# **Questions and Answers**

# **GFO-23-301**

# **Environmental Sustainability of a Clean Energy Transition (Enviro-SET)**

**October 7, 2024**

The following answers are based on California Energy Commission (CEC) staff’s interpretation of the questions received during the pre-application workshop and those submitted in writing prior to the deadline of September 13, 2024. It is the Applicant’s responsibility to review the purpose of the solicitation and to determine whether or not their proposed project is eligible for funding by reviewing the Eligibility Requirements within the solicitation manual. The CEC cannot give advice as to whether or not a particular project is eligible for funding, because not all proposal details are known.

**General/Administrative Questions**

**Q1:** **Can Community Choice Aggregators apply?**

A1: Yes, Community Choice Aggregator’s (CCA) are eligible to apply for this funding opportunity. As stated in the solicitation manual, Section II.A, “this solicitation is open to all public and private entities with the exception of local publicly owned electric utilities.” Community Choice Aggregators are distinct from locally publicly owned electric utilities, so they may apply.

**Q2: Are applicants from public universities within the US, but outside of the State of California, eligible to apply? Are national lab researchers outside California eligible to apply?**

A2: Yes, out-of-state applicants are eligible to apply to this funding opportunity. Please review Section IV.F of the solicitation manual, which describes scoring criteria, including how points are assigned under criterion 6, “CEC Funds Spent in California.” Applications receive points depending on the percentage of funds spent in California versus the total of CEC funds requested.

**Q3:** **There is a start date of May 26, 2025; is there a hard end date?**

A3: Both the start and end dates indicated in Section I.E of the solicitation manual are estimates. Awarded projects cannot invoice the CEC for any project expenses until the project is fully executed. We anticipate projects awarded for Groups 1-4 will have an approximate three-year term for the research. Awarded projects may be able to extend their project end dates contingent upon CEC approval. The liquidation deadline for funds associated with this Grant Funding Opportunity (GFO) is June 30, 2030.

**Q4:**  **I have developed software and hardware solutions to assess avian vision to easily quantify the efficacy of solutions (useful in both groups 3 and 4). I'm looking for collaborators in California to partner with.**

A4: Potential partners and collaborating opportunities for all CEC funding opportunities can be explored on the Empower Innovation web platform: <https://www.empowerinnovation.net/en/custom/funding/view/44133>.

**Q5:** **Can commitments from collaborators be in-kind (i.e., window manufacturers/glass manufacturers providing materials/products)?**

A5: Yes, match funding commitments from a collaborator can be in-kind. All match funding **must have a commitment letter** to be considered. Please review Section I.K of the solicitation manual for more information on match funds and Section IV. F, Criterion 8, of the solicitation manual for information on scoring for in-kind match funds.

**Q6:** **If we receive notice in January 2025 that our application was proposed for funding, could we bill for work initiated after the notification date but before the date the agreement is finalized?**

A6: No. Awardees cannot bill for activities that occur prior to execution of the agreement, although data gathered prior to the agreement start date can be used for the research. As stated in the EPIC Standard Terms and Conditions, section 1. e, “All work and expenditure of funds (CEC-reimbursed and/or match share) must occur within the Agreement term specified on the CEC-146 form.” The EPIC Terms and Conditions can be found here: <https://www.energy.ca.gov/funding-opportunities/funding-resources>.

**Q7:** **In Section I.K of the solicitation, there is a statement that says match funds do not include “the cost or value of pre-existing equipment or materials that are used to accomplish project tasks.”  Then in the section below this statement about “In-Kind match,” there is a statement that says in-kind match can be “existing equipment, existing supplies, services provided by a third-party or subrecipient…” This seems to be inconsistent, so can pre-existing equipment, materials, or supplies be included in match funds?**

A7: Equipment, materials, and supplies acquired before the agreement term and used to accomplish project tasks cannot be used as match funds, whereas those acquired during the agreement term can count as match funds. The solicitation manual has been amended to reflect this position in Addendum 1.

**Q8:** **If some work is ongoing or already has been done (i.e., in 2024) directly related to the proposed project, using volunteer labor and donated or borrowed equipment, can the value of these services be included in match funds?**

A8: No. Work completed prior to the agreement execution date cannot be used as match. As stated in the EPIC Standard Terms and Conditions, section 1. e, “All work and expenditure of funds (CEC-reimbursed and/or match share) must occur within the Agreement term specified on the CEC-146 form.”

The EPIC Terms and Conditions can be found here: <https://www.energy.ca.gov/funding-opportunities/funding-resources>.

**Q9:** **In the Project Narrative Form, Technical Merit, sub-criterion b states, “Describes the competitive advantages of the proposed technology over state-of-the-art (e.g., efficiency, emissions, durability, cost).” This section also requires a Competition Matrix to compare current and competing technologies.  If our proposed project is a field research study and does not propose new technology, how do we address this sub-criterion?**

A9: As stated in the solicitation manual Section I.A, “The purpose of this solicitation is to fund applied research and development projects that inform California’s transition to an equitable, zero-carbon energy system that is climate resilient and meets environmental goals. Funded projects must fall within one of the following groups:

* “**Group 1**: Automated mapping of solar energy footprints and modeling land suitability for agrivoltaics;
* **“Group 2**: Assessing and minimizing environmental and biological resource impacts of clean energy deployments;
* **“Group 3**: Testing bird-friendly windows for decarbonized buildings; and
* **“Group 4**:Identifying biologically appropriate exterior lighting.”

Applicants proposing field studies for research falling under one of the four project groups can describe the competitive advantage and innovations of their scientific approach (e.g., equipment, sampling methodology, analytical approach).

**Q10:** **We would like to include a non-profit that is headquartered in Arizona as a vendor for more than 2% of the total budget. They do have a California Chapter of their nonprofit. Regarding the ‘spent in California’ requirement for EPIC funds, is it sufficient to use the California Chapter as the listed address? Or if they register as an out-of-state nonprofit corporation, would that be best?**

A10: As stated in the solicitation manual Section I.L, funds spent in California are defined as:

“(1) Funds in the "Direct Labor category and all categories calculated based on direct labor (e.g., fringe benefits, indirect costs and profit) are paid to individuals that pay California state income taxes on wages received for work performed under the agreement. Payments made to out-of-state workers do not count as ‘funds spent in California.’ However, funds spent by out-of-state workers in California (e.g., hotel and food) can count as ‘funds spent in California.’; AND

“(2) Business transactions (e.g., material and equipment purchases, leases, and rentals) are entered into with a business located in California.

“(3) Total should include any applicable, subrecipients, sub-subrecipients, and vendors.”

Prospective applicants should consider the above definition and refer to the solicitation manual when deciding whether to contract with out-of-state vendors or their California Chapters, and when determining whether their proposed approach would count as “funds spent in California.”

**Technical Questions**

**Group 1: Automated mapping of solar energy footprints and modeling land suitability for agrivoltaics**

**Q11:** **For G1, is there guidance on the aerial/satellite imagery that should be used or can be used in order to manage the cost of operation? Similarly, is there a restriction on operational cost per square kilometer analyzed if a commercial aerial/satellite map service needs to be utilized?**

A11: Applicants are welcome to propose whatever imagery they believe can achieve the solicitation requirements within the budget of the grant. As described in Section I. C, Group 1 of the solicitation manual, the satellite or other remotely sensed imagery should detect “from utility-scale down to distributed energy resources such as residential rooftop solar panels. In addition, these automated methods should differentiate vegetation management options throughout existing ground-mounted solar panels in a robust and repeatable manner.”

There is no restriction on operational costs per square kilometer analyzed; however, please note that in Section IV. F of the solicitation manual, there are points given under scoring criterion 5 for budget and cost-effectiveness. Applicants are encouraged to estimate the costs of imagery for future updates of the solar footprint mapping to inform the CEC on the feasibility of updates.

**Q12:** **For Group 1, in the second phase of development spatial multi-criteria evaluation of land suitability for agrivoltaics, will evaluation criteria require need for images in near infrared bands typically used for vegetation analysis?**

A12: No, near infrared bands are not required for developing criteria for mapping land suitability for agrivoltaics. Applicants should describe the process they will use in collaboration with stakeholders to determine the appropriate criteria. However, applicants are welcome to suggest likely criteria in their proposals.

**Q13:** **For Group 1, will multi-criteria evaluation (for agrivoltaic suitability mapping) need the map resources to be revisited at certain minimum intervals (e.g., map needs to be updated once every 6 months)?**

A13: No. The CEC expects that the multi-criteria analysis will be relatively static; that is, the maps would only be created during this project but need not be refreshed or updated at regular intervals.

**Q14:** **Is there any website/document/Geographic Information System (GIS) layer that lists the locations of current and planned land-based clean energy facilities?**

A14: Various public websites and GIS layers exist that show locations of current clean energy facilities. A national GIS layer of utility-scale solar photovoltaic facilities is accessible at <https://eerscmap.usgs.gov/uspvdb/>. Similarly, a wind energy facilities GIS layer can be accessed at <https://eerscmap.usgs.gov/uswtdb/>.

**Q15:** **For Group 1, is there a specific programming language that the program needs to be created in?**

A15: No, there is no specific programming language that the program needs to be created in. However, the product needs to be open source and must not require any proprietary software or compilers so that others can run or modify the tool.

**Q16:** **Is there a preferred mapping tool for the program to source imagery from?**

A16: No, there is no preferred mapping tool for the program to source imagery from. Applicants should consider substantiating in their proposals why they are choosing the mapping tool they will be using for conducting their research. For instance, the CEC will consider the cost of imagery in evaluating applications, both in terms of cost-effectiveness of the research and of monitoring the growth of solar footprints. Please refer to Question 11 for additional information.

**Group 2: Assessing and minimizing environmental and biological resource impacts of clean energy deployments**

**Q17:** **Regarding Group 2 proposals: is there a priority list of knowledge gaps in terms of ecological and biological effects that the commission is wanting to see addressed?**

A17: No, the CEC does not have an ecological or biological priority list. It is up to the applicants to decide which environmental and biological resource impact(s) of clean energy deployment(s) to focus on in their field studies or modelling. As explained in Section I. C, Group 2 of the solicitation manual, applicants should “discuss why filling the knowledge gaps regarding the species or ecosystems chosen for study and their interactions with renewable energy generation are important for meeting California’s clean energy goals. This discussion of Technical Merit must include consideration of the ecological significance of potential impacts.”

**Q18:** **Can Zero Emission Energy Generation be islanded, or does it need to be grid connected?  And if islanding is allowed, which group would that fall under?**

A18: The focus of this solicitation is environmental sustainability of clean energy technology. This question seems most relevant to Group 2, which addresses potential environmental impacts of clean energy generation. The solicitation makes no specific restrictions on whether or not the generation technology can be islanded. However, the application needs to address all required elements for the associated group and demonstrate the importance of the potential impacts on the environment or the proposed mitigation strategy of the technology to California’s electricity system.

**Q19:** **Since this category is focused on understanding and reducing environmental harm from clean energy deployments and not on deploying any new energy sources directly, how do you propose measuring energy benefits for California IOU Ratepayers in a quantifiable manner (EPIC, Gas Research & Development Program, cost reductions, etc.)? Similarly, the non-energy benefits listed in the document do not include improved biodiversity, healthier ecosystems, or availability of ecosystem services as examples of non-energy benefit. Instead, they focus on water, carbon, etc. Do you have examples or recommendations for how to quantify impact from projects that focus on biodiversity assessment and modeling and minimizing overall environmental impact?**

A19: Applicants can provide best estimates of the possible energy benefits of their proposed research. Scoring criterion 3 provides information on non-energy benefits that should be addressed by applicants (GHG emission reductions, air emission reductions (e.g., nitrogen oxides), water savings, cost reduction, increased safety) that are not exclusive. Section II.B.2 of the solicitation manual identifies “improving environmental sustainability” as one of the ratepayer benefits that applicants must address.

**Group 3: Testing bird-friendly windows for decarbonized buildings**

**Q20:** **Pertaining to Group 3: Is it a requirement that the windows tested include technology like transparent Photovoltaic (PV) or electrochromics?**

A20: It is a requirement that the windows have some energy technology relevant to the electricity system, but the type of technology or technologies to be tested is not specified in the GFO. Thus, neither electrochromics nor transparent PV is explicitly required. Rather, the applicant must explain how their choice of technology is relevant to the electricity system and decarbonization goals, whether through generation, demand reduction, or some other attribute. As explained in Section I. C of the solicitation manual, applications in Group 3 should both test window solutions that provide decarbonization benefits (either producing energy or conserving energy) and deter birds from colliding with the glass, with minimal trade-offs between these co-benefits.

**Q21:** **In Group 3, is tunnel testing mandatory even if the bird-friendly component already has a Threat Factor listed in the American Bird Conservatory's directory of products?**

A21: Field or laboratory testing is required to determine how well windows are expected to deter birds from collisions with the glass. Tunnel testing is an example of a practice in current use, but this technique is not mandatory for Group 3. As explained in Section I. C, Group 3 of the solicitation manual, “Testing strategies could include tunnel tests with live birds[[1]](#footnote-2), ideally in California.” Applicants should plan on explaining the type of testing proposed. To the knowledge of CEC staff, the Material Threat Factor[[2]](#footnote-3) developed by the American Bird Conservatory has never been applied to birds’ responses to windows that have both decarbonizing benefits and bird deterrents, which is required in this grant funding opportunity.

**Group 4: Identifying biologically appropriate exterior lighting**

**Q22:** **What are the desired outcomes/desired deliverables for Group 4 projects?**

A22: The GFO does not specify deliverables. Rather, the solicitation manual describes requirements, and the applicant will propose research tasks and specify associated deliverables in the scope of work (see Attachment 4). The desired outcomes are to have a greater understanding of the effects and impacts of night lighting on species and ecosystems, identify solutions, and offer recommendations on how building standards might be adapted to minimize effects and impacts. Please refer to Section I. C, Group 4 of the solicitation manual for details.

1. https://www.washcoll.edu/learn-by-doing/ces/bird-safe-glass.php [↑](#footnote-ref-2)
2. https://abcbirds.org/wp-content/uploads/2023/01/What-is-a-Material-Threat-Factor-1\_23.pdf [↑](#footnote-ref-3)