See the formatting recommendations in Part III, Section A.

The Project Narrative must respond to each sub-criterion below.

**Technical Merit**

1. The proposed project provides a clear and concise description of the technological, scientific knowledge advancement, and/or innovation that will overcome barriers to achieving the State’s statutory energy goals.
2. Describes the competitive advantages of the proposed advanced virtual power plant(s) VPP(s) over incumbent solutions.

*In addition, provide a competition matrix to compare, such as*

**Table X: Competition Matrix***:*

| **Comparable Attribute** | **Applicant’s Advanced VPP(s)** | **Incumbent Solutions** |
| --- | --- | --- |
| Example: Cost of Service |       |       |
| Example: Flexibility |       |       |
| Example: Scalability |       |       |
| Example: Response Time |       |       |
| Example: Device Integration |       |       |
| Example: Cybersecurity and Compliance |       |       |
| Example: Market Participation |       |       |
|       |       |       |

1. Provides the proposed technical specifications and describe how the project will meet or exceed the technical specifications by the end of the project.
2. Describes the technology readiness level (TRL) the proposed technology has achieved and the expected TRL by the end of the project, if applicable.
3. Describes at what scale the technology has been successfully demonstrated (in California or elsewhere), including size or capacity, number of previous installations, location and duration, results, etc.)
4. Describes how the proposed demonstration will lead to increased adoption of the technology in California to include:
	* Strategies that can be employed to replicate and scale the proposed project across other essential substation/distribution circuit(s).

**Technical Approach**

1. The application describes the technique, approach, and methods to be used in performing the work described in the Scope of Work, including:
	* **Utility Integration Plan:** Describes the plan to integrate with relevant IOU systems, including DERMS platforms, to enable real-time coordination and delivery of distribution-level grid services. The plan should address:
		+ How the applicant will access the necessary utility data and operational constraints
		+ How the VPP will exchange control signals with the IOU
		+ Any existing or planned agreements with the IOU to support integration
		+ How the applicant will validate VPP performance in coordination with the IOU
	* **Technical Features:** Describes the proposed VPP(s), including the controls and communications and the ability for distribution system operators (DSO) to optimize inverter-based distributed energy resources (IBDERs) to provide distribution-level grid services.
	* **Participation Model:** Describes the participation model (e.g., utility-led, aggregator-drive model, hybrid) for managing the aggregations of IBDERs and the plan for coordinating with the investor-owned utility (IOUs)/DSOs.
	* **Targeted Substation or Circuit(s):** Provides a specific substation or distribution circuit(s) that will be targeted for the demonstration. Why was the substation/distribution circuit(s) selected? What potential grid services needed by the substation/distribution circuit(s) can the VPP(s) provide?
	* **Enrollment:** Provides information on the process of developing its strategy to acquire customers.
	* **Size of Proposed System:** Describes the target number of IBDERs, the amount of generation capacity (kW), storage capacity (kWh), and the number and location of buildings involved.
2. The Scope of Work identifies goals, objectives, and deliverables, details the work to be performed, and aligns with the information presented in Project Narrative.
3. The application identifies the reliability that the project and site recommendations as described will be carried out if funds are awarded.
4. Identifies and discusses factors critical for success, in addition to risks, barriers, and limitations (e.g., loss of demonstration site, key subrecipient). Provides a plan to address them.
5. Discusses the degree to which the proposed work is technically feasible and achievable within the proposed project schedule and the key activities schedule in Section I.E.
6. Describes the technology transfer plan to assess and advance the commercial viability of the technology.
7. Provides a clear and plausible measurement and verification plan that describes how energy savings and other benefits specified in the application will be determined and measured.
8. Provides information documenting progress towards achieving compliance with the California Environmental Quality Act (CEQA) by addressing the areas in Section I.I, and Section III.C.7.

**Impacts and Benefits to California IOU Ratepayers**

1. Explains how the proposed project will benefit California Investor-Owned Utility (IOU) ratepayers and provides clear, plausible, and justifiable (quantitative preferred) potential benefits. Estimates the non-energy benefits such as emissions reductions, localized health impacts, infrastructure resiliency, cost reduction, and increased safety. Estimates the energy benefits including:
	* Distribution-level power quality services such as frequency and voltage support.
	* Congestion management such as deferring distribution upgrades, increasing solar hosting capacity, and increasing electric vehicle (EV) charging capacity.
	* Wholesale market participation such as peak load reduction.
2. States the timeframe, assumptions with sources, and calculations for the estimated benefits, and explains their reasonableness. Include baseline or “business as usual” over timeframe.
3. Explains the path-to-market strategy including near-term (i.e., initial target markets), mid-term, and long-term markets for the technology, size and penetration or deployment rates, and underlying assumptions.
4. Identifies the expected financial performance (e.g., payback period, ROI) of the demonstration at scale.
	* + Discuss whether and how the proposed VPP(s) will remain operational and continue delivering grid support services beyond the agreement term if the research provided confirms its cost-effectiveness.
5. Identifies the specific programs which the technology intends to leverage *(e.g., IOU rebates/incentives, demand response, time-of-use optimization, resilience and backup power, electrification initiatives) and extent to which technology meets program requirements.*

**Team Qualifications, Capabilities and Resources**

1. Identifies credentials of applicant and any subrecipient core personnel, including the project manager and principal investigator *(include this information in Project Team Form Attachment).*
2. Demonstrates that the project team including Community-Based Organization(s) has appropriate qualifications, experience, financial stability and capability to complete the project.
3. Explains the team structure and how various tasks will be managed and coordinated.

*Include an organization chart similar to the one below*

 **Figure X: Organization Chart**

1. Describes the facilities, infrastructure, and resources available that directly support the project.
2. Describes the team’s history of successfully completing projects in the past 10 years including subsequent deployments and commercialization.

**Budget and Cost Effectiveness**

1. Budget forms are complete for the applicant and all subrecipients, as instructed in Budget Attachment.

*Provide a budget by tasks, such as:*

**Table X: Task Budget**

| **Task (by major task)** | **Energy Commission Funds** | **Match Share** | **Total** |
| --- | --- | --- | --- |
| Task 1: General Project Tasks |       |       |       |
| Task 2: |       |       |       |
| Task [TBD-1]: Evaluation of Project Benefits |       |       |       |
| Task [TBD-2]: Technology/ Knowledge Transfer Activities \* |       |       |       |

\* **Requires 5% of total CEC funds**

1. Justifies the reasonableness of the requested funds relative to the project goals, objectives, and tasks.
2. Justifies the reasonableness of direct costs (e.g., labor, fringe benefits, equipment, materials & misc. travel, and subrecipients).
3. Justifies the reasonableness of indirect costs (e.g., overhead, facility charges (e.g., rent, utilities), burdens, subrecipient profit, and other like costs).

**Funds Spent in California**

This project proposes to spend $\_\_\_\_\_\_\_\_\_ of Energy Commission funds in California.

**Benefits to Disadvantaged/Low-Income Communities and Localized Health Impacts**

*Applications should include evaluation and performance measures that the CEC can use to ensure short- and long-term delivery of identified health and environmental benefits and prevention of negative environmental and health outcomes, and respond to each sub-criterion below.*

Benefits to Disadvantaged/Low-Income Communities

1. Identifies the energy and economic needs of the community based on project location, what steps the applicant has taken to identify those needs, and how the community input was solicited and considered in the design of the project.
2. Identifies how the project will increase access to clean energy or sustainability technologies for the local community.
3. Identifies how the proposed project will improve opportunities for economic impact including customer bill savings, job creation, collaborating and contracting with micro-,local, and small-businesses, economic development, and expanding community investment.
4. Identifies how the impacted community will be engaged in project implementation*.*
* *Applicants should detail a “community engagement strategy” for implementation of their proposed project. The Community Engagement Strategy should detail planned collaboration and outreach with community-based organizations and community residents, and describes how community input is reflected in the project.*
1. Identifies how the projects’ primary beneficiaries are residents of the identified disadvantaged/low-income community (ies) and describes how they will directly benefit from the project outcomes.

Identifies and describes how the applicant will disseminate educational materials and career information to best support community understanding and engagement as applicable (e.g., culturally appropriate and translated materials, translation services, and considerate scheduling of stakeholder events as needed)

Localized Health Impacts

1. Summarizes the potential localized health benefits and impacts of the proposed project and provides reasonable analysis and assumptions.
2. Identifies how the proposed project will reduce or not otherwise impact the community’s exposure to pollutants and the adverse environmental conditions caused by pollution. If projects have no impacts in this criterion, provide justification for why impacts are neutral.
3. Identifies health-related Energy Equity indicators and/or health-related factors in CalEnviroscreen that most impact the community and describes how the project will reduce or not otherwise impact the indicators or factors. If projects have no impacts in this criterion, provide justification for why impacts are neutral.

Technology Replicability

1. Identifies how the project, if successful, will lead to increased deployment of the technology or strategy in other disadvantaged or low-income communities.

Project Support Letters

1. Includes letters of support from technology partners, community-based organizations, environmental justice organizations, or other partners that demonstrate equity, feasibility, and commercial viability in low-income and disadvantaged communities.

Disadvantaged Communities

The application identifies how the target market(s) will benefit disadvantaged and low-income communities.

Identifies economic impact on low-income and disadvantaged communities including customer bill savings, job creation, partnering and contracting with micro- and small-businesses, and economic development.

Describes how the project will increase access to clean energy or sustainability technologies within disadvantaged or low-income communities and how the development will benefit the communities.

Applicants have letters of support from technology partners, community-based organizations, environmental justice organizations, or other partners that demonstrate equity, feasibility, and commercial viability in low-income and disadvantaged communities.