

PON-11-507

Hybrid Generation and Fuel-flexible Distributed Generation/Combined Heat and Power/Combined Cooling, Heat and Power (DG/CHP/CCHP) Systems

Research, Development and Demonstration PIER Renewable Energy and Advanced Generation

1. Are proposals welcome that do not include a demonstration?
 - a. Yes.
2. Are proposals welcome that are only about a demonstration?
 - a. Yes.
3. In reference to the requirement that demonstrations be performed in sites under investor owned utilities (IOUs), if the project is located in a publicly owned utility (POU) electrical service area but is served by an IOU for natural gas and the primary benefit of the demonstration would be electrical in nature, do we also need to demonstrate a benefit to the IOU?
 - a. Yes.
4. Would a specific project be eligible for funding?
 - a. Please review the solicitation requirements, including Section 7 (Eligible Projects), Section 16 (Proposal Requirements), and Attachment G (Proposal Screening and Scoring Criteria) for details.
5. If we write a one-page type of abstract could you take a look at it and say whether we can apply or not?
 - a. No. There can be no communication between applicants and staff while the solicitation is open except the workshop and the questions and answers, which are now closed. You must submit a complete proposal by the due date.

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6. Is funding for the Solicitation from Public Interest Energy Research (PIER) electricity funds, PIER natural gas funds, or both?
 - a. Solicitation funding is from PIER natural gas funds.
7. Is that why gas company locations are acceptable?
 - a. Yes.
8. In my remembrance of past PIER projects, in order to be eligible for PIER funds you had to be grid connected. Do projects under this solicitation need to be grid connected?
 - a. A project does not have to be grid connected.
9. Does the Solicitation accept proposals that are not electric that are mechanical drive? (For example, a type of mechanical drive could be an industrial plant where you are driving a pump or compressor with your prime mover and then using the heat, it's kind of like stand alone DG, and totally bypasses the grid. There are some advantages because you don't have a lot of the utility non-bypassable surcharges and interconnection hassles associated with it) The other option could be a gas engine driven heat pump that does both heating and cooling for commercial or even residential buildings. Does that qualify?
 - a. A mechanical drive that does not generate electricity is not eligible. A gas engine that drives a heat pump for both heating and cooling but does not generate electricity is not eligible for funding. Refer to sections 6 and 7 of the solicitation.
10. So mechanical drives are not eligible?
 - a. Mechanical drives are ineligible. The basic elements for CHP are electricity generation and utilization of waste heat as described in section 6, page 5.
11. The hybrid generation you talked about with being multiple fuels, are you talking about multiple fuels in a prime mover, or could it be a natural gas engine or microturbine technologies coupled with photovoltaics and batteries, in some kind of micro grid?
 - a. It can include all of the above.

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12. Natural gas, no biofuels, just natural gas, CHP, if you are targeting an application where you can use the CO₂ in the process, in addition to the heat, does that somehow count as a hybrid generation of sorts, because you are getting not two products, but three: 1) generating electricity; 2) using the excess heat; and 3) using all the CO₂ that is in the exhaust?
- a. A natural gas system may qualify provided it is capable of generating electricity from either a combination of multiple technologies or with fuel flexibility and capable of capturing the excess heat. Having multiple uses of the products is also good from the point of view of maximizing resources.
13. Is it true that such a project would not count as having bi-fuels, or multiple fuels?
- a. It is not a bi-fuel or a multiple fuel system, and does not qualify under that definition.
14. Could a pure natural gas CHP system qualify?
- a. Yes. Please review Section 7 (Eligible Projects), Section 16 (Proposal Requirements), and Attachment G (Proposal Screening and Scoring Criteria) for details.
15. Would a hybrid generation and storage system that does not take advantage of excess heat be eligible?
- a. No, a project proposing electricity generation and storage without utilizing excess heat would not qualify under this Solicitation. Part of the emphasis of the Solicitation is to look at CHP application and the heat component is important.
16. What weight would be given to greenhouse gas (GHG) reduction, particularly CO₂, and a solution that combines use of biomass with a CO₂ catcher?
- a. There is no scoring advantage for GHG reduction or carbon capture in this Solicitation. Proposals are only scored in accordance with the Scoring Criteria. Please review Attachment G for details.
17. Are certain technical aspects scored higher than others such as flex fuels, hybrid, renewable energy, capacity factors, or CHP? Will any of that score any differently? How are you going to be doing the technical scoring?
- a. There are no preferences for any specific technologies. Proposals will be scored based on the criteria that are identified in Attachment G of the Solicitation Manual. The proposals will be evaluated by a diverse group of qualified individuals.

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18. Is there a minimum kilowatt (kw) capacity for this CHP application?

a. No.

19. Is there a preferred kw capacity?

a. No.

20. Are traditional internal combustion (IC) technologies allowed?

a. Yes.

21. Is there a minimum dollar amount?

a. No.

22. Is there a preferred industry application, agricultural versus industrial or food processing?

a. There are no preferred industrial, agricultural, or food processing applications.

23. Is there a defined upper limit on produced power to qualify as DG?

a. No, there is no upper limit defined or required in the solicitation. You may find in some literature that the upper limit that has been mentioned is somewhere between 10 to 20 MW, but that is a large DG system.

24. If it is near the point of use, would that be the most important factor?

a. It is an important factor but it is not the most important. For more details on what factors are important please review the Scoring Criteria in Attachment G.

25. What is the earliest funds disbursement date? Is disbursement as one block amount or is it disbursed over time?

a. These grants are on a reimbursable basis. Once the grant is executed you can start incurring expenses. Once you've incurred expenses you can send invoice payment request with proof of incurred expense. Generally, it is suggested that invoicing should be on a monthly basis. There is a 45-day turn around for payment of invoices. Please review section 17 of the sample terms and conditions (Attachment N) in this solicitation for details on disbursements.

26. Will there be additional consideration given to future investment beyond the grant for future investment in California?

a. No.

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27. Is there a definition of what the Energy Commission considers a “new project”? Is it a project that hasn’t begun work until the grant execution date or some other definition that the Energy Commission is using to consider what is new?
- a. “New projects” are defined as projects not already being funded by the Energy Commission.
28. What happens if we start the project before the grant is executed?
- a. The Commission cannot reimburse for, or count as match, expenses incurred outside of the term of the grant. The term of the grant does not begin until the grant is executed.
29. What is the definition of “headquarters” or office of transactions of business in California? Does that count as the project site?
- a. “Headquarters” means the business entity’s main administrative office.
30. Provide a definition of a California-Based Entity (CBE).
- a. See page 9 of the Solicitation Manual and Attachment H (California-Based Entity form). A CBE is a corporation or other business entity organized for the transaction of business that:
 - Has its headquarters or an office in California; and
 - Substantially manufactures the product or substantially performs the research within California that is the subject of the award.
31. One of the evaluation criteria was a little bit confusing to me, and I want your rationale for it. It has to do with the average loaded rates, where cheaper is better. It seems to me that you might be encouraging more research and development (R&D) type projects that utilize more technicians or field labor than you are encouraging projects that have higher paid personnel such as Ph.D.s or senior engineers. I’m just wondering what the rationale was for this?
- a. The basic rationale is to encourage more funding of actual research rather than payment of personnel.
32. In relation to Criteria 8 part 2, if an individual has a labor rate of \$150/hr., but they want to cost share \$25/hr., so that the Energy Commission rate is \$125/hr., is the rate that gets scored the \$150/hr. or \$125/hr?
- a. The \$150/hr labor rate.
33. Please clarify what qualifies for hybrid generation.
- a. Hybrid generation is defined in the solicitation (page 6) as seamlessly integrated and managed combinations of two or more energy conversion technologies.

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34. Would the alternative fuels side include multiple fuel feed stocks for the digester?
- a. "Fuel flexibility" or "alternative fuels" refers to two or more type of fuels or a varying quality of fuels used in the power generation technology (examples are internal combustion engine, gas turbine or fuel cell). Note that the baseline here is the power generation technology. Biogas produced by digester, which is a good alternative to natural gas, qualifies in this case. Use of multiple fuel feed stocks in the digester may result in production of biogas of varying quality which also fits in the criteria of flexibility.
35. Could different feed stocks count as multiple fuel sources?
- a. As mentioned above, the basis of fuel flexibility is on the type or quality of fuel used to operate power generation technology. The ability to use different feed stocks in your digester will possibly demonstrate varying quality of biogas, but it is not a requirement in this case. Projects that, at a minimum, demonstrate the use of biogas as alternative to natural gas for CHP are eligible.
36. So you want the ability to have multiple feed stocks, would it be a requirement that multiple feed stocks are also being used, or just the ability?
- a. These are two separate questions. The first has to do with multiple feed stocks being used in a digester. The second is the ability of a digester to use multiple feed stocks and is it required of the later.
- The answer to the first question is that it would be useful to demonstrate a multiple feed stock digester.
- The answer to the second question is that it would also be useful to demonstrate the ability of a digester to use multiple feed stocks.
37. In a hybrid system when you are looking at a combination of different technologies, would storage potentially qualify as part of what makes something as a hybrid?
- a. Yes.
38. Just to be clear on the matching funds, for example, if we request \$1,000,000 from the State of California, we need to provide \$250,000?
- a. That is correct.
39. The royalty payment provision uses the term "Recipient". Is the Recipient the one responsible for paying back any royalties?
- a. Yes.

40. Is the Recipient the same as the prime contractor?

- a. Yes. "Recipient" is the term used in grants that is equivalent to the "prime contractor" in contracts.

41. If the Recipient is not selling what is being demonstrated is the royalty payment provision applicable?

- a. All Recipients must agree to the royalty provisions of the Terms and Conditions. The Recipient's obligation to make royalty payments begins on the date that project-related products and rights are first sold. See section 25, page 32 of the PIER Terms and Conditions (Attachment N).

42. Is the "applicant" the same as the "Recipient"?

- a. Yes.

43. Please clarify the economic benefit to the utility. How is that being defined? If you are developing new innovative technologies, can they benefit over the long term or do they have to be measured off of the economics of the project itself?

- a. The economic benefits must be measured over the life of the project. Anticipated benefits as a result of the proposed project must also be provided.

44. Is the economic benefit relative to other renewables, or what is it compared to when looking at the benefits for the utilities and ratepayers?

- a. What is requested is for a project to demonstrate benefits to the California ratepayers from our PIER investment in a particular research project over the life of the project and anticipated beneficial impacts after the project has ended and it has transitioned to the commercialization phase. The proposal must be able to justify its method and metrics of determining benefits.

45. Is there specific documentation or any other proof that is needed for establishing an Applicant's headquarters?

- a. No. However, the Solicitation requires business entities located outside of California to register with the Secretary of State (see Page 9 of the Solicitation).

46. Can a residential address count as a headquarters or an office?

- a. Yes.

47. Can the chosen project or research site be the headquarters or office regardless of whether it is commercial or residential?

a. No.

48. Would moving our address of incorporation to California be necessary to count as a CBE? Would it be preferred?

a. To count as a CBE an entity must fall under the definition bellow:

A CBE is a corporation or other business entity organized for the transaction of business that:

- Has its headquarters or an office in California; and**
- Substantially manufactures the product or substantially performs the research within California that is the subject of the award.**

While the applicant is not required to be a CBE, there is a requirement that at least 60% of the PIER funds go to a CBE.

49. All potential Recipients must be registered with the California Secretary of State. It is my understanding from the Application Manual and the end of Attachment H that registration with the California Secretary of State is only needed by the time awards are announced, and that registration is not needed in order to submit an application in applying for funding. Is this correct?

a. Yes. However, applicants are encouraged to contact the Secretary of State's Office as soon as possible to avoid potential project delays if successful under this Solicitation.

50. Can project funds be used to purchase and install a food waste digester and associated equipment, as well as to integrate the food waste digester gas into an existing wastewater treatment plant CHP system?

a. Yes.

51. Will the use of food waste digester gas and wastewater treatment gas in the same CHP system meet the requirement for fuel flexibility?

a. Yes.

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52. A food waste digester to energy system is a relatively new technology that does not have an established baseline for cost and performance characteristics. Our project design will be innovative, will move the technology forward, and will demonstrate an expanded market for the conversion of food waste to energy. Will these aspects of our project meet the solicitation requirement to “show innovations beyond the current market of CHP/CCHP”?
- a. It is the responsibility of the applicant to make the argument that this requirement has been met.
53. What is included in the 50-page page limit?
- a. The proposal limit is 50 pages for all elements identified in Section 16, Proposal Requirements, except for attachments.
54. Please clarify whether proposals that include "hybrid generation" as defined at the top of Page 6 of the Application Manual but not "fuel-flexible systems" also defined on Page 6 would pass the initial screening and be evaluated by the Technical Scoring Committee. This appears to conflict with page six, Section 7 (Eligible Projects), which states that "Development and demonstration projects must emphasize hybrid generation and fuel flexible CHP/CCHP".
- a. Proposals that include hybrid generation only or fuel flexible capability only would pass the initial screening provided all other requirements are met.
55. Please clarify whether proposals that do not include energy storage would pass the initial screening and be evaluated by the Technical Scoring Committee.
- a. Proposals do not necessarily need to have energy storage to qualify and pass the initial screening. Please note that energy storage proposals qualify as long as the project addresses the CHP and DG requirements.