

**CALIFORNIA ENERGY COMMISSION**

1516 NINTH STREET  
SACRAMENTO, CA 95814-5512  
www.energy.ca.gov



January 27, 2014

California Energy Commission

**DOCKETED****12-EPIC-01**

TN 72576

FEB 13 2014

To: Researchers and Other Interested Parties: QUESTIONNAIRE for 2015-2017 Triennial Investment Plan for the Electric Program Investment Charge

Questionnaire for applied research and development, technology demonstration and deployment, and market facilitation

The Electric Program Investment Charge (EPIC) provides electric public interest investments in applied research and development, technology demonstration and deployment, and market facilitation for clean energy technologies in accordance with California Public Utilities Commission's May 31, 2012, Phase 2 Decision 12-05-037, as modified.<sup>1</sup> The California Energy Commission, Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), and Southern California Edison Company (SCE), as the four administrators of the program, submitted coordinated investment plans to the CPUC for consideration on November 1, 2012. In November, 2013, CPUC Decision 13-11-025 modified and approved the first triennial investment plans of each program administrator. The portion of the EPIC Program administered by the Energy Commission will provide funding for applied research and development, technology demonstration and deployment, and market facilitation for clean energy technologies and approaches for the benefit of ratepayers of PG&E, SDG&E, and SCE.

Energy Commission staff is implementing its first EPIC investment plan, as modified and approved by the CPUC.<sup>2</sup> Competitive solicitations for initiatives in the first EPIC investment plan will be published soon. A schedule of upcoming EPIC funding opportunities and feedback opportunities for the Energy Commission's first EPIC investment plan is available online at [www.energy.ca.gov/research/epic/](http://www.energy.ca.gov/research/epic/).

The CPUC EPIC schedule calls for EPIC administrators, including the Energy Commission, to submit a proposed second EPIC investment plan by May 1, 2014.<sup>3</sup> To meet this schedule, Energy Commission staff is now developing the second triennial investment plan for EPIC funds collected in 2015-17. The plan must be approved by the CPUC. Staff estimates the plan may include \$340 million for applied research and development, technology deployment and demonstration, and market facilitation. As part of this information gathering process for the second EPIC investment plan, the Energy Commission seeks ideas from interested parties on proposed initiatives in the topic areas of the electricity system "Value Chain," specifically grid operations/market design, generation, transmission, distribution, and demand-side management. The Energy Commission's second EPIC investment plan will build upon and follow the initiative format of the first triennial EPIC investment plan located at: [www.energy.ca.gov/research/epic/documents/final\\_documents\\_submitted\\_to\\_CPUC/2012-11-01\\_EPIC\\_Application\\_to\\_CPUC.pdf](http://www.energy.ca.gov/research/epic/documents/final_documents_submitted_to_CPUC/2012-11-01_EPIC_Application_to_CPUC.pdf) as modified and approved by the CPUC in Decision 13-11-025, <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M081/K773/81773445.PDF>.

<sup>1</sup> [http://docs.cpuc.ca.gov/PublishedDocs/WORD\\_PDF/FINAL\\_DECISION/167664.PDF](http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF)

<sup>2</sup> Energy Commission, October 2013, The Electric Program Investment Charge: Proposed 2012-14 Triennial Investment Plan, in Application of the California Energy Commission for Approval of Electric Program Investment Charge Proposed 2012 through 2014 Triennial Investment Plan, Attachment 1, [http://www.energy.ca.gov/research/epic/documents/final\\_documents\\_submitted\\_to\\_CPUC/2012-11-01\\_EPIC\\_Application\\_to\\_CPUC.pdf](http://www.energy.ca.gov/research/epic/documents/final_documents_submitted_to_CPUC/2012-11-01_EPIC_Application_to_CPUC.pdf), as modified and approved by the CPUC in Decision 13-11-025, <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M081/K773/81773445.PDF>.

<sup>3</sup> CPUC Decision 12-05-037, Phase 2 Decision Establishing Purposes and Governance for Electric Program Investment Charge and Establishing Funding Collections for 2013-2020, [http://docs.cpuc.ca.gov/PublishedDocs/WORD\\_PDF/FINAL\\_DECISION/167664.PDF](http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF), page 31. CPUC Decision 13-04-030 modified Decision 12-05-037.

**This is only a Request for Information; please do not submit proposals for funding.**

Initiative ideas received, in response to this request, will be considered by Energy Commission staff in developing the second EPIC investment plan for funds collected in 2015-2017.

If you have applied research, development, technology demonstration, deployment or market facilitation ideas, please complete the attached initiative template. This template asks you to discuss your idea, identify why this research is appropriate for public funding, and include the issues/barriers that are impeding full market adoption of the clean energy technology/strategy addressed. Proposed initiatives will be compiled and posted on the Energy Commission website at: [www.energy.ca.gov/research/epic/](http://www.energy.ca.gov/research/epic/).

Here are some guidelines for completing the template:

1. The information contained in your initiative should be no more than three pages.
2. Complete one template per initiative. Multiple templates may be submitted, one for each separate initiative.
3. All proposed initiatives must advance science or technology and offer a reasonable probability of providing benefits to California Electric Investor Owned utilities (IOU) ratepayers and must meet the following criteria:
  - a. Focus on energy efficiency and demand-side management, generation, transmission and distribution, grid operation and market design issues.
  - b. Support state energy policy.
  - c. Consider opportunities for collaboration and co-funding with other entities.

Please e-mail suggested initiatives in a downloadable, searchable format such as Microsoft® Word (.doc) or Acrobat® (.pdf) by February 13, 2014. Please include the docket number 12-EPIC-01 and indicate "EPIC second investment plan" in the subject line. Send the completed initiative questionnaire to:

[docket@energy.ca.gov](mailto:docket@energy.ca.gov) and include in the CC line: [Prab.Sethi@energy.ca.gov](mailto:Prab.Sethi@energy.ca.gov)

A public workshop is scheduled in February, 2014 to focus on market facilitation. A draft second investment plan will be released in March, 2014 and a public workshop will be conducted to receive comments on the draft second investment plan.

Sincerely,

Laurie ten Hope  
Deputy Director  
Energy Research and Development Division



**(This is a Request for Information only - Complete Pages 1 and 2 for each initiative)**

**Title of Proposed Initiative** (Short and concise): Research on local ecological impacts of forest biomass harvesting to ensure ecological sustainability and thereby accelerate deployment of forest biomass energy technology.

**Investment Areas** (Check one or more) – *For definitions, see First Triennial Investment Plan, page 12:*

- Applied Research and Development
- Technology Demonstration and Deployment
- Market Facilitation

**Electricity System Value Chain** (**Check only one**): See CPUC Decision 12-05-037, Ordering Paragraph 12.a. [http://docs.cpuc.ca.gov/PublishedDocs/WORD\\_PDF/FINAL\\_DECISION/167664.PDF](http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF).

- Grid operations/market design
- Generation
- Transmission
- Distribution
- Demand-side management

**Issues and Barriers:**

The first triennial investment plan for the EPIC program appropriately identified the ecological sustainability of forest biomass energy as a research need. Proposed funding initiative S3.2 noted that “additional research is needed to develop uniform sustainability standards for biomass harvests.” One of the purposes of initiative S3.2 is to “advance research on sustainability standards for harvesting biomass in forestry and agricultural settings to ensure that future bioenergy development is environmentally sustainable.”

The need for ecological sustainability standards for forest biomass operations in California is critical. While there are some nascent standards in other parts of the country, no true standard has yet been developed for California’s forests and their unique ecological attributes, existing condition and energy potential.

In order to create appropriate standards for California, it is necessary to conduct research to inform these standards. Research that helps to define such standards should also be local in its focus. While there is some existing, general research on the statewide potential for forest biomass energy, this literature tends to focus on energy potential and not the environmental impact of biomass energy facilities in particular locations. Research on the ecological impact of forest biomass energy in particular “woodsheds” (a forest within 50 miles of an energy facility) is lacking.

Without such localized research, feasibility studies for particular facilities will be incomplete. Local lead agencies preparing CEQA documentation for a facility may not be able to sufficiently describe the ecological impact of a facility, which may adversely affect timelines for construction and operation of a facility.

Therefore, the lack of research into the ecological sustainability of forest biomass energy is a barrier to the timely deployment of such energy in California. The next iteration of the EPIC investment plan should build on the wisdom of the first investment plan and recognize the need for research into the sustainability of forest biomass energy.

## **Initiative Description and Purpose:**

By researching the ecological impacts of forest biomass energy for particular woodsheds in California, environmental permitting requirements for facilities will be more easily met.

Currently, it is difficult for a lead agency to predict what the impact of a biomass energy plant will be on a forested region surrounding a plant. While some general predictions can be made regarding GHG emissions from a plant, the capacity of an affected woodshed to sequester those emissions (and the rate of such sequestration) in a particular location in California is currently unknown. Understanding the interaction between a forest biomass energy plant, its fuel sourcing needs and the natural carbon cycle of the surrounding forest will likely prove critical to understanding the ecological impacts of a facility's operation.

Because this proposed initiative's research will seek to answer such questions on the local level – and look beyond carbon flux to questions around habitat for sensitive species and hydrological impacts – the research will address some of the current barriers to timely permitting of facilities.

We recommend a minimum funding level of \$2 million for this proposed initiative, and a maximum of \$15 million. Assuming that \$500,000 is needed for a study of a single potential woodshed, \$2 million will allow for four such studies and \$15 million will allow for 30 studies. Four studies would assist in the development of a few forest biomass facilities, while 30 studies would allow for more timely environmental permitting for a comprehensive array of forest biomass facilities statewide.

## **Stakeholders:**

As with initiative S3.2 in the first EPIC investment plan, we expect that a variety of stakeholders that are engaged with energy, greenhouse gas emissions and forestry issues in California will be interested in this initiative. These stakeholders include ratepayers in rural and urban communities, local air quality districts, the California Air Resources Board, the California Department of Forestry and Fire Protection, biomass industry groups, environmental and conservation non-profits, timber companies, and IOUs and local utilities.

## **Background and the State-of-the-Art:**

We are aware of existing research, some financed by CEC (primarily through UC Berkeley), which addresses the ecological sustainability of biomass energy. Our understanding is that this research was conducted at a general level and did not explicitly investigate woodshed-level impacts of forest biomass extraction on ecosystem sustainability. In addition, the first EPIC investment plan may fund research in this area, but a PON for this research has yet to be released.

At this time we are not aware of other programs, beyond EPIC as mentioned above, that fund this exact kind of research on local woodshed sustainability in California on a large scale. The US Department of Agriculture makes some funding available to facilitate forest biomass energy development, but our understanding is that this funding is principally for the construction and operation of biomass facilities, rather than investigations of potential environmental impacts.

**Justification:**

It is expected that research pursued according to this initiative would directly assist in the development of 50Mw of forest biomass energy pursuant to SB1122. Timely financing and construction of new SB1122 facilities depends on the ability to demonstrate that they meet ecological sustainability criteria early in the feasibility process.

This research is appropriate for public funding as there are direct public and ratepayer benefits that result from SB1122 forest biomass facilities that are ecologically sustainable. By streamlining the permitting process, these facilities would be operational more quickly and would reduce ratepayer costs associated with project delays.

**Ratepayer Benefits (Check one or more):**

- Promote greater reliability
- Potential energy and cost savings
- Increased safety
- Societal benefits
- Environmental benefits - specify
- GHG emissions mitigation/adaptation in the electricity sector at the lowest possible cost
- Low emission vehicles/transportation
- Waste reduction
- Economic development

As noted above, ratepayer benefits of the proposed initiative include lower costs related to plant development and operation due to streamlined environmental approvals. In addition, ecologically sustainable forest biomass plants will support healthy forest stands that deliver myriad public benefits such as water filtration and regulation, carbon sequestration, wildfire risk reduction and wildlife habitat conservation.

**Public Utilities Code Sections 740.1 and 8360:**

This initiative will help meet section 740.1 by offering a reasonable probability of providing benefits to ratepayers by streamlining project approvals and thereby saving ratepayer costs associated with project delays and potential litigation. It will also help ensure that forest biomass energy is ecologically sustainable. In general, the initiative will also help meet section 8360 by assisting with rapid deployment and integration of cost-effective, renewable, and distributed resources under SB1122 (forest biomass plants under 3Mw in size).