Southern California Public Power Authority

Questions and Answers related to the Request for Proposals for Compressed Air Energy Storage

12/11/17

1. If Respondent proposes a location other than those identified by the RFP, would SCPPA consider locations not near the eastern terminus of the HVDC line?

   Response: We are open to other locations however these locations will need to be approved by SCPPA members. The locations will be contingent upon system impact study and additional transmission costs should not be incurred upon SCPPA members.

2. Would a CAES plant Point of Interconnection (POI) on any of the high voltage AC lines emanating at the IPP facility be acceptable under this RFP?

   Response: A bidder can submit a proposal for a CAES system but will be dependent on system impact study.

3. Would a CAES plant POI at the station at the remote terminal of these lines be acceptable, provided it is at the same voltage as the transmission line to the IPP?

   Response: A bidder can submit a proposal for a CAES system but the location will be dependent on system impact study.

4. For such interconnections as described above, if acceptable, please confirm that the POD for energy to/from the CAES facility would be at the CAES plant POI and that SCPPA would be responsible for transmission and scheduling of such energy to/from the CAES facility.

   Response: The POD should be the IPP Switchyard.

5. Will SCPPA accept a bid from any of the following areas/substations:
   - LADWP's Barren Ridge Substation or the proposed LADWP substation to be built by LADWP near Rosamond CA?
   - CAISO SP15 - The Tehachapi Area (for example Whirlwind, Windhub, or Antelope Subs)?
   - CAISO SP15 - The High Desert Area (for example Lugo or Victor Subs)?

Response: A bidder can propose a CAES system in these areas if they desire. This is contingent on the system impact study and additional transmission costs should not be incurred upon SCPPA members.

6. Please prioritize any of the above POIs that would be acceptable for bidding from highest to lowest level of interest.

   Response: First Priority – LADWP's Barren Ridge/Rosamond Substations
   Second Priority – High Desert Area
   Third Priority – Tehachapi Area

7. The inclusion of a request for information on the impacts of the Investment Tax Credit (ITC) on bid prices implies that SCPPA is looking for developers to pair CAES with their own, new renewable project. Was this your intent? Adding this component into our proposal will require substantial new analysis within the short response window.

   Response: Our intent is to make the option of developing a renewables project to be paired with ITC available to bidders. It is not required.

8. The RFP states that SCPPA is interested in projects with 100 MW generation capacities or greater. However, CAES technology is built with a drive train of a specific size. The minimum size of a CAES facility (with one drive train) would be 160 MW generation capacities. Two trains would be 320 MW generation capacities. There are no incremental options between those two sizes and a bid for a 320 MW project would look quite different from a bid of 160 MW. Could you provide more specific direction about the size project SCPPA is interested in?

   Response: Our only size requirement is a system which is greater than 100 MW. If a bidder wishes to propose multiple options in size, please state those options in the proposal.

9. Is SCPPA targeting a storage project with a specific duration (hours at rated output) or capacity (storage equivalent MWh)? If so, what is the target?

   Response: We are targeting a system which has duration of at least 4 hours. Systems with greater than 4 hour duration are more than welcome.

10. What is the desired in-service date for the project?

    Response: Before 2025.

11. Is this RFP a Budgetary or Firm Proposal?

    Response: Firm Proposal.

12. With the holiday (s), is it possible to get an extension?

    Response: 4 week extension granted. RFP has been updated to reflect this change.

13. What is the cavern's characteristic (volume, min and max pressure during the charge and discharge, etc.).

    Response: We're relying on the bidders to tell us this in their proposal.

14. The "Areas of Interest" section references integration of renewables as part of the CAES proposal and directs bidders to provide details.

    As this is a new potential component of the project, what level of detail does SCPPA require on the renewable generation component of the project?

    Response: Provide the same level of detail which is being asked for in the CAES portion of the RFP.

15. Which elements from Table 1 apply and which should be reported independently vs. in combination with the CAES storage facility?

    Response: Contractor to assume which elements are applicable to renewables project. All applicable elements should be reported independently.

16. Regarding the request on "Compliance with CEC Guidebook," we assume SCPPA is referring to the RPS Eligibility Guidebook Ninth Edition. Please confirm.

    Response: 9th edition confirmed.

17. SCPPA notes that respondents will be required to conform to prevailing wage rates for workers in California. Although IPP is outside California, Range assumes that as part of calculating their labor costs, we should assume we will need to pay prevailing wages (or local DWP-IBEW wages) for work at this location. Could SCPPA confirm this is the right assumption? This will have a significant effect on how bidders calculate labor costs.

    Response: Contractor's assumption is correct to use prevailing wages for location of work.

18. Please confirm that information submitted by respondents to this RFP marked as proprietary or confidential will be kept confidential and will not be disclosed to outside parties or potential competitors.

    Response: Proposals will be kept confidential to evaluating parties.

19. Regarding items listed in Table 1, Availability Category - Please clarify the item listed as "Performance Penalty."

    Response: This is a financial penalty for an unsuccessful operation of the CAES system. For example, if the CAES unit fails to start up and generate 100 MW when off-taker desires, a penalty would be imposed on the owner of the CAES unit. This would apply to a PPA.

20. Regarding items listed in Table 1, Energy Availability Category - Please clarify the item listed as "Resource Availability Profile."

    Response: A profile showing the availability, expressed in percentages, of the CAES system over a period of one year. Contractor can assume intervals of profile (hours, days, etc.).

21. Regarding items listed in Table 1, Operational Procedures Category - Please clarify the items listed as "Different Operational Procedure with other SCPPA Members" and "Different Operation Procedure without other SCPPA Members."

    Response: Different Operational Procedure with other SCPPA Members - Operational procedures for CAES with multiple off-takers.

    Different Operational Procedure with other SCPPA Members – Operational procedures for CAES with only one off-taker.

22. Regarding items listed in Table 1, Miscellaneous Category - Please clarify the item listed as "Separate from IPP Operations except for Interconnection."

    Response: This is an area for bidders to describe the physical location of the proposed CAES system if separate from IPP.

23. Referencing "Table 2 – Project Costs", is there a difference between "PPA ($/MWh)" under the Contractor Ownership scenario located on IPA property and "Life Cycle ($/MWh per year)" under the Contractor Ownership scenario on property adjacent to IPA?

    Response: Those areas should say "Life Cycle Costs ($/MWh per year)". This applies to both On IPA Property and Adjacent to IPA Property, or other location.

24. Referencing "Table 2 – Project Costs", does SCCPA prefer PPA and Life Cycle costs assume escalation or held constant?

    Response: Contractor to hold PPA and Life Cycle Costs constant.

25. Does SCPPA anticipate issuing any further information or addenda prior to the RFP Submittal Deadline, such as preliminary terms and conditions for a PPA or a data room containing details of the site, caverns, or POI?

    Response: There are currently no plans to release further information or addenda prior to the RFP Submittal Deadline at this time. However, this is subject to change.

26. Is there a preferred option among the 3 indicated in the Introduction of the RfP: i) ownership by SCPPA; ii) PPA with ownership option; iii) PPA without ownership option?

    Response: There is no preferred option at this time.

27. Are you favorable to a consortium of partners? In this case do you have a preferred structure?

    Response: A consortium of partners is allowed. A preferred structure has not been established for this project at this time.

28. In case of project location on IPA property, is there a fee to be paid to IPA? How much is this fee?

    Response: Costs or fees have yet to be determined for a project located on IPA property. This will be subject to discussion with stakeholders.

29. Regarding Table 1 - Project Details, the table requires to state Availability - Replacement Cost: what does this include?

    Response: Availability – Replacement Cost refers to the cost of replacing the power generation from CAES when not available.

30. Regarding Table 1 - Project Details, the table requires to state Energy Availability - Max and Min Capacity Factor: what does this refer to?

    Response: The Max and Min Capacity Factor refer to the minimum and maximum output of the CAES system compared to the potential output if there is variation between both values.

31. Regarding Table 2 - are Contractor Total Lifecycle Costs intended to be in units of $/MWh or $/MWh/year?

    Response: $/MWh/year

32. Regarding Table 2 - what is the Total Lifecycle Cost intended to reflect? Does this include project facility cost and NPV of fixed and variable operating costs? Contractor profit?

Response: The Total Lifecycle Cost is intended to reflect the project facility cost, including NPV of fixed and variable costs and contractor profit.

33. Regarding Table 2 - Is Capacity Cost intended to reflect the project capital cost, or a monthly/annual capacity payment amount?

    Response: The Capacity Cost is intended to reflect the cost of spinning reserves and the generation of said spinning reserves.

34. Regarding Table 2 – Project Costs, the table requires to state the Generation cost ($/MWh): Is this intended to represent the variable cost incurred during generation, including fuel consumption (versus an energy price for the electricity produced)? Should respondents assume that all fixed costs are included in the Total Life Cycle Cost section in Table 2?

    Response: The Generation Cost is intended to reflect all variables which are in the cost of generating from the proposed CAES system.

35. Regarding Table 2 – Project Costs, the table requires to state the Compression cost ($/MWh): Similarly, if compression cost is intended to capture variable costs incurred while in compression mode, what electricity rates do we have to consider to charge the system?

    Response: The Compression Cost is intended to reflect the market price of electricity for operation in compression mode

36. Under Energy Availability in Table 1, SCPPA requests Minimum and Maximum Capacity Factors. Please provide specific definition or formula for calculation of both.

    Response: The Minimum and Maximum Capacity Factors refer to the maximum and minimum output of the CAES system compared to the potential output if there is variation between both values.

37. Under Table 2, SCPPA asks for Total Life Cycle Costs and Life Cycle Costs. Both appear to have subcategories. Please provide specific definition or formula for calculation of both Total Life Cycle Costs and Life Cycle Costs to be included.

    Response: The Total Lifecycle Cost is intended to reflect the project facility cost, including NPV of fixed and variable costs and contractor profit. Both areas should state Total Lifecycle Cost.

38. Under Availability in Table 1, please provide definition of Replacement Costs.

    Response: Replacement Cost refers to the cost of replacing the power generation from CAES when not available.

39. Under Dispatchability in Table 1, please define the information that you are looking for with respect to the Generator Clutch Options and Costs.

    Response: Looking to see if options for dispatch regarding generator clutch can be proposed and if so, provide a cost breakdown.

40. Under Usage Application in Table 1, please define the characteristics of the Ancillary Services and Cost Breakdown (e.g. duration of black start) that you are looking for.

    Response: Off-takers will evaluate any ancillary services which can be provided by a proposed CAES system and the associated cost breakdown.

41. Is there a budget or estimate value associated with this project?

    Response: No budget or estimated value at this time.

42. How does SCPPA see CAES qualifying for Bucket 1 RECs, even if it is charged by renewables? The renewables might be Bucket 1, but unless the storage project is "behind the meter" of the renewable project, the generation from CAES would not appear to qualify. Further, it seems that charging CAES with renewables might change the original designation of PCC1 for the renewables to PCC2. Do you have some insight we are unaware of that could explain what you are looking for in this note?

    Response: The generation from CAES will not qualify for RECs unless paired with an eligible renewables facility. The structure would need to be similar to what declare in CEC 9 guide book - Chapter 3 Section F.

43. What approvals would need to be obtained from IPA and the IPP project owners to site the CAES facility on IPA property? Can SCPPA provide a schedule that shows the major activities to obtain such approvals?

    Response: Approvals by IPA and IPP project owners are yet to be determined, and will be defined based on received proposals.

44. What assets on, or under, the IPA property will be made available for a CAES project that is built on IPA property? These assets might include: a) storage medium, b) water, c) land, d) use of existing facilities or infrastructure.

    Response: Proposers shall provide description of assets required for the project and assets will be assessed during evaluation.

45. Per the items in the question above, what assets would be available for a project built on non-IPA property?

Response: None of the assets mentioned in the question above will be available for a project built on non-IPA property.

46. In either case, would these assets be available for purchase or for lease, or some combination of both approaches?

    Response: The assets being available for purchase, lease or combination of both approaches are to be determined.

47. For a project sited on the IPA property, how would the property be conveyed/leased that would satisfy a potential financing entity?

    Response: It is the contractor's responsibility to determine the details of financing a project.

48. What technical, administrative, dispatch, operations and/or maintenance services are available from IPP or IPSC?

    Response: The services available from IPP or IPSC will be determined based on proposals received.

49. What encumbrances would be placed on a project owner for the CAES project to be sited on IPA property?

    Response: Encumbrances for a project owner for a CAES project sited on IPA property are to be determined.

50. How would existing IPP permits, such as air, be impacted if the CAES project is located on IPA property?

    Response: The permits required for the new CAES project would be separate from the existing IPP permits and shall not impact existing operation.

51. Please clarify what is meant in Table 2, Footnote 4: "Buyers shall receive Bucket 1 Renewable Energy Credit if renewables are used to charge CAES and shall be included in cost of energy where applicable".

    Response: If renewables are used to charge CAES, buyers may be eligible to receive Bucket 1 Renewable Energy Credit for the energy. For further guidance, please see the 9th edition of the California Energy Commission Guidebook.