**Phase 3 Integrated Resource Planning Reliability RFO – Energy Storage or Hybrid Resource**

**Project Description Form**

*Instructions:*

1. *Submit one Project Description Form for each project being submitted for SDG&E’s consideration.*
2. *If offering multiple pricing options for one project, please do so via multiple Pricing / Offer Forms (excel file).*
3. *Use green font for information the Respondent deems to be confidential.*
4. *Limit and focus the discussions so that this form does not exceed 50 pages (10 size font).*
5. ***Company Information***

|  |  |
| --- | --- |
| Company Name Submitting Offer(s) |  |
| Company Legal Name as party to  potential contract(s) (if different) |  |
| Project Name |  |
| Company Street Address |  |
| Company City |  |
| Company State |  |
| Company Zip Code |  |
| How did the company hear about this RFO?   * SDG&E Website * Email from SDG&E * Colleague * Other (please elaborate) |  |

1. ***Company Representative***

|  |  |  |
| --- | --- | --- |
|  | Primary Contact | Secondary Contact |
| Name |  |  |
| Title |  |  |
| Office Phone |  |  |
| Cell Phone |  |  |
| Email Address |  |  |

1. ***Project Summary***

**Resource Origin** *(Check one or more, if applicable)*

|  |  |  |
| --- | --- | --- |
|  | New Facility | |
|  | Re-powered Facility | |
|  | Existing Facility with expiring contract with SDG&E or a third-party | |
|  | Upgrading an existing Facility and offering upgraded output to SDG&E  Utility Owned Facility (ESSBOT or ESSEPC only) | |
|  | Hybrid | |
|  | Long-duration storage | |
|  | Other. Please describe: | |
|  |  | |
| Technology Type | | |  | |
| Expected Project Completion Date | | |  | |
| Nameplate MW AC *(at 100% project completion)* | | |  | |
| Net Contract MW AC *(at 100% project completion)* | | |  | |
| Capacity Factor (if applicable) | | |  | |
| Expected annual capacity degradation *(%)* | | |  | |
| Expected annual efficiency degradation (if applicable) | | |  | |

Provide a description of how the facility meets the requirement of being incremental to the baseline resource assumptions identified for the analysis that led to the adoption of the procurement authorization in D.21-06-035 and D.23-02-040.

1. ***Proposed Facility Location***

*Insert site location map(s) in Section O of this Response Form.*

|  |  |
| --- | --- |
| Project Name |  |
| Site Name *(if different from above)* |  |
| Project Street Address |  |
| Project City, State |  |
| Project Longitude: |  |
| Project Latitude: |  |
| Project parcel numbers: |  |
| Describe merits of proposed site/location. | |
| Discuss status of site control, including required easements. Note that the site control documentation should be in the name of the entity that will sign the PPA. If not, please provide explanation. | |

1. ***Proposed Product***

|  |
| --- |
| Describe the attributes which are and are not bundled within the Respondent’s offer, including such things as: Capacity, Energy, Renewable Energy Credits (if applicable. For example, if the storage system is coupled in some manner with a renewable facility), resource adequacy, ancillary services, etc. If the offer is Long-duration storage, please describe the hours the resource can deliver at maximum capacity. |

1. ***Interconnection Application, Delivery Point***

|  |  |
| --- | --- |
| Host Utility/Muni |  |
| Interconnection Point  *(substation name, line or physical description)* |  |
| City, State of Interconnection Point |  |
| Proposed Delivery Point |  |
| Interconnection COD |  |
| Provide an explanation if the Interconnection COD (above) is different than the Expected Project Completion Date specified under the Project Summary Section of this form. |  |

|  |  |
| --- | --- |
| Interconnection study / agreement status (ie: CAISO Phase 2 Study  *or equivalent, etc…)* |  |
| On what date was the application filed? |  |
| On what date was the study completed? |  |
| Interconnection Agreement completed? If yes, date of agreement? |  |
| When was the interconnection application submitted?  (*please indicate CAISO, Rule 21, or WDAT*) – see above |  |
| Who is the counterparty to the agreement? |  |
| Entity that requested study and/or signed Interconnection Agreement should be the same as entity that will sign the PPA. If not, please provide explanation. |  |

|  |  |
| --- | --- |
| Actual Delivery Point per Interconnection Agreement  *(Identify the specific substation, pnode, etc…)* |  |
| First Point of Interconnection |  |

|  |  |
| --- | --- |
| Is an interconnection study for this project included with the offer? |  |
| If yes: |  |
| Is the study CAISO approved? |  |
| If the study is more than 3 years old, explain why the study and costs are still valid. |  |

1. ***Electric Interconnection Plan and Costs***

*Transmission (or distribution) upgrade plan and costs are vital for SDG&E to assess overall project viability and cost. The absence of this information or providing inaccurate descriptions or costs may render a Respondent’s offer(s) non-conforming, delay the evaluation for the response(s) and/or impact the Respondent’s standing on the short-list.*

|  |
| --- |
| Discuss interconnection plan and status. |
| Please identify any termination clauses or other potential issues with existing Interconnection Agreements (*for existing only*). |
| Provide an itemized cost breakdown of expected interconnection costs attributable to both Respondent and host utility. *(i.e. voltage support costs, reconductoring costs, etc..)*  *(Note that gen-tie costs (including but not limited to: cable, transformers, protection gear and other equipment on the generator side of the meter) attributable to Respondent shall be included in the bid price indicated on the Pricing / offer Forms.)* |

1. ***Proposed Technology***

|  |  |
| --- | --- |
| ***Solid State Batteries*** | |
|  | Lithium Ion (LI-ION) Batteries |
|  | Nickel-Cadmium (NI-CD) Batteries |
|  | Sodium Sulfur (NAS) Batteries |
|  | Electrochemical Capacitors |
|  | Other (provide detailed description): |
| ***Flow Batteries*** | |
|  | Redox Flow Batteries |
|  | Iron-Chromium (ICB) Flow Batteries |
|  | Vanadium Redox (VRB) Flow Batteries |
|  | Zinc-Bromine (ZNBR) Flow Batteries |
|  | Other (provide detailed description): |
| ***Flywheels*** | |
|  | Flywheels |
|  | Other (provide detailed description): |
| ***Compressed Air Energy Storage*** | |
|  | Compressed Air Energy Storage (CAES) |
|  | Advanced Adiabatic Compressed Air Energy Storage (AA-CAES) |
|  | Isothermal CAES |
|  | Other (provide detailed description): |
| ***Thermal*** | |
|  | Pumped Heat Electrical Storage (PHES) |
|  | Hydrogen Energy Storage |
|  | Liquid Air Energy Storage (LAES) |
|  | Other (provide detailed description): |
| ***Pumped Hydro-Power*** | |
|  | Pumped Hydroelectric Storage |
|  | Sub-Surface Pumped Hydroelectric Storage |
|  | Surface Reservoir Pumped Hydroelectric Storage |
|  | Variable Speed Pumped Hydroelectric Storage |
|  | Other (provide detailed description): |
| Is the proposed technology available every day from 5 p.m. to 10 p.m. (the beginning of hour ending 1800 through the end of hour ending 2200), Pacific Time, at a minimum; and able to deliver at least 5 megawatt-hours of energy during each of these daily periods for every megawatt of incremental capacity claimed? | |
| If the proposed technology is long-duration storage, can it deliver at maximum capacity for at least eight hours from a single resource? | |
| Describe the proposed technology. Include the size (or space) requirement (ie: in acres, or square yards or feet), for a 1 MW, 5 MWh block of the proposed technology with the expectation that this is scalable upward. | |
| Describe the proposed technology and equipment manufacturer by name and model ( include inverter characteristics if applicable): | |
| Discuss the viability of proposed technology and credibility of the manufacturer: | |
| Discuss operational reliability of proposed technology and manufacturer. | |
| How many projects and MWs with proposed technology have been installed worldwide? Discuss year(s) of installation, project locations, project size at each location and operational success. | |
| Discuss and provide links to or copies of published reports demonstrating that the proposed technology is commercially proven. | |
| Described the warranty of major components, including such things as batteries, inverters or other major equipment components. | |
| For ESSEPC Respondents: Describe in detail the components of the energy storage system and the services that the respondent will provide (ie: respondent will provide batteries, inverters, installation services, O&M services for the useful life of the system, etc…).  Note: For the ESSEPC approach, SDG&E intends to provide: siting, permitting and interconnection. | |
| Describe the technology / Energy Storage System’s ability to receive or accept an AGC signal from the CAISO or issues regarding receiving or accepting an AGC signal from the CAISO. | |

1. ***Safety***

|  |
| --- |
| 1. Please confirm by checking the box either by ‘yes’ or ‘no’ whether you intend to operate and maintain the program or project that is the subject of your offer in accordance with accepted electrical practices, applicable law and industry standards including those that are related to safety (note: the terms “accepted electrical practices”, “applicable law” and “industry standards” are defined in the pro forma agreement.   Yes  No |

1. ***Fuel Source Plan (Complete as applicable)***

|  |
| --- |
| Has a fuel availability (wind assessments, solar radiation index, etc.) study been performed for the proposed site? If so, specify the data source, the length/duration of the data made available by the data source, and explain the results and how the results support the projected annual MWHs. |
| If applicable, has a long term fuel contract been executed with a supplier? |
| Discuss project’s overall fuel plan and status. |

1. ***Ownership and Operations***

|  |
| --- |
| Explain how the Respondent has operational control of the project. (*Either through contractual operational control of the project, or if the Respondent is the project operator.)* |

1. ***Financing Plan***

|  |
| --- |
| Discuss the project’s financing plan and status, including on-going debt/equity ratio to be carried by the project during construction (if a new facility) and during operation, sources of debt and equity, equity percentage by sponsor, financing organizations (including rates and terms), level of commitment by investors and lenders. (*If anticipating the need for subsidies, grants, Production Tax Credits, Investment Tax Credits or any other third party monetary awards, detail finances associated with monetary awards and discuss how the lack of funding shall impact the offer and deadlines for obtaining such awards*.) |

1. ***Permitting***

*Populate the following table with a list of required permits and anticipated completion. Include such things as CEC RPS Certification, conditional use permit, environmental studies/permits, water rights, etc…*

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Permit Type/Name** | **Issuing Agency** | **Completion Date** |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

|  |  |
| --- | --- |
| If applicable, has project received  RPS Certification from the CEC? |  |
| If yes: |  |
| Certification No. |  |
| If no: |  |
| Date Application filed or to be filed |  |
| Describe anticipated issues surrounding RPS certification. |  |

|  |
| --- |
| Discuss plan and status to obtain the permits listed above. Discuss required water rights and status to obtain such rights. Describe scope of assistance from any third party (if applicable). |

1. ***Project Schedule***

|  |  |  |
| --- | --- | --- |
| *Please provide a high level project schedule below. Some potentially applicable items have been included, but to the degree they are not applicable, please disregard and include other major project milestones.* | | |
| *No.* | *Milestones* | *Date* |
| 1. | Obtain control of all lands and rights-of-way comprising the Site. |  |
| 2. | File a CEC Pre-Certification and Verification application. |  |
| 3. | Receive a completed [Phase I Interconnection study report] [Interconnection System Impact study report]. |  |
| 4. | Receive CEC Certification and Verification. |  |
| 5. | Files permitting application with appropriate agency(ies). |  |
| 6. | Receive a completed [Phase II interconnection facility study][interconnection system impact study]. |  |
| 7. | Execute Interconnection Agreement and/or Transmission Agreement. |  |
| 8. | Receive permitting approval(s). |  |
| 9 | Execute long term fuel contract. Complete a comprehensive resource assessment. |  |
| 10. | Execute an equipment (turbine/panel/battery, etc.) supply contract. |  |
| 11. | Execute an Engineering, Procurement and Construction (“EPC”) contract. |  |
| 12. | Deliver full NTP under EPC contract and begins construction of the Project. |  |
| 13. | Execute Meter Service Agreement and Participating Generator Agreement. |  |
| 14. | Achieve initial operation. |  |
| 15. | Receive all Governmental Approvals necessary to achieve Commercial Operation (*add details).* |  |
| 16. | Receive CEC Certification and Verification. |  |

|  |
| --- |
| Discuss any challenges anticipated with the overall project and construction schedule. |

1. ***Operational Characteristics***

Insert Facility Drawings in Section Q of this Response Form.

|  |
| --- |
| Discuss operational characteristics of the facility / project. Include such things as required maintenance, delivery profile, curtailability, dispatchability and other operating limitations (such as ramp rates, required time between charging and discharging or visa versa, etc…) .  *(If offering the ability to curtail deliveries, discuss terms and operational conditions including, annual hours resource can be curtailed, the amount of curtailable capacity and the cost to SDG&E, if applicable.)* |

1. ***Corporate Profile and Experience (For ESSBOT or ESSEPC, please complete from the BOT/EPC contract counterparty perspective)***

*Please be brief and refrain from including extensive marketing materials, resumes, etc, especially information outside the scope of the project.*

|  |
| --- |
| Corporate background and organizational structure for the project. |
| Is your company licensed to do business in California: If yes, what are your applicable business license numbers? |
| Describe project team’s background and experience developing projects of a similar nature and technology. How many MWs total are currently under construction? |
| List and describe other projects of a similar nature and technology developed by Respondent currently in operation. What are the total MWs of projects installed? Please provide contact / reference information for projects in operation. |

1. ***Proposed Project Site Location Maps***

*Insert site location map(s) clearly showing the location, size, and orientation of the site; the location of the expected interconnections for transmission, fuel, and water; and the location of residential communities, schools, hospitals, airports, churches, cemeteries, or other expected sensitive receptors within five miles of the site.*

1. ***Facility Drawings***

*Insert facility drawings and diagrams including general equipment arrangement of the site, electric interconnect one line diagram showing the scope of supply, delivery point and metering for the electric interconnection including any transmission line and switchyard. If applicable, include fuel interconnection diagram indicating fuel delivery point. For ESSEPC’s, include detailed descriptions of the proposed energy storage system’s siting requirements. Include total square footage required for installation, and, if the project is able to be partially sited at multiple locations, the smallest increment that can be sited at each location and each increment’s square footage requirements.*

1. ***Diverse Business Enterprise Information***
2. *Please indicate whether the Respondent is a DBE (yes/no).  Please also provide any relevant documentation proving such status.*
3. *Please indicate whether the Respondent has or will utilize DBE services during the development and/or construction of the project.*
4. *To assist in SDG&E’s data collection efforts in compliance with PU Code Section 910(a)(8) , for the current calendar year please provide the number of new employees that have been hired, and the number of women, minority, and/or disabled veterans that have been trained or hired by the persons or corporations owning or operating this facility (please distinguish between owner and operator in the response).*
5. ***Additional Information***

*Insert additional relevant information necessary for SDG&E to evaluate the merits of the proposal.*

1. ***Confidential Information***

*Identify parts, sections and elements of the offer (including information in this and all other forms) which Respondent considers to be Confidential and Proprietary in accordance with RFO Section Confidentiality.*