

DOCKETED	
Docket Number:	19-ERDD-01
Project Title:	Research Idea Exchange
TN #:	232290
Document Title:	Summary & Next Steps from CEC Staff Workshop Regarding Forthcoming Climate Scenarios & Analytics Solicitation
Description:	CEC staff conducted a workshop on Dec 16, 2019, to seek input on a forthcoming solicitation regarding climate scenarios and analytics. The following document summarizes written and oral comments received in the workshop and provides next steps
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Submission Date:	3/3/2020 2:21:05 PM
Docketed Date:	3/3/2020

Summary and Next Steps from California Energy Commission Staff Workshop: Request for Comments on Forthcoming Solicitation Regarding Climate Scenarios and Analytics

California Energy Commission (CEC) staff conducted a workshop on December 16, 2019, to seek input from stakeholders on a forthcoming solicitation regarding climate scenarios and analytics to support electricity sector vulnerability assessment and resilient planning.

The workshop was organized to:

1. Present initial ideas on the scope and structure of an EPIC-funded research solicitation, planned for release in the second quarter of 2020.
2. Offer stakeholders the opportunity to provide public input regarding the scope and structure of proposed research, as well as processes to facilitate production of actionable research.

For more details, please see:

- The Staff Workshop notice and a recording of the workshop located [here](https://ww2.energy.ca.gov/research/notices/#12162019): <https://ww2.energy.ca.gov/research/notices/#12162019>
- The docket containing public comments located [here](https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-ERDD-01): <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-ERDD-01>
Please note that the docket linked above includes public comments on a number of topics. A list of public comments responsive to the December 16, 2019, workshop can be found at the end of this document.

Attendees were presented with eight questions concerning three key aspects of the solicitation, namely:

1. The organization of the proposed research,
2. The scope of the proposed research, and
3. Additional considerations related to implementation of the proposed research.

Feedback and technical input were received from investor-owned utilities (IOUs), the academic research community, national laboratories and research programs, federal agencies, state agencies, industry, and private consultants.

1. Organization of Proposed Research

Staff questions focused on the organization of the proposed research (for example, whether one or two funded efforts) and strategies to incentivize project management and coordination to efforts internal and external to the funded project. Discussion at the workshop, as well as several comments submitted to the docket, articulated that supporting multiple research efforts may be preferable, and that if a single effort combining the broad scope of the overall solicitation were funded, the CEC would risk being forced to choose between applicants that were not best in class at one or more components of the Grant Funding Opportunity (GFO). Another perspective voiced at the workshop and through written public comment was that CEC could allow applicants to

address one or both of the possible research areas, and an example of such a solicitation (released by NASA's Science Mission Directorate Applied Sciences Program) was provided.

Stakeholder feedback was taken into consideration in the proposed decision that two separate research efforts will be funded. One group will focus specifically on **development of downscaled climate projections and identification of priority projections**. The other group will entail **development of a data platform and analytics to inform energy sector resilience**. Both efforts must be informed by vigorous stakeholder engagement with relevant energy sector stakeholders. Additionally, the two groups will need to coordinate regarding several key items, including transfer of climate projections from the team responsible for generating projections to the team responsible for developing a data platform and analytics that build on those projections.

2. Scope of Proposed Research

Staff questions focused on:

- The criteria or metrics that should be identified for evaluating applicants' proposed downscaling methods, and
- The type of language to be incorporated into the GFO to reflect:
 - The generation of priority projections that represent a multiplicity of possible futures and constrain uncertainty by preferential model selection,
 - The use of terms such as “quasi-probabilistic interpretation of projections” and “indicators of uncertainty,” and
 - Efforts that are culling models contributing to Coupled Model Intercomparison Project Phase 6 for California to ensure coordination across, rather than replication of, ongoing or planned efforts.

Stakeholders' input regarding the scope of proposed research included comments addressing the importance of making available as many downscaled Global Circulation Models and scenarios as possible, the crucial role of downscaling parameters of importance to wildfire behavior, the need to consider extreme events in interpreting models' output, and considerations in communicating uncertainty in a manner that is useful to decision makers. Additionally, stakeholders cautioned against emphasizing an overly small subset of projections, in part due to the risk that data users could falsely attribute greater confidence and/or lesser uncertainty to future projections than is merited.

3. Additional Considerations

Staff questions focused considerations regarding the details of climate projections' performance in the historical period for particular areas of interest and of harmonizing top-down and bottom-up approaches to better understand risk and resilience options. Responses and suggestions will be incorporated into the GFO language where appropriate.

Stakeholders' input regarding these additional considerations addressed the role of bias correction, criteria to consider in validation of models' historical projections, and the

importance of exploring climate resilience through complementary top-down and bottom-up approaches. Additionally, a number of stakeholders commented on the importance of requiring applicants to demonstrate their ability and readiness to work with energy stakeholders and researchers to ensure that methods, models, and definitions of relevant terms are adequate for use.

Additional verbal and written comments expressed concern that the funding amount allocated for this GFO is small compared to the magnitude of investment decisions that will be informed by the climate projections. Staff have taken these comments into consideration, and an additional \$2,000,000 has been allocated to the anticipated solicitation.

CEC staff thank all participants in the staff workshop and public comment period. A full list of docketed comments is below. Staff have reviewed all oral and written comments, which have helped to inform the scope, content, and structure of the anticipated solicitation.

CEC staff are on track to release a solicitation in Q2 2020. At this stage, we anticipate a **solicitation structured in two funded groups as described below:**

Group 1: Development of Climate Projections for California and Identification of Priority Projections (\$1,500,000), which would:

- Produce spatially and temporally comprehensive, downscaled climate projections for California;
- Identify a subset of priority downscaled climate projections for use in California's Fifth Climate Change Assessment (Fifth Assessment), where the priority projections provide a more computationally tractable (reduced) set for researchers to work with; and
- Coordinate with related research efforts that contribute to the Fifth Assessment.

Group 2: Analytics and Data Platform to Facilitate Electricity Sector Adaptation (\$3,500,000), which would deliver:

- Energy sector stakeholder engagement to clearly identify how climate projections can be used to support energy-related research and adaptation;
- Analytical approaches to meeting data needs elicited through stakeholder engagement based on the projections developed by this research grant; and
- An interactive, publicly available data platform that will coordinate with Cal-Adapt.org and its funders to provide access to Fifth Assessment scenarios and analytics.

In addition, **both** Group 1 & 2 applicants **must successfully demonstrate:**

- A skilled, **well-resourced** management team to ensure coordination between the different aspects of the proposed research.
- The capacity for coordination between Group 1 & 2 funded research teams.
- A clearly articulated approach to stakeholder engagement, including dedicated funding and expertise.

List of Public Comments Submitted to the Docket:

Comments can be accessed [here](#):

<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-ERDD-01>

- Todd Hawbaker, TN#231254, 12/16/2019.
- Docket by Susan Wilhelm on behalf of Fred Ipschultz, TN#231300-1, 12/20/2019.
- Docket by Susan Wilhelm on behalf of Fred Ipschultz, TN#231300-2, 12/20/2019.
- Docket by Susan Wilhelm on behalf of Fred Ipschultz, TN#231300-2, 12/20/2019.
- UCLA Center for Climate Science, TN#231303, 12/20/2019.
- Florian Michahelles (Siemens Corporation), TN#231304, 12/23/2019.
- Owen Doherty (Eagle Rock Analytics), TN#231333, 12/30/2019.
- Southern California Edison Company, TN#231340, 12/30/2019.
- Andrew Jones, TN#231344, 12/30/2019.
- Jackie Kendall (SSAI), TN#231345, 12/30/2019.
- David Pierce (University of California, San Diego), TN#231348, 12/30/2019.
- Tom Phillips, TN#231354, 12/31/2019.
- Tapio Schneider, TN#231357, 12/31/2019.
- Pacific Gas & Electric, TN#231389, 1/6/2020.