Officer may reimburse the recipient for the federal share of the equipment unless otherwise provided for in the relevant financial assistance agreement. The recipient shall further make any amendments to the financing statements or additional recordings, including appropriate continuation statements, as necessary or as the Grants and Agreements Officer may direct.

A.9 Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment

As set forth in 2 CFR 200.216, recipients and subrecipients are prohibited from obligating or expending project funds (federal funds and recipient cost share) to procure or obtain; extend or renew a contract to procure or obtain; or enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

As described in Section 889 of Public Law 115-232, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities). See Public Law 115-232 Section 889, 2 CFR 200.216, and 2 CFR 200.471 for additional information.

A.10 Subject Invention

A.11.1 Title to Subject Inventions

Ownership of subject inventions (*i.e.*, inventions conceived or actually first reduced to practice under an award) is governed pursuant to the authorities listed below:

Domestic Small Businesses, Educational Institutions, and Nonprofits: Under the Bayh-Dole Act (35 U.S.C. § 200 et seq.), domestic small businesses, educational institutions, and nonprofits may elect to retain title to their subject inventions:

- All other parties: The Federal Non-Nuclear Energy Act of 1974, 42. U.S.C. § 5908, provides that the government obtains title to new inventions unless a waiver is granted (see below);
- Class Patent Waiver: DOE has issued a class waiver that applies to this FOA. Under this class waiver, domestic large businesses may elect title to their subject inventions similar to the right provided to the domestic small businesses, educational institutions, and nonprofits by law. To avail itself of the class waiver, a domestic large business must agree that any products embodying or produced through the use of a subject invention first created or reduced to practice under this program will be substantially manufactured in the United States.
- Advance and Identified Waivers: Applicants not covered by a Class Patent Waiver or the Bayh-Dole Act may request a patent waiver that will cover subject inventions that may be invented under the award, in advance of or within 30 days after the effective date of the award. Even if an advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver for identified inventions, i.e., individual subject inventions that are disclosed to DOE within the timeframes set forth in the award's intellectual property data terms and conditions. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.
- DEC: On June 07, 2021, DOE approved a Determination of Exceptional Circumstances (DEC) under the Bayh-Dole Act to further promote domestic manufacture of DOE science and energy technologies. In accordance with this DEC, all awards, including subawards and contracts, under this FOA shall include the U.S. Competitiveness Provision in accordance with the U.S. Manufacturing Commitments of this FOA. A copy of the DEC can be found at https://www.energy.gov/gc/determination-exceptional-circumstances-decs. Pursuant to 37 CFR 401.4, any nonprofit organization or small business firm as defined by 35 U.S.C. § 201 affected by any DEC has the right to appeal it by providing written notice to DOE within 30 working days from the time it receives a copy of the determination.

A11.2 Government Rights in Subject Inventions

Where prime recipients, subrecipients, and contractors retain title to subject inventions, the U.S. government retains certain rights.

Government Use License

The U.S. government retains a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States any subject invention throughout the world. This license extends to contractors doing work on behalf of the government.

March-In Rights

The U.S. government retains march-in rights with respect to all subject inventions. Through "march-in rights," the government may require a prime recipient, subrecipient, or contractor who has elected to retain title to a subject invention (or their assignees or exclusive licensees), to grant a license for use of the invention to a third party. In addition, the government may grant licenses for use of the subject invention when a prime recipient, subrecipient, contractor or their assignees and exclusive licensees refuse to do so.

DOE may exercise its march-in rights only if it determines that such action is necessary under any of the four following conditions:

- The owner or licensee has not taken or is not expected to take effective steps to achieve practical application of the invention within a reasonable time;
- The owner or licensee has not taken action to alleviate health or safety needs in a reasonably satisfied manner;
- The owner has not met public use requirements specified by federal statutes in a reasonably satisfied manner; or
- The United States manufacturing requirement has not been met.

Any determination that march-in rights are warranted must follow a fact-finding process in which the prime recipient, subrecipient and contractor has certain rights to present evidence and witnesses, confront witnesses and appear with counsel and appeal any adverse decision. To date, DOE has never exercised its march-in rights to any subject inventions.

A11.3 Utilization Reporting

To ensure that appropriate steps to commercialize subject inventions (*i.e.*, inventions made under DOE awards) are being taken, DOE require that each prime recipient, subrecipient and contractor holding title to a subject invention submit annual reports for ten (10) years from the date the subject invention was disclosed to DOE on the utilization of the subject invention and efforts made to stimulate such utilization. The reports must include information regarding the status of development, date of first commercial sale or use, gross royalties received by the prime recipient, the subrecipient or the contractor, and such other data and information as DOE may specify.

A.11 Rights in Technical Data

Data rights differ based on whether data is first produced under an award or instead was developed at private expense outside the award.

"Limited Rights Data": The United States government may require delivery of confidential or trade secret-type technical data developed solely at private expense prior to issuance of an award in order to monitor technical progress and evaluate the potential of proposed technologies to reach specific technical and cost metrics.

Government Rights in Technical Data Produced Under Awards: The United States government normally retains unlimited rights in technical data produced under government financial assistance awards, including the right to distribute to the public. However, pursuant to special statutory authority, certain categories of data generated under the DOE awards selected under this FOA may be protected from public disclosure for up to five years after the data is generated ("Protected Data"). The protected data

must be marked as set forth in the award's intellectual property terms and conditions and a listing of unlimited rights data (i.e., non-protected data) must be inserted into the data clause in the award. In addition, invention disclosures may be protected from public disclosure for a reasonable time in order to allow for filing a patent application.

A.12 Copyright

The prime recipient, subrecipients and contractors may assert copyright in copyrightable works, such as software, first produced under the award without DOE approval. When copyright is asserted, the government retains a paid-up nonexclusive, irrevocable worldwide license to reproduce, prepare derivative works, distribute copies to the public, and to perform publicly and display publicly the copyrighted work. This license extends to contractors and others doing work on behalf of the government.

A.13 Fraud, Waste, and Abuse

The DOE Office of Inspector General (OIG) maintains a Hotline for reporting allegations of fraud, waste, abuse, or mismanagement. To report such allegations, please visit https://www.energy.gov/ig/ig-hotline.

Recipients of DOE awards must be cognizant of the requirements of 2 CFR 200.113 Mandatory disclosures.

A.14 Participants and Collaborating Organizations

If selected for award negotiations, the selected applicant must submit a list of personnel who are proposed to work on the project, both at the recipient and subrecipient level and a list of proposed collaborating organizations prior to award. Recipients will have an ongoing responsibility to notify DOE of changes to the personnel and collaborating organizations and submit updated information during the life of the award.

A.15 U.S. Manufacturing Commitments

A primary objective of DOE's multi-billion-dollar research, development, and demonstration investments is to cultivate new research and development ecosystems, manufacturing capabilities, and supply chains for and by United States industry and labor.

Therefore, in exchange for receiving taxpayer dollars to support an applicant's project, the applicant and any subrecipients and contractors must agree to a U.S. Competitiveness provision requiring that any products embodying any subject invention[37] or produced through the use of any subject invention will be manufactured substantially in the United States unless it is demonstrated to the satisfaction of DOE that it is not commercially feasible. Award terms, including the specific U.S. Competitiveness Provision applicable to the various types of recipients and projects, are available here.

[37] A subject invention is any patentable invention conceived or first actually reduced to practice in performance of work under an award.

Please note that a subject invention is any invention conceived or first actually reduced to practice in performance of work under an award. An invention is any invention or discovery which is or may be patentable.

As noted in the U.S. Competitiveness Provision, if an entity cannot meet the requirements of the U.S. Competitiveness Provision, the entity may request a modification or waiver of the U.S. Competitiveness Provision. For example, the entity may propose modifying the language of the U.S. Competitiveness Provision to change the scope of the requirements or to provide more specifics on the application of the requirements for a particular technology. As another example, the entity may request that the U.S. Competitiveness Provision be waived in lieu of a net benefits statement or United States manufacturing plan.

The statement or plan would contain specific and enforceable commitments that would be beneficial to the United States economy and competitiveness.

Examples of such commitments could include manufacturing specific products in the United States, making a specific investment in a new or existing United States manufacturing facility, keeping certain activities based in the United States or supporting a certain number of jobs in the United States related to the technology. DOE may, in its sole discretion, determine that the proposed modification or waiver promotes commercialization and provides substantial United States economic benefits, and grant the request. If granted, DOE will modify the award terms and conditions for the requesting entity accordingly.

More information and guidance on the waiver and modification request process can be found in the DOE Financial Assistance Letter on this topic. Additional information on DOE's Commitment to Domestic Manufacturing for DOE-funded RD&D is available here.

The U.S. Competitiveness Provision is implemented by DOE pursuant to a DEC under the Bayh-Dole Act and DOE Patent Waivers. See Section A.11 Subject Inventions for more information on the DEC and DOE Patent Waivers.

A.16 Interim Conflicts of Interest Policy for Financial Assistance

The recipient is subject to the requirements of the DOE interim Conflict of Interest Policy for Financial Assistance (COI Policy), and the recipient must certify that it is compliant with all the requirements in the DOE interim COI Policy. The recipient must flow down the requirements of the DOE interim COI Policy to any subrecipient non-federal entities. The DOE interim COI Policy can be found here. See the Guidance Document for additional information.

A.17 Additional Resources

The OCED Funding website is a useful resource that summarizes the application, selection, and negotiation processes. The "Apply for Funding" section provides the steps in the application process, prepare to apply, how to submit an application and other resources. The "Award Negotiations" section provides on overview of the negotiations process, the required documents, the award terms and conditions, national policy requirements, public engagement and other resources.

APPENDIX B – APPLICATION REQUIREMENTS CHECKLIST

Component	File Format	Maximum Page Limit	File Name
SF-424 Application for Federal Assistance	PDF	N/A	ControlNumber_LeadOrganization_App424
Technical Volume	PDF	26	ControlNumber_LeadOrganization_TechVol
Techno-Economic Analysis Workbook	MS Excel	N/A	ControlNumber_LeadOrganization_TEA_WB
Community Benefits Plan: Job Quality and Equity	PDF	5	ControlNumber_LeadOrganization_Comm_Benefits
Community Partnership Documentation	PDF	3 each	ControlNumber_LeadOrganization_Partner_Doc
Resumes	PDF	2 each	ControlNumber_LeadOrganization_Resumes
Letters of Commitment	PDF	1 each	ControlNumber_LeadOrganization_LOCs
Budget Justification Workbook	MS Excel	N/A	ControlNumber_LeadOrganization_Budget_Justification
Subrecipient Budget Justification	MS Excel	N/A	ControlNumber_LeadOrganization_Subrecipient_Budget_Justification
Summary for Public Release	PDF	1	ControlNumber_LeadOrganization_PublicRelease
Summary Slide	MS PowerPoint	1	ControlNumber_LeadOrganization_Slide
Current and Pending Support Disclosures	PDF	N/A	ControlNumber_LeadOrganization_Current_Support
SF-LLL: Disclosure of Lobbying Activities	PDF	N/A	ControlNumber_LeadOrganization_LLL
Potentially Duplicative Funding Notice	PDF	N/A	ControlNumber_LeadOrganization_PDF
Transparency of Foreign connections	PDF	N/A	ControlNumber_LeadOrganization_ConnectionDisclosure

APPENDIX C – LIST OF ACRONYMS

ARL	Adoption Readiness Level
BIL	Bipartisan Infrastructure Law
CBP	Community Benefits Plan
CFR	Code of Federal Regulations
CO_2e	Carbon dioxide equivalents
DEC	Determination of Exceptional Circumstances
DER	Distributed Energy Resource
DES	Distributed Energy System
DEIA	Diversity, Equity, Inclusion, and Accessibility
DOE	Department of Energy
EEJ	Energy and Environmental Justice
EIA	Energy Information Administration
EPA	Environmental Protection Agency
FAPIIS	Federal awardee performance and integrity information system
FERC	Federal Energy Regulatory Commission
FFRDC	Federally Funded Research and Development Center
FOA	Funding Opportunity Announcement
FOIA	Freedom of Information Act
GAAP	Generally Accepted Accounting Principles
GHG	Greenhouse Gas
IIJA	Infrastructure Investment and Jobs Act
IRA	Inflation Reduction Act
LCA	Life Cycle Analysis
MPIN	Marketing Partner Identification Number
NDA	Non-Disclosure Acknowledgement
NEPA	National Environmental Policy Act
NNSA	National Nuclear Security Administration
OCED	Office of Clean Energy Demonstrations
OMB	Office of Management and Budget
OTT	Office of Technology Transitions
PII	Personal Identifiable Information
SAM	System for Award Management
SPOC	Single Point of Contact
TCF	Technology Commercialization Fund
TEA	Techno-economic Analysis
TRL	Technology Readiness Level
UCC	Uniform Commercial Code
UEI	Unique Entity Identifier
VPP	Virtual Power Plant
WBS	Work Breakdown Structure
WP	Work Proposal

APPENDIX D – WAIVER REQUESTS FOR FOREIGN ENTITY PARTICIPATION AND FOREIGN WORK

Waiver for Foreign Entity Participation

Many of the technology areas DOE funds fall in the category of critical and emerging technologies (CETs). CETs are a subset of advanced technologies that are potentially significant to United States national and economic security.[38] For projects selected under this FOA, all recipients and subrecipients must be organized, chartered, or incorporated (or otherwise formed) under the laws of a state or territory of the United States; have majority domestic ownership and control; and have a physical location for business operations in the United States. To request a waiver of this requirement, an applicant must submit an explicit waiver request in the application for the recipient and any subrecipients as applicable.

The waiver must demonstrate to the satisfaction of DOE that the foreign entity's participation would further the purposes of the FOA and is otherwise in the best interest of the DOE programmatic objectives.

Content for Waiver Request

A foreign entity waiver request must include the following:

a. The entity's name, point of contact, and proposed type of involvement in the project;
b. The entity's country of incorporation, the extent of ownership/level of control by foreign entities, whether the entity is state owned or controlled, a summary of the ownership breakdown of the foreign entity and the percentage of ownership/control by foreign entities, foreign shareholders, foreign state or foreign individual(s) (DOE may require a capitalization table);
c. Rationale for proposing that a foreign entity participate;
d. Description of how the foreign entity's participation is essential to the project,
e. Description of the likelihood of Intellectual Property (IP) being created from the work and the treatment of any such IP; and
f. Countries where the work will be performed. If any work is proposed to be conducted outside the United States, the applicant must also complete a separate Foreign Work Waiver request).

DOE may also require:

- Assessment of risk with respect to intellectual property (IP) and data protection protocols that includes the export control risk based on the data protection protocols, the technology being developed and the foreign entity and country. These submissions could be prepared by the project lead (if not the prime recipient), but the prime recipient must make a representation to DOE as to whether it believes the data protection protocols are adequate and make a representation of the risk assessment – high, medium, or low risk of data leakage to a foreign entity.

[38] "Critical and Emerging Technologies List Update," National Science and Technology Council, Office of Science and Technology Policy, February 2022, https://www.whitehouse.gov/wp-content/uploads/2022/02/02-2022-Critical-and-Emerging-Technologies-List-Update.pdf.

- Additional language may be added to any agreement or subagreement to protect IP, mitigate risk, or other related purposes.
- Additional information before considering a waiver request.

DOE's decision concerning a waiver request is not appealable.

Waiver for Performance of Work in the United States (Foreign Work Waiver)

As set forth in Appendix A.1.7 all work funded under this FOA must be performed in the United States. To seek a waiver of the Performance of Work in the United States requirement, the applicant must submit an explicit waiver request in the application. A separate waiver request must be submitted for each entity proposing performance of work outside of the United States.

Overall, a waiver request must demonstrate to the satisfaction of DOE that it would further the purposes of this FOA and is otherwise in the best interest of DOE programmatic objectives. A request for a foreign work waiver must include the following:

1. A description of the work proposed to be performed outside of the United States ("foreign work");
2. An explanation of how the foreign work is essential to the project;
3. The name of the entity that would perform the foreign work and information about the entity(ies) involved in the work proposed to be conducted outside of the United States (e.g., the entity seeking a waiver and the entity(ies) that will conduct the foreign work).
4. The rationale for performing the work outside of the United States and why the work cannot be done within the United States;
5. A description of the likelihood of Intellectual Property (IP) being created from the foreign work and the treatment of such IP;
6. The total estimated cost (DOE and Recipient cost share) of the proposed foreign work;
7. The country(ies) in which the foreign work is proposed to be performed; and
8. Timeline by which the waiver must be approved to support project schedules.

DOE may require additional information before considering a waiver request.

DOE's decision concerning a waiver request is not appealable.

APPENDIX E – EXAMPLE COVER PAGE FOR CONCEPT PAPERS AND FULL APPLICATIONS

Project Title:	**OCED eXCHANGE Control Number:**
Prime Applicant Name:	
Prime Applicant Entity Type and Explanation of Eligibility:	
Project Location(s) by city, state, and zip code +4:	*Location 1* *Location 2…*
Peak Load of Demonstration Grid System (MW):	
Aggregated DER capacities by type (MW):	*Type 1, Capacity 1* *Type 2, Capacity 2…*
Key Grid Services to be Demonstrated:	*Service 1* *Service 2…*
Team Member Organizations (e.g., Sub-Recipients, Key Technology Providers, and Project Partners):	
Senior/Key Personnel and Their Organizations:	
Do the proposed prime recipient and <u>all</u> subrecipients qualify as domestic entities*? ☐ Yes ☐ No If not, specify which entities do not qualify as domestic entities will require a foreign entity waiver here and include necessary foreign entity waivers with the application:	* To qualify as a domestic entity, the entity must be organized, chartered, or incorporated (or otherwise formed) under the laws of a particular state or territory of the United States; have majority domestic ownership and control; and have a physical place of business in the United States.

Points of Contact	Name	Email	Phone Number
Demonstration Project Manager			
Business Point of Contact			

Confidentiality Statement (if applicable):	
Total DOE Funding Request ($M USD):	
Total Non-Federal Cost Share ($M USD):	
Total Project Costs ($M USD):	
Total Period of Performance (yrs):	