

DOCKETED	
Docket Number:	19-ERDD-01
Project Title:	Research Idea Exchange
TN #:	230888
Document Title:	Notice of Staff Workshop - Request for Comments on Forthcoming Solicitation Regarding Climate Scenarios and Analyses
Description:	California Energy Commission (CEC) staff will conduct a staff workshop to seek input from stakeholders on forthcoming solicitation regarding climate scenarios and analyses to support electricity sector vulnerability assessment and resilient planning. December 16, 2019; 12:30 - 3:30 pm
Filer:	Martine Schmidt-Poolman
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	11/27/2019 2:45:32 PM
Docketed Date:	12/2/2019



<i>IN THE MATTER OF:</i>)	Docket No. 19-ERDD-01
)	
<i>Request for Comments on Forthcoming Solicitation Regarding Climate Scenarios and Analyses to Support Electricity Sector Vulnerability Assessment and Resilient Planning</i>)	WORKSHOP
)	RE: Forthcoming Solicitation Regarding Climate Scenarios and Analyses to Support Electricity Sector Vulnerability Assessment and Resilient Planning

NOTICE OF STAFF WORKSHOP

California Energy Commission (CEC) staff will conduct a staff workshop to seek input from stakeholders on forthcoming solicitation regarding climate scenarios and analyses to support electricity sector vulnerability assessment and resilient planning. The workshop will be held:

**December 16, 2019
12:30 p.m. - 3:30 p.m.**

**Warren-Alquist State Energy Building
1516 Ninth Street
1st Floor, Charles R. Imbrecht Hearing Room
Sacramento, California 95814
(Wheelchair Accessible)**

Remote access is available by computer or phone via WebEx.™
(Instructions below.)

Agenda

CEC staff are seeking input from research community stakeholders, investor-owned utilities (IOUs), and other interested stakeholders to inform the scope and structure of an anticipated solicitation. The proposed solicitation will support development of next-generation climate projections for California's Fifth Climate Change Assessment (Fifth Assessment) and delivery of data in a manner that informs energy sector planning and research through stakeholder engagement, data analytics, and development of a data platform. The proposed solicitation contributes to implementation of the 2018-2020 *Electric Program Investment Charge (EPIC) Triennial Investment Plan*. Delivery of data from the proposed solicitation will be coordinated with broader stakeholder engagement efforts led by the Strategic Growth Council and the Governor's Office of Planning and Research in support of an anticipated Fifth Assessment. This workshop will:

1. Present initial ideas on the scope and structure of an EPIC-funded research solicitation, planned for release in the second quarter of 2020, that would:
 - a. Develop downscaled climate projections for California that will support the Fifth Assessment;
 - b. Identify priority projections for consideration in energy-related research and planning;
 - c. Vigorously engage energy sector stakeholders to identify how projected climate data can support research and adaptation efforts;
 - d. Develop analytical approaches to meeting stakeholder needs; and
 - e. Provide a data platform that supports use of climate projections for California.
2. Offer stakeholders the opportunity to weigh in, in a public forum (oral and/or written comment), regarding the scope and structure of proposed research, as well as processes to facilitate production of actionable research.

The proposed research intends to contribute to a scientifically rigorous foundation for anticipating and adapting to climate and weather-related challenges, thereby fostering climate adaptation in the electricity sector. It is anticipated that the climate projections delivered by this research will support the Fifth Assessment, and that the stakeholder engagement and analytics components of the research will directly support use of the projections by energy-related researchers and by investor-owned utilities' (IOUs) in adaptation planning.

To ensure that funded research is scoped and structured to provide actionable results, the CEC seeks to engage stakeholders and IOUs early in and throughout the process. Feedback elicited during this workshop as well as through written public comments submitted to the docket will inform the specific research goals, scope, and approach to be targeted in a forthcoming Grant Funding Opportunity (GFO).

Background

The 2018-2020 *EPIC Triennial Investment Plan* includes the research subtheme 7.2 “Increase the Resiliency of the Electricity System to Climate Change and Extreme Weather Events.” The proposed research is intended to provide crucial support to the state’s efforts for electricity sector resilience by supporting two initiatives associated with this subtheme:

- Initiative 7.2.1 Improved Understanding of Climate - and Weather-Related Risks and Resilience Options
- Initiative 7.2.3 Integrate Climate Readiness into Electricity System Operations, Tools, and Models

Research Goals

Based on input voiced in public CEC workshops, public comments, and technical advisory committees, as well as the California Public Utilities Commission (CPUC) 2019 climate change adaptation rulemaking (R.18-04-019), the proposed solicitation will address all of the following research goals:

1. **Produce bias-corrected, downscaled climate projections** for California based on the Global Circulation Model (GCM) realizations that contribute to the Coupled Model Intercomparison Project Phase 6 (CMIP6).
2. **Identify a subset of priority downscaled climate projections (priority projections henceforth) for use in the Fifth Assessment**, where the priority projections provide a more computationally tractable (reduced) set for researchers to work with and/or preferentially cull models based on their performance with regard to processes of relevance to California.
 - a. Ideally, the priority projections will represent a multiplicity of possible futures AND constrain uncertainty by preferential model selection, if/as possible and appropriate.
 - b. In addition to the downscaled projections developed under this research grant, the pool of projections considered as possible priority projections should include peer-reviewed climate projections contributed by groups funded external to this research effort, if those projections align with the requirements (e.g., timeline, needed variables) of the Fifth Assessment.
 - c. Identification of priority projections may involve collaboration with efforts funded external to this work.
 - d. Draft priority projections must be presented to, and respond to input from, research teams and management involved with the Fifth Assessment.
3. **Vigorously engage energy sector stakeholders to clearly identify how climate projections can be used to foster adaptation.** Stakeholders to be engaged include, but are not limited to, energy sector researchers involved with the Fifth Assessment and IOUs.
 - a. Stakeholder engagement must consider various collaborative research approaches.
 - b. Given the importance of stakeholder engagement, engagement must be adequately resourced.
 - c. Engagement must iterate between project teams and stakeholders throughout the entire research process.
4. **Provide analytically rigorous approaches to meeting data needs elicited through stakeholder engagement based on the projections developed by this research grant as well as other peer-reviewed downscaled climate projections** that align with the requirements of the Fifth Assessment.
 - a. It is expected that the research team will provide quasi-probabilistic interpretations of climate projections, where needed and appropriate,

and/or provide some other approach to facilitate decision-making under uncertainty.

- b. It is expected that the research team will also provide indicators of uncertainty (qualitative and/or quantitative).
5. **Provide an interactive, publicly available, open-source data platform** that facilitates data download, supports analytical approaches developed in response to stakeholder needs, and provides interactive visualizations of climate data.
- a. The development of the data platform will be driven by needs identified through stakeholder engagement and by analytics developed by climate scientists.
 - b. The developers of the data platform funded under this grant will have the option of building on architecture and design associated with the current version of Cal-Adapt, or building a new architecture.
 - c. Development of data platform visualizations should be informed by energy stakeholder needs through engagement and should consider how tools associated with the prior generation of Cal-Adapt were used.
 - d. Development of data platform visualizations will also be closely coordinated with stakeholder engagement efforts led by Strategic Growth Council and the Governor's Office of Planning and Research (OPR) to elicit data-related needs of local governments, tribal communities, and non-energy researchers.

Organizational Structure of Research

The **proposed research will be organized as either one or two distinct, funded efforts**. In either case, the research will require that the awardee provide for strong project management and internal coordination. Potential organizational structure for research may include:

One large grant delivering:

1. Downscaled climate projections;
2. A subset of priority projections recommended for use in the Fifth Assessment;
3. Stakeholder engagement to clearly identify how climate projections can be used to support energy-related research and adaptation;
4. Analytically rigorous approaches to meeting data needs elicited through stakeholder engagement based on the projections developed by this research grant AS WELL AS other peer-reviewed downscaled climate projections that align with the requirements of the Fifth Assessment; and
5. An interactive, publicly available data platform that will coordinate with Cal-Adapt.org to provide access to Fifth Assessment scenarios and analytics.

OR

Two separate grants, including:

- 1. DEVELOPMENT OF CLIMATE PROJECTIONS FOR CALIFORNIA AND IDENTIFICATION OF PRIORITY PROJECTIONS GRANT**, which would deliver:
 - a. Downscaled climate projections; and
 - b. Subset of priority projections recommended for use in the Fifth Assessment.

- 2. ENGAGEMENT, ANALYTICS AND DATA PLATFORM GRANT**, which would deliver:
 - a. Energy sector stakeholder engagement to clearly identify how climate projections can be used to foster adaptation;
 - b. Analytically rigorous approaches to meeting data needs elicited through stakeholder engagement based on the projections developed by this research grant as well as other peer-reviewed downscaled climate projections that align with the requirements of the Fifth Assessment; and
 - c. An interactive, publicly available, open-source data platform that will coordinate with, and eventually supersede, the existing Cal-Adapt.org.

Questions

CEC staff is seeking input from stakeholders, including IOUs and the climate change research community, on the scope and structure of the above proposed research goals. Specifically, staff seeks responses and comments on the following questions:

Organizational Questions

1. What factors should be considered in the decision of whether to fund one single effort or two smaller efforts?
2. How can we explicitly incentivize the role of strong project management to ensure strong internal coordination (and coordination between grants, if two grants are funded) and successful design, application, and stakeholder adoption of data products?

Scope Questions

3. EPIC has funded an ongoing project (EPC-16-063) to develop hybrid downscaling methodologies, but the current GFO does not require that methodology to be used for the Fifth Assessment. What criteria or metrics should the GFO identify for evaluating applicants' proposed downscaling methods?
4. Ideally, the project(s) from this GFO will generate priority projections that represent a multiplicity of possible futures and constrain uncertainty by preferential model selection. We would like to open the floor for discussion of this goal and considerations that the GFO language should reflect.
5. What ongoing work to cull models contributing to CMIP6 for California should the proposed research be coordinating with? How should the proposed grant be scoped to leverage and coordinate existing or planned efforts?
6. As California increasingly strives to integrate projected climate change into infrastructure design and planning, understanding the likelihood of possible

outcomes and uncertainty of projections is increasingly important. We would like to open the floor for discussion of considerations that the GFO language should reflect regarding *quasi-probabilistic interpretation of projections* and *indicators of uncertainty*.

Additional Questions for Consideration

7. Practitioners of climate change risk management may preferentially use projections that perform well in the historical period for their area of interest, based on available observations.
 - a. Should the Fifth Assessment require bias correction to help meet this desire?
 - b. How should the desire for historically validated projections play in to the development of priority projections and/or guidance for usage of projections?
8. Climate change vulnerability assessment and risk management can be approached through a top-down, scenario-driven framework as well as through a bottom-up, robust decision-making framework. Ideally, the Fifth Assessment will include both top-down and bottom-up approaches that are harmonized so that different studies' results can be integrated and used to deepen our understanding of risks and resilience options.
 - a. Are there considerations regarding a desire to harmonize and integrate top-down and bottom-up approaches that should be articulated in the GFO language?

Public Comment

Oral comments: Staff will accept oral comments during the workshop. Comments may be limited to five minutes per speaker and one speaker per organization. Any comments may become part of the public record for this proceeding.

Written comments: Written comments must be submitted to the Docket Unit by **5:00 p.m. on December 30, 2019**. Written comments will also be accepted at the workshop; however, the CEC may not have time to review them before the conclusion of the meeting.

Written and oral comments, attachments, and associated contact information (e.g. address, phone number, email address) become part of the viewable public record. This information may also become available via any Internet search engine.

The CEC encourages use of its electronic commenting system. Visit our [Research Idea Exchange Docket](#): <https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=19-ERDD-01>, which links to the comment page for this docket. Select or enter a proceeding to be taken to the "Add Comment" page. Enter your contact information and a comment title describing the subject of your comment(s). Comments may be included in the

“Comment Text” box or attached in a downloadable, searchable Microsoft® Word (.doc, .docx) or Adobe® Acrobat® (.pdf) file. Maximum file size is 10 MB.

Written comments may also be submitted by email. Include the docket number 19-ERDD-01 and Workshop on Hourly Temperature Data on Cal-Adapt in the subject line and send to docket@energy.ca.gov.

If preferred, a paper copy may be submitted to:

California Energy Commission
Docket Unit, MS-4
Re: Docket No. 19-ERDD-01
1516 Ninth Street
Sacramento, CA 95814-5512

Public Advisor and Other Commission Contacts

The CEC’s Public Advisor’s Office provides the public assistance in participating in CEC proceedings. For information on how to participate in this forum, please contact Public Advisor, Noemí O. Gallardo, at publicadvisor@energy.ca.gov, (916) 654-4489 or toll free at (800) 822-6228.

Please direct requests for reasonable accommodation to Yolanda Rushin at yolanda.rushin@energy.ca.gov or (916) 654-4310 at least five days in advance.

Media inquiries should be directed to the Media and Public Communications Office at mediaoffice@energy.ca.gov or (916) 654-4989.

Questions on the subject matter of this meeting should be directed to Susan Wilhelm susan.wilhelm@energy.ca.gov or (916) 327-1545.

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Availability of Documents

Documents and presentations for this meeting will be available at the [docket 19-ERDD-01](https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-ERDD-01):
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-ERDD-01>.

Dated: November 26, 2019, at Sacramento, California

Laurie ten Hope
Deputy Director
Energy Research and Development Division

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