California Energy Commission
October 08, 2025 Business Meeting
Backup Materials for Eagle Rock Analytics, Inc.

The following backup materials for the above-referenced agenda item are available in this PDF packet as listed below:

1. Proposed Resolution
2. Grant Request Form
3. Scope of Work

[PROPOSED]

RESOLUTION NO: 25-1008-XX

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION: Eagle Rock Analytics, Inc.

RESOLVED, that the State Energy Resources Conservation and Development Commission (CEC) adopts the staff CEQA findings contained in the Agreement or Amendment Request Form (as applicable); and

RESOLVED, that the CEC approves agreement EPC-25-034 with Eagle Rock Analytics, Inc. for a $2,800,000 grant. This project will develop participant-informed, easy-to-use tools on the Cal-Adapt: Data Explorer, which is a web application that makes high-resolution climate projections and quality-controlled historical weather data publicly available to inform electricity sector resilience planning; and

FURTHER BE IT RESOLVED, that the Executive Director or their designee shall execute the same on behalf of the CEC.

CERTIFICATION

The undersigned Secretariat to the CEC does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the CEC held on October 08, 2025.

AYE:
NAY:
ABSENT:
ABSTAIN:

Dated:

_____
Kim Todd
Secretariat

STATE OF CALIFORNIA
CALIFORNIA ENERGY COMMISSION

CEC-270 (Revised 01/2024)

GRANT REQUEST FORM (GRF)

A. New Agreement Number

IMPORTANT: New Agreement # to be completed by Contracts, Grants, and Loans Office.

New Agreement Number: EPC-25-034

B. Division Information

1. Division Name: ERDD
2. Agreement Manager: Martine Schmidt-Poolman
3. MS-:43
4. Phone Number: 916-776-0808

C. Recipient's Information

1. Recipient's Legal Name: Eagle Rock Analytics, Inc.
2. Federal ID Number: 88-4422477

D. Title of Project

Title of project: Cal-Adapt: Data Explorer - Supporting California's Ambitious Energy Transformation

E. Term and Amount

1. Start Date: 11/3/2025
2. End Date: 3/31/2029
3. Amount: $2,800,000.00

F. Business Meeting Information

1. Are the ARFVTP agreements $75K and under delegated to Executive Director? No
2. The Proposed Business Meeting Date: 10/08/2025
3. Consent or Discussion? Discussion
4. Business Meeting Presenter Name: Aryana Sherzai
5. Time Needed for Business Meeting: 5 minutes.
6. The email subscription topic is: Energy Research and Development.

Agenda Item Subject and Description:

Eagle Rock Analytics, Inc. Proposed resolution approving agreement EPC-25-034 with Eagle Rock Analytics, Inc. for a $2,800,000.00 grant, and adopting staff's recommendation that this action is exempt from CEQA. This agreement will develop participant-informed, easy-to-use tools on the Cal-Adapt: Data Explorer, which is a web application that makes high-resolution climate projections and quality-controlled historical weather data publicly available to inform electricity sector resilience planning. (EPIC funding) Contact: Aryana Sherzai

G. California Environmental Quality Act (CEQA) Compliance

1. **Is Agreement considered a "Project" under CEQA?**
   Yes

   If yes, skip to question 2.

   If no, complete the following (PRC 21065 and 14 CCR 15378) and explain why Agreement is not considered a "Project":

2. If Agreement is considered a "Project" under CEQA answer the following questions.

a) Agreement **IS** exempt?

Yes

Statutory Exemption?
No

If yes, list PRC and/or CCR section number(s) and separate each with a comma. If no, enter "None" and go to the next question.

PRC section number: None

CCR section number: None

Categorical Exemption?
Yes

If yes, list CCR section number(s) and separate each with a comma. If no, enter "None" and go to the next question.

CCR section number: Cal. Code Regs., tit. 14, § 15306 ;

Common Sense Exemption? 14 CCR 15061 (b) (3)
No

If yes, explain reason why Agreement is exempt under the above section. If no, enter "Not applicable" and go to the next section.

Cal. Code Regs., tit. 14, §15306 consists of basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource. This project is a computer-based project to develop Open Data Support for Climate Resilience in California's Electricity Sector, including the advanced development of the Cal-Adapt online interface. Cal-Adapt: Data Explorer is a web application that makes climate projections and weather data publicly available to inform electricity sector resilience planning. This project is entirely online and does not have the potential to cause serious or major disturbances to an environmental resource. This project will not have a significant effect on the environment therefore it is exempt under California Code of Regulations, title 14, section 15306.
The project does not involve impacts on any particularly sensitive environment; will not impact an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies; does not involve any cumulative impacts of successive projects of the same type in the same place that might be considered significant; does not involve unusual circumstances that might have a significant effect on the environment; will not result in damage to scenic resources within a highway officially designated as a state scenic highway; the project site is not included on any list compiled pursuant to Government Code section 65962.5; and the project will not cause a substantial adverse change in the significance of a historical resource. Therefore, none of the exceptions to categorical exemptions listed in CEQA Guidelines section 15300.2 apply to this project, and this project will not have a significant effect on the environment.

b) Agreement **IS NOT** exempt.
IMPORTANT: consult with the legal office to determine next steps.

No

If yes, answer yes or no to all that applies. If no, list all as “no” and “None” as “yes”.

Additional Documents	Applies
Initial Study	No
Negative Declaration	No
Mitigated Negative Declaration	No
Environmental Impact Report	No
Statement of Overriding Considerations	No
None	Yes

H. Is this project considered “Infrastructure”?

No

I. Subcontractors

List all Subcontractors listed in the Budget (s) (major and minor). Insert additional rows if needed. If no subcontractors to report, enter “No subcontractors to report” and “0” to funds. **Delete** any unused rows from the table.

Subcontractor Legal Company Name	CEC Funds	Match Funds
Spatial Informatics Group LLC	$ 100,000	**$**0
The Regents of the University of California as Management and Operating Contractor for the Ernest Orlando Lawrence Berkeley National Laboratory	$ 130,000	**$**0

J. Vendors and Sellers for Equipment and Materials/Miscellaneous

List all Vendors and Sellers listed in Budget(s) for Equipment and Materials/Miscellaneous. Insert additional rows if needed. If no vendors or sellers to report, enter “No vendors or sellers to report” and “0” to funds. **Delete** any unused rows from the table.

Vendor/Seller Legal Company Name	CEC Funds	Match Funds
Sowing Change Strategies LLC	**$**70,000	**$**0
TBD - UI/UX Engineering (Microsite Development)	**$**75,000	**$**0
TBD - Website Design	**$**75,000	**$**0
Amazon Web Services, Inc.	**$**44,144	**$**986,624

K. Key Partners

List all key partner(s). Insert additional rows if needed. If no key partners to report, enter "No key partners to report." **Delete** any unused rows from the table.

Key Partner Legal Company Name
No key partners to report

L. Budget Information

Include all budget information. Insert additional rows if needed. If no budget information to report, enter "N/A" for "Not Applicable" and "0" to Amount. **Delete** any unused rows from the table.

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
EPIC	24-25	301.001L	$ 2,800,000

TOTAL Amount: $ 2,800,000

R&D Program Area: ESB: EA

Explanation for "Other" selection Not applicable

Reimbursement Contract #: Not applicable

Federal Agreement #: 101

M. Recipient's Contact Information

1. Recipient's Administrator/Officer

Name: Janell Hamman

Address: 3669 57th St.

City, State, Zip: Sacramento, CA 95820

Phone: 916-936-0199

E-Mail: Janell.hamman@eaglerockanalytics.com

2. Recipient's Project Manager

Name: Mark Koenig

Address: 3669 57th St.

City, State, Zip: Sacramento, CA 95820

Phone: 916-936-0199

E-Mail: mark.koenig@eaglerockanalytics.com

N. Selection Process Used

There are three types of selection process. List the one used for this GRF.

Selection Process	Additional Information
Competitive Solicitation #	GFO-24-306

First Come First Served Solicitation #	Not applicable
Other	Not applicable

O. Attached Items

1. List all items that should be attached to this GRF by entering “Yes” or “No”.

Item Number	Item Name	Attached
1	Exhibit A, Scope of Work/Schedule	Yes
2	Exhibit B, Budget Detail	Yes
3	CEC 105, Questionnaire for Identifying Conflicts	Yes
4	Recipient Resolution	No
5	Awardee CEQA Documentation	No

Approved By

Individuals who approve this form must enter their full name and approval date in the MS Word version.

Agreement Manager: Martine Schmidt-Poolman

Approval Date: 8/25/2025

Branch Manager: Alex Horangic

Approval Date: 8/29/2025

Director: Jonah Steinbuck Delegated to Branch Manager

Approval Date: 8/29/2025

Exhibit A
Scope of Work
Eagle Rock Analytics, Inc.

I. TASK AND ACRONYM/TERM LISTS

A. Task List

Task #	CPR[1]	Task Name
1		General Project Tasks
2		User, Community, and Scientific Engagement
3		Developing New Tools, Visualization, and Novel Capabilities for California's Electricity Sector to Achieve Ambitious Climate Goals and Respond to Ongoing Policy Development & Rulemaking
4	X	Web Design and Development
5		User Training, Support, and Outreach
6		Management of Cal-Adapt: Data Explorer and Coordination with Cal-Adapt: Enterprise
7		Evaluation of Project Benefits
8		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
Advanced user	Advanced users are able to use analytics and computer code to customize climate science informed workflows and processes to solve problems using resources provided from the Cal-Adapt Enterprise.
AE	Cal-Adapt Analytics Engine
AI/ML	Artificial Intelligence / Machine Learning
API	Application Programming Interface (e.g. Python Fast API)
AWS	Amazon Web Services – serves as the basis for data processing, data storage and on demand compute to serve tools and Cal-Adapt.org website
CAM	Commission Agreement Manager
Cal-Adapt: Analytics Engine	Cloud based data repository and computational environment which allow users access to tools and capacity to process climate data
Cal-Adapt Data Catalog	The structure in which all climate data for Cal-Adapt Enterprise is stored, described and made accessible
Cal-Adapt: Data Explorer	The components of Cal-Adapt which include web based applications, tools, visualizations and online functions to use climate data
Cal-Adapt Enterprise	Refers to the collective of all Cal-Adapt components, namely Analytics Engine, Data Explorer, Data Catalog and Cal-Adapt.org
California's Fifth Climate Change Assessment	State-led assessment of climate change impacts to California, completed approximately every five years. Data to be utilized within this work is associated with this project, also known as "Fifth Assessment."
CAO	Commission Agreement Officer
CEC	California Energy Commission
ClimaKitAE	CLIMate toolKIT for Analytics Engine: an open-source Python code library, developed for Cal-Adapt: Analytics Engine.

[1] Please see subtask 1.3 in Part III of the Scope of Work (General Project Tasks) for a description of Critical Project Review (CPR) Meetings.

Acronym/Term	Meaning
Co-Production	A facilitated engagement strategy in which subject matter experts, scientists, and developers collectively generate a workplan.
CPR	Critical Project Review
DE	Cal-Adapt: Data Explorer
EPIC	Electric Program Investment Charge
Group 2	Group 2 of GFO-24-306
LLM	Large Language Model, a machine learning model that processes and generates text
Legacy Cal-Adapt	The previous version of the Cal-Adapt web application, including visualizations and the website, developed from 2011-2021 with previous generation of climate data.
TAC	Technical Advisory Committee
UI/UX	User Interface/ User Experience
User	User, or alternatively *userbase*, refers to people who use aspects of the Cal-Adapt: Data Explore to adapt and respond to changes in climate and the energy grid and in turn actualize benefits to California ratepayers from investments in the Cal-Adapt Enterprise.
Working Group Member	A user, or a group of users within the *userbase*, that has a dedicated contributing role in the Co-Production (*see Co-Production*) of innovative new tools for Cal-Adapt: Data Explorer.

II. PURPOSE OF AGREEMENT, PROBLEM/SOLUTION STATEMENT, AND GOALS AND OBJECTIVES

A. Purpose of Agreement

The purpose of this Agreement is to fund the development of participant-informed, easy-to-use tools on the Cal-Adapt: Data Explorer, which is a web application that makes high-resolution climate projections and quality-controlled historical weather data publicly available to inform electricity sector resilience.

B. Problem/ Solution Statement

Problem

The need to incorporate climate change information (e.g. data, projections, forecasts) into electricity systems and community planning is growing as extreme temperatures, wildfires, atmospheric rivers, and other climate impacts increasingly disrupt service, damage infrastructure, and strain peak demand management. Enhancing California's energy resilience requires using the best available climate data in open, user-friendly, visualization and modeling tools that help industry partners assess and prepare for climate risks. Historically, Cal-Adapt has served a key role in making such tools available for California's energy sector.

In response to advances in state policy, more frequent climate disasters, and advances in climate sciences, the capacity of California's electricity sector to use climate information has advanced. While user capacity for use of climate information has advanced, the web tools developed within Cal-Adapt have not been updated. More nimble tools are needed to respond to ongoing climate disasters and extreme weather with useful information in near real time.

Climate data needs to become more accessible, empowering groups of users who have not previously been able to access cutting edge climate information. Insight into multi-factor climate impacts needs to be provided, rather than single climate variables. California's energy sector is insisting on deep, climate and policy literate help. Data and technical support for ongoing advances of Artificial Intelligence and machine learning (AI/ML) in the electricity sector need to be provided, driven by progress in data science and climate research.

Solution

The Cal-Adapt Enterprise is evolving to meet the growing needs of users who seek reliable, accessible, and advanced climate information to inform critical policy, planning, and adaptation decisions. This project addresses the gap between users' growing climate data literacy and their limited capacity to perform custom analyses by reimagining Cal-Adapt's development process and user engagement strategy. By modernizing Cal-Adapt's tools, website, and workflows, the project will provide an unprecedented combination of intuitive guidance for newer users and flexible, policy-relevant insights for advanced users — helping communities and agencies overcome barriers to action in an increasingly complex energy and climate landscape.

Our approach separates user engagement from traditional training and support, allowing us to focus on understanding the real-world needs of users without burdening them with technical feedback or operational requests. Scientific discoveries and novel tool capabilities will be developed through active co-production with key users, while support efforts will focus on helping users interpret climate outcomes rather than navigating software features. The project will maintain proven help approaches while adding office hours, a ticketing system, and tailored user assistance while creating a unified set of guidance materials aimed at increasing accessibility for all users, especially those engaging with Cal-Adapt's Data Explorer.

The Cal-Adapt.org website will undergo a thorough update that emphasizes professional-grade User Interface/ User Experience (UI/UX) design principles, consistent tool behavior across the platform, and seamless connectivity between the Data Explorer (DE) and the Analytics Engine (AE). Tools will allow users to explore climate data visually and automatically export the underlying code for use in AE or the open-source ClimaKitAE Python package, offering transparency, reproducibility, and advanced flexibility without requiring programming knowledge. This integrated design philosophy will prepare Cal-Adapt to remain a cornerstone of California's climate data infrastructure as the use of artificial intelligence and machine learning grows, ensuring that data and tools are formatted for both human interpretation and automated model consumption.

This project will overcome key developmental, technological, and statistical barriers that limit the current ("Fourth Assessment") version of Cal-Adapt from addressing the evolving needs of users, especially in the context of a more complex electric grid and rising climate risks. By combining long-term, policy-focused tool development with rapid responses to emerging science, and by reinvigorating existing capabilities with new data and user-informed context, Cal-Adapt will empower industry partners to confidently turn climate questions into actionable solutions. These advancements will directly support the State of California's statutory climate adaptation and energy planning goals by improving the accessibility, usability, and scientific integrity of statewide climate resources.

C. Goals and Objectives of the Agreement

Exhibit A
Scope of Work
Eagle Rock Analytics, Inc.

Agreement Goals

The goal of this Agreement is to fund the development of the Cal-Adapt: Data Explorer to provide web-based access to climate data and information in a way that meets the evolving needs of California's energy sector.

Ratepayer Benefits:[2] This Agreement will result in the ratepayer benefits of improved reliability and reduced costs for ratepayers. The Cal-Adapt: Data Explorer enables users to develop novel insight into the relationship between climate, weather, and the grid, with the goal of improving electricity grid reliability through supporting development of adaptation plans and design standards for grid assets to withstand these novel climate events. This work will advance California's capacity to manage and operate a robust, lower carbon grid that relies upon generation capacity, which is adapted to more extreme weather conditions, reducing costs for ratepayers.

Technological Advancement and Breakthroughs:[3] This Agreement will lead to technological advancement and breakthroughs to overcome barriers to the achievement of the State of California's statutory energy goals by advancing the use of climate science in California's energy sector through reimagining how users' access, explore, and apply climate data. Through a unified design philosophy, Cal-Adapt will connect tools, data, and educational resources to guide users to shift their expectations from discovery to decision-making. New tools will deliver multi-layered, co-occurring climate hazard information tailored to real-world planning needs, while improved UI/UX design and modular development will shorten the timeline from user need to deployed solution — ensuring tools are both scientifically rigorous and easy to apply.

This project will reshape user engagement to prioritize co-production with energy-sector partners, researchers, and policymakers, ensuring development remains responsive to emerging science and evolving resilience challenges. By enhancing transparency, interoperability, and preparing Cal-Adapt for future integration with AI and machine learning workflows, this work will enable California's energy planners and communities to access actionable, high-quality climate information, directly supporting the state's statutory energy and climate adaptation goals.

Agreement Objectives

The objectives of this Agreement are to:

- Design a modern approach for, and update, Cal-Adapt: Data Explorer that is adaptable to evolving science, new datasets, user needs, and state policy priorities.
- Apply rigorous scientific and statistical quality assurance and quality control (QA/QC) standards to all tools and data layers.
- Explore AI/ML applications to enhance user support and resource discovery within the Cal-Adapt platform, including potential future use of large language models (LLMs).

[2] California Public Resources Code, Section 25711.5(a) requires projects funded by the Electric Program Investment Charge (EPIC) to result in ratepayer benefits. The California Public Utilities Commission, which established the EPIC in 2011, defines ratepayer benefits as greater reliability, lower costs, and increased safety (See CPUC "Phase 2" Decision 12-05-037 at page 19, May 24, 2012, http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF).

[3] California Public Resources Code, Section 25711.5(a) also requires EPIC-funded projects to lead to technological advancement and breakthroughs to overcome barriers that prevent the achievement of the state's statutory and energy goals.

- Establish a strong user support system (e.g., office hours, ticketing systems, webinars, and written guidance) to focus on interpreting outcomes rather than just tool usage.
- Facilitate co-production of tools with key user groups to ensure solutions are policy-relevant, user-informed, and targeted to real-world planning and adaptation needs.
- Sustain a reliable, transparent, and accessible Cal-Adapt web presence (e.g., through content such as wikis, blogs, notebooks, data storage, and documentation)

III. TASK 1 GENERAL PROJECT TASKS

PRODUCTS

Subtask 1.1 Products

The goal of this subtask is to establish the requirements for submitting project products (e.g., reports, summaries, plans, and presentation materials). Unless otherwise specified by the Commission Agreement Manager (CAM), the Recipient must deliver products as required below by the dates listed in the **Project Schedule (Part V).** All products submitted which will be viewed by the public, must comply with the accessibility requirements of Section 508 of the federal Rehabilitation Act of 1973, as amended (29 U.S.C. Sec. 794d), and regulations implementing that act as set forth in Part 1194 of Title 36 of the Federal Code of Regulations**.** All technical tasks should include product(s). Products that require a draft version are indicated by marking **"(draft and final)"** after the product name in the "Products" section of the task/subtask. If "(draft and final)" does not appear after the product name, only a final version of the product is required. With respect to due dates within this Scope of Work, **"days"** means working days.

The Recipient shall:

<u>For products that require a draft version, including the Final Report Outline and Final Report</u>

- Submit all draft products to the CAM for review and comment in accordance with the Project Schedule (Part V). The CAM will provide written comments to the Recipient on the draft product within 15 days of receipt, unless otherwise specified in the task/subtask for which the product is required.
- Consider incorporating all CAM comments into the final product. If the Recipient disagrees with any comment, provide a written response explaining why the comment was not incorporated into the final product.
- Submit the revised product and responses to comments within 10 days of notice by the CAM, unless the CAM specifies a longer time period, or approves a request for additional time.

<u>For products that require a final version only</u>

- Submit the product to the CAM for acceptance. The CAM may request minor revisions or explanations prior to acceptance.

<u>For all products</u>

- Submit all data and documents required as products in accordance with the following:

<u>Instructions for Submitting Electronic Files and Developing Software</u>:

  - **Electronic File Format**

- Submit all data and documents required as products under this Agreement in an electronic file format that is fully editable and compatible with the California Energy Commission's (CEC) software and Microsoft (MS)-operating computing platforms, or with any other format approved by the CAM. Deliver an electronic copy of the full text of any Agreement data and documents in a format specified by the CAM, such as memory stick.

The following describes the accepted formats for electronic data and documents provided to the CEC as products under this Agreement, and establishes the software versions that will be required to review and approve all software products:

- Data sets will be in MS Access or MS Excel file format (version 2007 or later), or any other format approved by the CAM.
- Text documents will be in MS Word file format, version 2007 or later.
- Project management documents will be in Microsoft Project file format, version 2007 or later.

- **Software Application Development**

Use the following standard Application Architecture components in compatible versions for any software application development required by this Agreement (e.g., databases, models, modeling tools), unless the CAM approves other software applications such as open source programs:

- Microsoft ASP.NET framework (version 3.5 and up). Recommend 4.0.
- Microsoft Internet Information Services (IIS), (version 6 and up) Recommend 7.5.
- Visual Studio.NET (version 2008 and up). Recommend 2010.
- C# Programming Language with Presentation (UI), Business Object and Data Layers.
- SQL (Structured Query Language).
- Microsoft SQL Server 2008, Stored Procedures. Recommend 2008 R2.
- Microsoft SQL Reporting Services. Recommend 2008 R2.
- XML (external interfaces).

Any exceptions to the Electronic File Format requirements above must be approved in writing by the CAM. The CAM will consult with the CEC's Information Technology Services Branch to determine whether the exceptions are allowable.

MEETINGS

Subtask 1.2 Kick-off Meeting

The goal of this subtask is to establish the lines of communication and procedures for implementing this Agreement.

The Recipient shall:

- Attend a "Kick-off" meeting with the CAM, and other CEC staff relevant to the Agreement. The Recipient's Project Manager and any other individuals deemed necessary by the CAM or the Project Manager shall participate in this meeting. The administrative and technical aspects of the Agreement will be discussed at the meeting. Prior to the meeting, the CAM will provide an agenda to all potential meeting participants. The meeting may take place in person or by electronic conferencing (e.g., Teams, Zoom), with approval of the CAM.

The Kick-off meeting will include discussion of the following:
- The CAM's expectations for accomplishing tasks described in the Scope of Work;
- An updated Project Schedule;
- Terms and conditions of the Agreement;
- Invoicing and auditing procedures;
- Travel;
- Equipment purchases;
- Administrative and Technical products (subtask 1.1);
- CPR meetings (subtask 1.3);
- Monthly Calls (subtask 1.5)
- Quarterly Progress reports (subtask 1.6)
- Final Report (subtask 1.7)
- Match funds (subtask 1.8);
- Permit documentation (subtask 1.9);
- Subawards(subtask 1.10);
- Technical Advisory Committee meetings (subtasks 1.11 and 1.12);
- Agreement changes;
- Performance Evaluations; and
- Any other relevant topics.

- Provide *Kick-off Meeting Presentation* to include but not limited to:
  - Project overview (i.e. project description, goals and objectives, technical tasks, expected benefits, etc.)
  - Project schedule that identifies milestones
  - List of potential risk factors and hurdles, and mitigation strategy

- Provide an *Updated Project Schedule, Match Funds Status Letter,* and *Permit Status Letter*, as needed to reflect any changes in the documents.

The CAM shall:
- Designate the date and location of the meeting.
- Send the Recipient a *Kick-off Meeting Agenda*.

Recipient Products:
- Kick-off Meeting Presentation
- Updated Project Schedule *(if applicable)*
- Match Funds Status Letter (subtask 1.7) *(if applicable)*
- Permit Status Letter (subtask 1.8) *(if applicable)*

CAM Product:
- Kick-off Meeting Agenda

Subtask 1.3 Critical Project Review (CPR) Meetings

The goal of this subtask is to determine if the project should continue to receive CEC funding, and if so whether any modifications must be made to the tasks, products, schedule, or budget. CPR meetings provide the opportunity for frank discussions between the CEC and the Recipient. As determined by the CAM, discussions may include project status, challenges, successes, advisory group findings and recommendations, final report preparation, and

progress on technical transfer and production readiness activities (if applicable). Participants will include the CAM and the Recipient and may include the CAO and any other individuals selected by the CAM to provide support to the CEC.

CPR meetings generally take place at key, predetermined points in the Agreement, as determined by the CAM and as shown in the Task List on page 1 of this Exhibit. However, the CAM may schedule additional CPR meetings as necessary. The budget may be reallocated to cover the additional costs borne by the Recipient, but the overall Agreement amount will not increase. CPR meetings generally take place at the CEC, but they may take place at another location, or may be conducted via electronic conferencing (e.g., WebEx) as determined by the CAM.

The Recipient shall:

- Prepare and submit a *CPR Report* for each CPR meeting that: (1) discusses the progress of the Agreement toward achieving its goals and objectives; and (2) includes recommendations and conclusions regarding continued work on the project.
- Attend the CPR meeting.
- Present the CPR Report and any other required information at each CPR meeting.

The CAM shall:

- Determine the location, date, and time of each CPR meeting with the Recipient's input.
- Send the Recipient a *CPR Agenda* with a list of expected CPR participants in advance of the CPR meeting. If applicable, the agenda may include a discussion of match funding and permits.
- Conduct and make a record of each CPR meeting. Provide the Recipient with a schedule for providing a Progress Determination on continuation of the project.
- Determine whether to continue the project, and if so whether modifications are needed to the tasks, schedule, products, or budget for the remainder of the Agreement. A determination of unsatisfactory progress This may result in project delays, including a potential Stop Work Order, while the CEC determines whether the project should continue.
- Provide the Recipient with a *Progress Determination* on continuation of the project, in accordance with the schedule. The Progress Determination may include a requirement that the Recipient revise one or more products.

Recipient Products:

- CPR Report(s)

CAM Products:

- CPR Agenda(s)
- Progress Determination

Subtask 1.4 Final Meeting

The goal of this subtask is to complete the closeout of this Agreement.

The Recipient shall:

- Meet with CEC staff to present project findings, conclusions, and recommendations. The final meeting must be completed during the closeout of this Agreement. This meeting will be attended by the Recipient and CAM, at a minimum. The meeting may occur in person or by

electronic conferencing (e.g., WebEx), with approval of the CAM.

The technical and administrative aspects of Agreement closeout will be discussed at the meeting, which may be divided into two separate meetings at the CAM's discretion.

- The technical portion of the meeting will involve the presentation of findings, conclusions, and recommended next steps (if any) for the Agreement. The CAM will determine the appropriate meeting participants.
- The administrative portion of the meeting will involve a discussion with the CAM of the following Agreement closeout items:
  - Disposition of any procured equipment.
  - The CEC's request for specific "generated" data (not already provided in Agreement products).
  - Need to document the Recipient's disclosure of "subject inventions" developed under the Agreement.
  - "Surviving" Agreement provisions such as repayment provisions and confidential products.
  - Final invoicing and release of retention.

- Prepare a *Final Meeting Agreement Summary* that documents any agreement made between the Recipient and Commission staff during the meeting.
- Prepare a *Schedule for Completing Agreement Closeout Activities*.
- Provide copies of *All Final Products* organized by the tasks in the Agreement.

Products:

- Final Meeting Agreement Summary *(if applicable)*
- Schedule for Completing Agreement Closeout Activities
- All Final Products

MONTHLY CALLS, REPORTS AND INVOICES

Subtask 1.5 Monthly Calls

The goal of this task is to have calls at least monthly between the CAM and Recipient to verify that satisfactory and continued progress is made towards achieving the objectives of this Agreement on time and within budget.

The objectives of this task are to verbally summarize activities performed during the reporting period, to identify activities planned for the next reporting period, to identify issues that may affect performance and expenditures, to verify match funds are being proportionally spent concurrently or in advance of CEC funds or are being spent in accordance with an approved Match Funding Spending Plan, to form the basis for determining whether invoices are consistent with work performed, and to answer any other questions from the CAM. Monthly calls might not be held on those months when a quarterly progress report is submitted, or the CAM determines that a monthly call is unnecessary.

The CAM shall:

- Schedule monthly calls.
- Provide questions to the Recipient prior to the monthly call.
- Provide call summary notes to Recipient of items discussed during the call.

The Recipient shall:

- Review the questions provided by CAM prior to the monthly call.
- Provide verbal answers to the CAM during the call.

Product:

- Email to CAM concurring with call summary notes.

Subtask 1.6 Quarterly Progress Reports and Invoices

The goals of this subtask are to: (1) periodically verify that satisfactory and continued progress is made towards achieving the project objectives of this Agreement; and (2) ensure that invoices contain all required information and are submitted in the appropriate format.

The Recipient shall:

- Submit a *Quarterly Progress Report* to the CAM. Each progress report must:
  - Summarize progress made on all Agreement activities as specified in the scope of work for the reporting period, including accomplishments, problems, milestones, products, schedule, fiscal status, and an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. Progress reports are due to the CAM the 10th day of each January, April, July, and October. The Quarterly Progress Report template can be found on the ECAMS Resources webpage available at: https://www.energy.ca.gov/media/4691.
- Submit a monthly or quarterly *Invoice* on the invoice template(s) provided by the CAM.

Recipient Products:

- Quarterly Progress Reports
- Invoices

CAM Product:

- Invoice template

Subtask 1.7 Final Report

The goal of this subtask is to prepare a comprehensive Final Report that describes the original purpose, approach, results, and conclusions of the work performed under this Agreement. When creating the Final Report Outline and the Final Report, the Recipient must use the CEC Style Manual provided by the CAM.

Subtask 1.7.1 Final Report Outline

The Recipient shall:

- Prepare a *Final Report Outline* in accordance with the *Energy Commission Style Manual* provided by the CAM.

Recipient Products:

- Final Report Outline (draft and final)

CAM Products:

- Energy Commission Style Manual
- Comments on Draft Final Report Outline
- Acceptance of Final Report Outline

Subtask 1.7.2 Final Report

The Recipient shall:

- Prepare a *Final Report* for this Agreement in accordance with the approved Final Report Outline, Energy Commission Style Manual, and Final Report Template provided by the CAM with the following considerations:
  - Ensure that the report includes the following items, in the following order:
    - Cover page (**required**)
    - Credits page on the reverse side of cover with legal disclaimer (**required**)
    - Acknowledgements page (optional)
    - Preface (**required**)
    - Abstract, keywords, and citation page (**required**)
    - Table of Contents (**required**, followed by List of Figures and List of Tables, if needed)
    - Executive summary (**required**)
    - Body of the report (**required**)
    - References (if applicable)
    - Glossary/Acronyms (If more than 10 acronyms or abbreviations are used, it is required.)
    - Bibliography (if applicable)
    - Appendices (if applicable) (Create a separate volume if very large.)
    - Attachments (if applicable)
- Submit a draft of the Executive Summary to the TAC for review and comment.
- Develop and submit a *Summary of TAC Comments on Draft Final Report* received on the Executive Summary. For each comment received, the Recipient will identify in the summary the following:
  - Comments the Recipient proposes to incorporate.
  - Comments the Recipient does propose to incorporate and an explanation for why.
- Submit a draft of the report to the CAM for review and comment. The CAM will provide written comments to the Recipient on the draft product within 15 days of receipt.
- Incorporate all CAM comments into the *Final Report*. If the Recipient disagrees with any comment, provide a *Written Responses to Comments* explaining why the comments were not incorporated into the final product.
- Submit the revised *Final Report* electronically with any Written Responses to Comments within 10 days of receipt of CAM's Written Comments on the Draft Final Report, unless the CAM specifies a longer time period or approves a request for additional time.

Products:

- Summary of TAC Comments on Draft Final Report
- Draft Final Report

- Written Responses to Comments *(if applicable)*
- Final Report

CAM Product:

- Written Comments on the Draft Final Report

MATCH FUNDS, PERMITS, AND SUBAWARDS

Subtask 1.8 Match Funds

The goal of this subtask is to ensure that the Recipient obtains any match funds planned for this Agreement and applies them to the Agreement during the Agreement term.

While the costs to obtain and document match funds are not reimbursable under this Agreement, the Recipient may spend match funds for this task. Match funds must be identified in writing, and the Recipient must obtain any associated commitments before incurring any costs for which the Recipient will request reimbursement.

The Recipient shall:

- Prepare a *Match Funds Status Letter* that documents the match funds committed to this Agreement. If no match funds were part of the application that led to the CEC awarding this Agreement and none have been identified at the time this Agreement starts, then state this in the letter.

  If match funds were a part of the application that led to the CEC awarding this Agreement, then provide in the letter:
  - A list of the match funds that identifies:
    - The amount of cash match funds, their source(s) (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied.
    - The amount of each in-kind contribution, a description of the contribution type (e.g., property, services), the documented market or book value, the source (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied. If the in-kind contribution is equipment or other tangible or real property, the Recipient must identify its owner and provide a contact name, address, telephone number, and the address where the property is located.
    - If different from the solicitation application, provide a letter of commitment from an authorized representative of each source of match funding that the funds or contributions have been secured.
- At the Kick-off meeting, discuss match funds and the impact on the project if they are significantly reduced or not obtained as committed. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide a *Supplemental Match Funds Notification Letter* to the CAM of receipt of additional match funds.
- Provide a *Match Funds Reduction Notification Letter* to the CAM if existing match funds are reduced during the course of the Agreement. Reduction of match funds may trigger a CPR meeting.

Products:

- Match Funds Status Letter
- Supplemental Match Funds Notification Letter *(if applicable)*
- Match Funds Reduction Notification Letter *(if applicable)*

Subtask 1.9 Permits

The goal of this subtask is to obtain all permits required for work completed under this Agreement in advance of the date they are needed to keep the Agreement schedule on track. Permit costs and the expenses associated with obtaining permits are not reimbursable under this Agreement, with the exception of costs incurred by University of California recipients. Permits must be identified and obtained before the Recipient may incur any costs related to the use of the permit(s) for which the Recipient will request reimbursement.

The Recipient shall:

- Prepare a *Permit Status Letter* that documents the permits required to conduct this Agreement. If no permits are required at the start of this Agreement, then state this in the letter. If permits will be required during the course of the Agreement, provide in the letter:
    - A list of the permits that identifies: (1) the type of permit; and (2) the name, address, and telephone number of the permitting jurisdictions or lead agencies.
    - The schedule the Recipient will follow in applying for and obtaining the permits.

  The list of permits and the schedule for obtaining them will be discussed at the Kick-off meeting (subtask 1.2), and a timetable for submitting the updated list, schedule, and copies of the permits will be developed. The impact on the project if the permits are not obtained in a timely fashion or are denied will also be discussed. If applicable, permits will be included as a line item in progress reports and will be a topic at CPR meetings.
- If during the course of the Agreement additional permits become necessary, then provide the CAM with an *Updated List of Permits* (including the appropriate information on each permit) and an *Updated Schedule for Acquiring Permits*.
- Send the CAM a *Copy of Each Approved Permit*.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the CAM within 5 days. Either of these events may trigger a CPR meeting.

Products:

- Permit Status Letter
- Updated List of Permits *(if applicable)*
- Updated Schedule for Acquiring Permits *(if applicable)*
- Copy of Each Approved Permit *(if applicable)*

Subtask 1.10 Obtain and Execute Subawards and Agreements with Site Hosts

The goals of this subtask are to: (1) procure and execute subrecipients and site host agreements, as applicable, required to carry out the tasks under this Agreement; and (2) ensure that the subrecipients and site host agreements are consistent with the Agreement terms and conditions and the Recipient's own contracting policies and procedures.

The Recipient shall:

- Execute and manage subawards and coordinate subrecipients activities in accordance with the requirements of this Agreement.
- Incorporate this Agreement by reference into each subaward.

- Include any required Energy Commission flow-down provisions in each subaward, in addition to a statement that the terms of this Agreement will prevail if they conflict with the subaward terms.
- Submit a *Subaward Letter* to the CAM describing the subawards and any site host agreement needed or stating that no subawards or site host agreements are required.
- If requested by the CAM, submit a draft of each *Subaward* and any *Site Host Agreement* required to conduct the work under this Agreement.
- If requested by the CAM, submit a final copy of each executed *Subaward* and any *Site Host Agreement*.
- Notify and receive written approval from the CAM prior to adding any new subrecipient (see the terms regarding subrecipient additions in the terms and conditions).

Products:

- Subaward Letter and Site Letter
- Draft Subawards *(if requested by the CAM)*
- Draft Site Host Agreement (*if requested by CAM*)
- Final Subawards *(if requested by the CAM)*
- Final Site Host Agreement *(if requested by the CAM)*

TECHNICAL ADVISORY COMMITTEE

Subtask 1.11 Technical Advisory Committee (TAC)

The goal of this subtask is to create an advisory committee for this Agreement. The TAC should be composed of diverse professionals. The composition will vary depending on interest, availability, and need. TAC members will serve at the CAM's discretion. The purpose of the TAC is to:

- Provide guidance in project direction. The guidance may include scope and methodologies, timing, and coordination with other projects. The guidance may be based on:
  - Technical area expertise;
  - Knowledge of market applications; or
  - Linkages between the Agreement work and other past, present, or future projects (both public and private sectors) that TAC members are aware of in a particular area.
- Review products and provide recommendations for needed product adjustments, refinements, or enhancements.
- Evaluate the tangible benefits of the project to the state of California, and provide recommendations as needed to enhance the benefits.
- Provide recommendations regarding information dissemination, market pathways, or commercialization strategies relevant to the project products.
- Help set the project team's goals and contribute to the development and evaluation of its statement of proposed objectives as the project evolves.
- Provide a credible and objective sounding board on the wide range of technical and financial barriers and opportunities.
- Help identify key areas where the project has a competitive advantage, value proposition, or strength upon which to build.
- Advocate, to the extent the TAC members feel is appropriate, on behalf of the project in its effort to build partnerships, governmental support, and relationships with a national spectrum of influential leaders.
- Ask probing questions that ensure a long-term perspective on decision-making and progress toward the project's strategic goals.

The TAC may be composed of qualified professionals spanning the following types of disciplines:

- Researchers knowledgeable about the project subject matter;
- Members of trades that will apply the results of the project (e.g., designers, engineers, architects, contractors, and trade representatives);
- Public interest market transformation implementers;
- Product developers relevant to the project;
- U.S. Department of Energy research managers, or experts from other federal or state agencies relevant to the project;
- Public interest environmental groups;
- Utility representatives;
- Air district staff; and
- Members of relevant technical society committees.

The Recipient shall:

- Prepare a *List of Potential TAC Members* that includes the names, companies, physical and electronic addresses, and phone numbers of potential members. The list will be discussed at the Kick-off meeting, and a schedule for recruiting members and holding the first TAC meeting will be developed.
- Recruit TAC members. Ensure that each individual understands member obligations and the TAC meeting schedule developed in subtask 1.12.
- Prepare a *List of TAC Members* once all TAC members have committed to serving on the TAC.
- Submit *Documentation of TAC Member Commitment* (such as Letters of Acceptance) from each TAC member.

Products:

- List of Potential TAC Members
- List of TAC Members
- Documentation of TAC Member Commitment

Subtask 1.12 TAC Meetings

The goal of this subtask is for the TAC to provide strategic guidance for the project by participating in regular meetings, which may be held via teleconference.

The Recipient shall:

- Discuss the TAC meeting schedule with the CAM at the Kick-off meeting. Determine the number and location of meetings (in-person and via teleconference) in consultation with the CAM.
- Prepare a *TAC Meeting Schedule* that will be presented to the TAC members during recruiting. Revise the schedule after the first TAC meeting to incorporate meeting comments.
- Prepare a *TAC Meeting Agenda* and *TAC Meeting Back-up Materials* for each TAC meeting.
- Organize and lead TAC meetings in accordance with the TAC Meeting Schedule. Changes to the schedule must be pre-approved in writing by the CAM.

- Prepare *TAC Meeting Summaries* for each TAC Meeting that include any recommended resolutions of major TAC issues.

The TAC shall:

- Help set the project team's goals and contribute to the development and evaluation of its statement of proposed objectives as the project evolves.
- Provide a credible and objective sounding board on the wide range of technical and financial barriers and opportunities.
- Help identify key areas where the project has a competitive advantage, value proposition, or strength upon which to build.
- Advocate on behalf of the project in its effort to build partnerships, governmental support and relationships with a national spectrum of influential leaders.
- Ask probing questions that ensure a long-term perspective on decision-making and progress toward the project's strategic goals.
- Review and provide comments to proposed project performance metrics.
- Review and provide comments to proposed project Draft Technology Transfer Plan.

Products:

- TAC Meeting Schedule (draft and final)
- TAC Meeting Agendas (draft and final)
- TAC Meeting Back-up Materials
- TAC Meeting Summaries

Subtask 1.13 Project Performance Metrics

The goal of this subtask is to finalize key performance targets for the project based on feedback from the TAC and report on final results in achieving those targets. The performance targets should be a combination of scientific, engineering, techno-economic, and/or programmatic metrics that provide the most significant indicator of the research or technology's potential success.

The Recipient shall:

- Complete and submit the project performance metrics section of the *Initial Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task, to the CAM.
- Present the draft project performance metrics at the first TAC meeting to solicit input and comments from the TAC members.
- Develop and submit a *TAC Performance Metrics Summary* that summarizes comments received from the TAC members on the proposed project performance metrics. The *TAC Performance Metrics Summary* will identify:
    - TAC comments the Recipient proposes to incorporate into the *Initial Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task.
    - TAC comments the Recipient does not propose to incorporate with and explanation why.
- Develop and submit a *Project Performance Metrics Results* document describing the extent to which the Recipient met each of the performance metrics in the *Final Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task.
- Discuss the *Project Performance Metrics Results* at the Final Meeting.

Products:

- TAC Performance Metrics Summary
- Project Performance Metrics Results

IV. TECHNICAL TASKS

*Products that require a draft version are indicated by marking **"(draft and final)"** after the product name in the "Products" section of the task/subtask. If "(draft and final)" does not appear after the product name, only a final version of the product is required. **Subtask 1.1 (Products)** describes the procedure for submitting products to the CAM.*

TASK 2: USER, COMMUNITY AND SCIENTIFIC ENGAGEMENT

The goal of this task is to identify development priorities for existing and potential new tools for the Cal-Adapt: Data Explorer using California's Fifth Climate Change Assessment (Fifth Assessment) data through engagement with working group members, leveraging feedback to date and identification of relevant technical or scientific advances.

Subtask 2.1: Leveraging Existing Engagement Resources

The goal of this subtask is to leverage feedback to identify development priorities for existing and potential new tools for the Cal-Adapt: Data Explorer using Fifth Assessment climate data.

The Recipient shall:

- Review engagement documents from original Cal-Adapt: Analytics Engine agreement (EPC-20-007, hereafter referred to as "-007"):
  - Identify strengths and weaknesses from -007 "Stakeholder Engagement Plan".
  - Use -007 "Stakeholder Map" to identify key users to engage during this work.
  - Identify aspects of -007 "Development Plan" that may inform tool development.
  - Note use cases relevant for Data Explorer tools within -007 "Use Case Table".
  - Identify questions that can be addressed from Data Explorer from -007 "Open Research Questions for 5th Assessment" document.
  - Extract key users requests relevant for Data Explorer from user surveys executed within -007 (e.g. "Post-Regional-Workshop Survey").
- Summarize key findings from external reviews of Cal-Adapt.org, to identify recommendations this agreement can achieve and that are in line with EPIC funding mandates:
  - Extract key findings from other reviews such as the "Cal-Adapt Final Recommendations Playbook" and convert them into development tasks.
  - Identify opportunities from reviews such as the "Adaptation Clearinghouse & Cal-Adapt User Needs Priorities", to bridge between and within tools and underlying data products.
  - Build on initial thoughts and feedback provided within other review summaries, such as the "Initial Discovery Report" for Cal-Adapt:
    - Learn from user-identified desires for evolution of DE.
    - Extract insights from the characterizations of userbase.
    - Consider identified missing features and capabilities for development.
    - Inform efforts to improve user support in Task 4 based on identified gaps and limitations within Legacy Cal-Adapt historical support efforts.
    - Review "comparative market analysis" for potential insights from other climate portals that should be included in new tool development.
- Leverage existing engagement outcomes from other agreements in order to:

  - Identify opportunities to connect with research efforts currently supported by EPIC funding.
  - Identify potential uses cases for tool development.
  - Identify aspects of the website which need to be modified.
  - Utilize outcomes to populate design documentation for website refactor.
  - Identify potential content to support tool and feature prioritization tasks.
- Summarize all findings from pre-existing products in *Memorandum on Existing Feedback on Cal-Adapt: Data Explorer and Cal-Adapt.org.*

Product:
- Memorandum on Existing Feedback on Cal-Adapt: Data Explorer and Cal-Adapt.org

Subtask 2.2: Leveraging Ongoing Cal-Adapt Engagement
The goal of this subtask is to develop actionable feedback for tools and website design through engagement of key users, including those with whom ongoing regular engagement is already occurring.

The Recipient shall:
- Engage users and practitioners of climate adaptation across California's electricity sector to understand how they use climate information to:
  - Inform their operations in line with state energy policy goals.
  - Meet short term needs for responding to regulatory and internal requirements.
  - Understand long term needs for climate information.
- Improve the experience of users while being engaged by the Cal-Adapt Team by:
  - Decoupling user experience and usability testing from engagement sessions.
  - Focusing sessions on assessing user needs and long-term priorities.
  - Avoid overtaxing our partners across Cal-Adapt Enterprise by leveraging ongoing engagement series (for example with Analytics Engine) wherever possible.
  - Ensuring engagements benefit all parties, e.g., users can actively see tool development in line with their requirements and can easily connect with the project team receiving information to directly inform development goals.
  - Hold regular engagement forums (rather than one off, irregularly scheduled events) to engage key users and get answers to questions quickly, speeding up tool design and execution.
- Summarize all engagement findings in a draft *Engagement Report*

Product:
- Engagement Report (Draft)

Subtask 2.3: Co-Production of Innovative, Novel Climate Visualizations
The goal of this subtask is to co-produce high-impact, novel climate visualizations tools with working group members, scientists, technical developers, and social scientists.

The Recipient shall:
- Evolve the co-production engagement approach to move beyond academic outcomes towards actionable development plans that developers can use to build tools for DE.
- Judiciously apply co-production to high-impact tool development activities (see also Subtask 3.3) to key, high-impact concepts (such as global warming levels) and using more cost-efficient engagement approaches for other tool development.

- Discuss with CAM initial ideas for two co-produced workshops to be executed in Year 1:
  - Provide CAM with a list of initial ideas, options, and background/context:
    - Ideas will include topics which are novel and not-previously addressed within climate data visualization tools and websites (e.g. visualization of global warming, such as when they are likely to occur, confidence of occurrence and visualizations across time/space; climate-informed wildfire risk proxies).
    - Summarize these ideas and options in *Co-Production Engagement Plan.*
  - Collectively prioritize with CAM which topics to execute workshops on.
- Execute two working groups in Year 1:
  - Working group will kick off with a longer form meeting.
  - Host follow-on meetings at a cadence agreeable to CAM, working group member participants, and project staff (e.g. monthly or once per two months).
  - Evaluate efficiency of co-production workshops and follow on at CPR Meeting #1.
  - Amend *Co-Production Engagement Plan* based on experience:
    - Discuss new opportunities that have emerged.
    - Identify any user identified development priorities.
- Repeat Co-Production Activities in Year 2, as above.
- Incorporate results and outcomes from Subtask 2.3 into final *Engagement Report.*

Product:
- Co-Production Engagement Plan

Subtask 2.4: Prioritization of Tools, Features, and Components Across Engagement Strategies

The goals of this subtask are to use engagement activities systematically to prioritize development of the most impactful visualizations and website components; and to provide CAM with visibility into the process at regular intervals along the execution of the project.

The Recipient shall:
- Maintain an active log of suggested or requested features or tools.
- Engage the project team to prioritize requests, ranking potential tool and feature development tasks:
  - Establish a prioritized backlog of tool and feature development needs.
  - Establish a prioritized backlog of website features and needs.
  - Prioritize development features monthly with CAM.
  - Provide visibility to CAM and other key partners into priority list.
- Apprise the CAM on at least a monthly basis of current priorities:
  - Note what tools/features are in progress.
  - Describe expected timelines for development.
  - Apprise CAM of when tools or features are completed early.
  - Outline any unexpected roadblocks to established timelines.
  - Provide written feedback in support of Monthly Call Logs (Subtask 1.5).
  - Identify what tools/features are next in priority to develop.
- Incorporate the list of tools requested, prioritization outcomes, and any other results and outcomes from Subtask 2.4 into final *Engagement Report.*

Product:
- Engagement Report (Final)

Exhibit A
Scope of Work
Eagle Rock Analytics, Inc.

Task 3: Developing New Tools, Visualizations, and Novel Capabilities for California's Electricity Sector to Achieve Ambitious Climate Goals and Respond to Ongoing Policy Development & Rulemaking

The goals of this task are to build upon the technical foundation established in agreement EPC-21-038 to develop modular capabilities for tool and website design; open the door for collaboration between Cal-Adapt: Data Explorer and Cal-Adapt: Analytics Engine users that were previously siloed into separate platforms; and transform CEC's investment in climate science into a coherent ecosystem through which Cal-Adapt Enterprise's capabilities in visualization, analytical depth, and translate research outcomes into ratepayer benefits.

Subtask 3.1: Technical Foundation for Efficient Tool, Visualization and Website Development.

The goal of this subtask is to develop the capacity for Cal-Adapt to support the middle-tier users through expansion of the technical foundation established in agreement EPC-21-038 and development of modular capabilities for tool and website design.

The Recipient shall:

- Develop a unified Amazon Web Services (AWS) data access framework providing consistent interfaces to Fifth Assessment datasets, expanding upon the Application Programming Interface (API) developed previously, such as within agreement EPC-21-038:
    - Revise and update *API Documentation* to modern industry standards.
- Build upon the existing shared data processing library with common tools for climate analyses and data manipulation.
- Develop adaptive visualization framework that transforms computational outputs into intuitive interfaces and captures parameter selections for code generation:
    - Perform systematic integration of the codebases for DE and AE:
        - Develop common tooling, to serve both visualization and analysis.
        - Utilize modern continuous integration practices to support synchronized development across both DE and AE.
    - Research the potential, make suggestions, and develop (as agreed upon with CAM) a Python code generator that allows users to convert the state of interactive tools into code for fast, custom analyses:
        - Capture parameter selections from tools to generate code.
        - Incorporate above functionality into all tools produced for DE.
    - Capture changes to existing underlying analysis framework (ClimaKitAE) to support this work in *ClimaKitAE 2.0 Updates Memo*

- Develop the front-end assembly to empower tool generation:
    - Build a web interface with front-end code developed.
    - Develop a Content Delivery Network to:
        - Cache the API for accessing climate database.
        - Reduce latency and improve Cal-Adapt availability and reliability.
- Develop capacity of Cal-Adapt.org to host interactive plots:
    - Utilize Bokeh and similar open-source libraries to generate graphics.
    - Explore the feasibility of utilizing a Python FastAPI backend to seamlessly integrate:
        - Existing Cal-Adapt: Analytics Engine data catalogue.
        - Connect/hook into Cal-Adapt: Data Explorer web tools.

- Explore storage options (and implement in discussion with CAM) for data required for Cal-Adapt past the current commitment of 2026, and describe in a *Data Storage Options Memorandum*

Product:
- ClimaKitAE 2.0 Updates Memorandum
- API Documentation
- Data Storage Options Memorandum

Subtask 3.2: New Tools I: Re-Developing Existing Tools & Commonly Utilized or Requested Tools Which Do Not Require Extensive Engagement or Re-Design

The goal of this subtask is to update existing tools on Legacy Cal-Adapt which are highly used, consistent with new climate data and meet current user needs for climate information.

The Recipient shall:
- Evaluate the priority of existing tools on Legacy Cal-Adapt for re-development by:
    - Identifying commonly accessed and used tools (e.g. via use of Google Analytics).
    - Deprecating Legacy Cal-Adapt tools which are redundant based on climate advances and/or changes in data structure associated with new climate data.
    - Deprecating Legacy Cal-Adapt tools which are no longer relevant due to changes in the needs of electricity sector practitioners (*see Task 2*).
    - Combining aforementioned analysis with existing engagement to identify user priorities AND products developed within Task 2 (e.g. *Memorandum on Existing Feedback on Cal-Adapt: Data Explorer and Cal-Adapt.org*).
- Work with CAM to identify a subset of Legacy Cal-Adapt tools which are commonly used/requested by DE users, supported by current generation of climate data, and relevant to electricity sector needs of today.
- Perform market research by analyzing other international, federal and regional climate data platforms to identify tools for potential development:
    - Identify tools which are consistent with climate model data contained within Cal-Adapt Data Catalogue.
    - Identify tools which are in line with California energy sector goals and priorities.
    - Characterize the type of visualizations and tools which are shared by multiple platforms, which were not included on Legacy Cal-Adapt.
    - Represent emerging climate-related concerns to California (e.g. compound events).
- Create a prioritized list of tools to be updated by combining, in close coordination with CAM, sanctioned Legacy Cal-Adapt tools and tools commonly used elsewhere.
- Augment, as possible, the prioritized Legacy Cal-Adapt tools with advances in data analysis and data capacities developed across the Cal-Adapt Enterprise. For example:
    - Update all prioritized tools to utilize Fifth Assessment data.
    - Incorporate data from historical data platform (PIR-19-006).
    - Utilize pre-processed socioeconomic data specific to California.
- Update prioritized tools, as possible:
    - Reduce development time by applying modular tool design principles developed within Subtask 3.1, rather than bespoke design features.
    - Update the visual design, user interface, and interactivity features of the new tools to be consistent with the design principles and technical architecture of the re-developed Data Explorer.

- Limit development time by applying standard symbology and design principles common across Cal-Adapt: Data Explorer, rather than bespoke design features.
- Bring modern scientific concepts (e.g. global warming levels, model and climate system uncertainty, and fundamental statistical designs) to existing tools.
- Produce open-access visualizations within *Code Package Containing New Tools I.*
- Document the design, build and implementation of tools within *Documentation. Describing New Tools I for Users and Future Maintainers of Cal-Adapt.org* so as to facilitate a handoff to CEC specified future maintainer of Cal-Adapt at end of the agreement.

Product:

- Code Package Containing New Tools I (Draft and Final)
- Documentation Describing New Tools I for Users and Future Maintainers of Cal-Adapt.org (Draft and Final)

Subtask 3.3: New Tools II: Innovative Tools Co-Produced with Users

The goal of this subtask is to produce cutting edge and innovative advances in the electricity sector's climate adaptation planning and response through co-production of tools and functionality of Cal-Adapt: Data Explorer with key utility, agency, scientist, developers, and other critical parties.

The Recipient shall:

- Co-Produce tools with working group members:
  - Iteratively design, build, and revise tools in close coordination with dedicated working group members (*See Task 2*).
  - Produce user support and guidance materials to help user base.
  - Develop, share, and revise new tools in short development sprints.
- Build and publish co-produced tools ensuring open access to visualizations within *Code Package Containing New Tools II.*
- Document the design, build and implementation of tools within *Documentation Describing New Tools II for Users and Future Maintainers of Cal-Adapt.org.*

Product:

- Code Package Containing New Tools II (Draft and Final)
- Documentation Describing New Tools II for Users and Future Maintainers of Cal-Adapt.org (Draft and Final)

Subtask 3.4: New Tools III: Tools Support for California's Ambitious Climate Goals

The goal of this subtask is to produce new tools in a timely manner which are responsive to: (1) scientific and technical advances, (2) state publications, and (3) recent climate or extreme weather events which are currently impacting California’s electricity sector.

The Recipient shall:

- Identify opportunities for new tools as informed by scientific advances and state publications by:
  - Reviewing recent scientific publications of relevance to California’s electricity grid, and/or related to California’s policy / rulemaking with respect to climate and energy.
  - Reviewing state sponsored research or rulemaking / policy documents.

  - Identifying figures and visualizations from recent advances in science, state sponsored research and policy which can be made into tools on Cal-Adapt: Data Explorer.
  - Importing novel climate and other geospatial data layers emerging from advances into Cal-Adapt Data Catalog.
  - When publicly available, using researcher code which generates visualizations, tables and figures (as is mandated by most scientific journals) as the basis for tool development within Cal-Adapt: Data Explorer.
- Identify opportunities for new tools informed by recent weather and climate events by:
  - Identifying recent extreme weather and climate events that are of interest to California's electricity sector and related state agencies.
  - Discussing recent examples of extreme weather with CAM at monthly meetings to collectively determine if characterizing ongoing weather and climate events will provide sufficient ratepayer benefits.
  - Providing timely communications relating to weather and climate crises, which can include:
    - Performing attribution studies attempting to understand if these events were possible before global warming occurred.
    - Characterizing the likelihood of similar events occurring in the future.
    - Quantifying and describing visually to Cal-Adapt users how these events have changed over time.
    - Novel ways of incorporating recent observations of extreme weather and climate into Cal-Adapt: Data Explorer, including using observations such as those from the historical weather data platform developed in PIR-19-006.
    - Considering compound events, leveraging recent EPIC funded work such as co-occurrence of droughts, low wind, high cloud cover events which impact generation of renewable energy resources.
- Building upon modular capacity developed in Subtask 3.1, quickly build mockups, wireframes and beta versions of visualizations which can be socialized in ongoing Cal-Adapt engagements (see Subtask 2.2) to inform final tool design.
- Communicate on a monthly (or more frequent) with CAM to apprise of opportunities, developments and new tool capabilities.
- Develop new tools on Cal-Adapt: Data Explorer:
  - Produce open access to visualizations within *Code Package Containing New Tools III.*
  - Document the design, build and implementation of tools within *Documentation Describing New Tools III for Users and Future Maintainers of Cal-Adapt.org.*

Product:

- Code Package Containing New Tools III (Draft and Final)
- Documentation Describing New Tools III for Users and Future Maintainers of Cal-Adapt.org (Draft and Final)

Subtask 3.5: Showcase for EPIC and Other State Funded Advances

The goal of this subtask is to ensure that Cal-Adapt: Data Explorer is responsive to advances in understanding electricity – climate interactions (e.g. ongoing EPIC funded research).

The Recipient shall:

- Work closely with CAM to leverage and identify visualization opportunities from other EPIC funded research activities ongoing.

- Incorporate data layers produced by other EPIC funded research efforts into Cal-Adapt: Data Explorer and/or Cal-Adapt Data Catalog.
- Research methods employed by EPIC recipients and generated user support and guidance materials on Cal-Adapt to make EPIC funded research products usable:
    - Independently execute research and learning activities so as not to burden other EPIC recipients.
- Solicit review on markups, wireframes, and beta tools from CAM, or designates such as other EPIC funded recipients, members of Technical advisory committee, CEC, CPUC, or other agency staff.
- Build tools, visualizations, or new capabilities on Cal-Adapt: Data Explorer:
    - Produce open access to visualizations within *Code Package Containing EPIC Inspired Tools & Functionality.*
    - Document the design, build and implementation of tools within *Documentation Describing EPIC Inspired Tools & Functionality for Users and Future Maintainers of Cal-Adapt.org.*

Product:

- Code Package Containing EPIC Inspired Tools & Functionality
- Documentation Describing EPIC Inspired Tools & Functionality for Users and Future Maintainers of Cal-Adapt.org

TASK 4: WEB DESIGN AND DEVELOPMENT

The goals of this task are to develop the Cal-Adapt.org website to be an easy to navigate and accessible website which provides easy "entry point" to start understanding climate risk, impacts to communities and California's electricity sector. The updated Cal-Adapt.org page will be informed by three key design factors: (1) improving the consistency of look-and-feel across the Cal-Adapt Enterprise, (2) creating greater connectivity to science and policy advances outside of Cal-Adapt and (3) preparing Cal-Adapt to continue to serve as a foundational source of climate information in an AI/ML powered future.

Subtask 4.1: Refactor of Cal-Adapt.org

The goal of this subtask is to improve the consistency of the look-and-feel across all aspects of the Cal-Adapt Enterprise, resulting in a re-designed Cal-Adapt.org that presents information, tools, and visualizations in line with user expectations.

The Recipient shall:

- Refactor Cal-Adapt.org and enterprise to have consistent presentation:
    - Develop features to improve accessibility, where possible, of Cal-Adapt.org (e.g., including visual colorblind friendly palette options, alternative text, mobile-friendly reader format).
    - Utilize existing user experience reviews as well as using user analytics to understand what is working and how people experience the website.
- Refactor Cal-Adapt.org to support a seamless connection between AE and DE:
    - Create pooled resources so that a tool in DE or AE experience the same user support, guidance, and other help in use.
    - Eliminate barriers to access AE for mid-tier users by creating Python code from tool selection with clear messaging on how connected tools relate.
    - Re-design website elements to articulate how the climate hazard information and metrics addresses issues within the electricity sector, highlighting ratepayer benefits

and providing clearer links to materials from other EPIC funded research and to state policy, rulemaking, and decision-making documents.
    - Expand descriptions of tools and website features to include additional connections to the larger body of scientific knowledge.
    - Align AE and DE with Cal-Adapt.org's new look and feel.
- Sustain a web presence that provides information regarding other CEC grants associated with Cal-Adapt and hosts static content (e.g., wikis, notebooks, blogs, documentation):
    - Meet with CAM on a monthly basis and coordinate on opportunities to include information from other CEC grants within Cal-Adapt.
    - Develop the web presence in a manner that is consistent with the new look and feel of Cal-Adapt AND clearly articulates the source and attributes credit of materials emerging from other CEC grants associated with Cal-Adapt.
    - Support development of consistent holistic guidance and best practices to support content developed from other CEC grants associated with Cal-Adapt:
        - Provide scientific and climate science context for outcomes.
        - Utilize social science expertise to elevate technical memorandums from other CEC grants into user friendly guidance materials.
        - Perform user experience testing (see Subtask 4.3) on materials developed by other CEC grants to enhance usability.
    - Support CAM by providing subject matter expertise in website design applications to help CAM understand options for hosting web content:
        - Provide web design expertise and support understanding of innovative and user-friendly options for presenting web content (e.g. what are strengths and weaknesses of wikis, blogs, notebooks, documentation).
        - Provide web development expertise to help CAM understand developmental burdens associated with web hosting requests so that CAM evaluate cost-benefits of adding new materials.
        - Provide UI/UX expertise in evaluation of content from other CEC grants to inform CAM of how content would be experienced by users.
    - Respond in a timely fashion to CAM requests for hosting of content from other CEC grants and activities.
- Document the activities described above in a *Refactored Cal-Adapt.org Memorandum*.

Product:
- Refactored Cal-Adapt.org Memorandum

Subtask 4.2 - Explore AI/LLM Integration

The goal of this subtask is to position Cal-Adapt.org to be an authoritative, trusted source which can provide data and technical support for the Artificial Intelligence / Machine Learning (AI/ML) developments which are likely to play a role in California's electricity sector response to advances in data science, increases in data richness, and climate sciences.

The Recipient shall:
- Provide climate and weather information in pre-formatted and compliant data structures to support generative AI and other ML techniques.
- Improve data products on Cal-Adapt to be more compliant with best practices in data management, namely:
    - Findable (e.g. metadata and data have a globally unique and persistent identifier; data are described with rich metadata (e.g. adhere to CF compliant vocabularies

and/or any other geospatial standards AND are described with intrinsic and contextual information); metadata clearly and explicitly include the unique identifier they describe; metadata and data are searchable, indexed, and registered in open-source repositories (e.g. must acknowledge EPIC funding and describe benefits to ratepayers)).
    - Accessible (e.g. metadata and data are retrievable by their unique identifier using a protocol which is open, free, and universally implementable; metadata and data have free, open, transparent, and universal accessibility to all users; metadata are accessible beyond when data is no longer available (e.g. metadata to remain in an open archive after transition to California's Sixth Climate Change Assessment)).
    - Interoperable (e.g. metadata and data structure consistent with typical software applications; and metadata and data structure consistent with geospatial vocabularies.)
    - Reusable (e.g. metadata and data are released with a clear and accessible data usage license).
    - Metadata and data provided with detailed provenance in such that the data is citable and attributed to EPIC funded recipients and CEC.
- Provide key datasets that may be utilized in generative AI and ML techniques relevant to California's electricity sector (e.g. Quality-controlled historical weather stations through Cal-Adapt, such as those produced by PIR-19-006, and socio-economic data).
- Expand functionality which exists within ClimaKitAE, to further prepare data for AI:
    - Ensuring consistency in the timestep between observations.
    - Data in-filling between missing observations.
    - Removing erroneous data (QA/QC) which may derail AI training.
    - Developing new functionality within ClimaKitAE which processes data for generative AI applications, (e.g. calling of and normalization of geospatial data, dimensionality reducing techniques).
    - Converting gridded data to multi-channel raster-based files for CNNs or GANs.
- Create structure datasets (e.g. xarray and pandas) to support tabular AI models such as Random Forests, gradient boosting machines, or tabular transformers.
- Detail potential opportunities for development and inclusion of an LLM to support users of Cal-Adapt:
    - Report to CAM on how LLM could serve as user support within Cal-Adapt.
    - Characterize the risk and barriers to developing an LLM to support users of Cal-Adapt, including but not limited to understanding state concerns on use of LLM.
    - Identify reputable sources of information which could train a LLM from:
        - State of California resources (e.g. EPIC, technical memorandums, staff memos, docketed materials, Fifth Assessment reports, agency reports).
        - Guidance, user support, and training materials produced by Cal-Adapt Enterprise which could support development of LLM.
        - Peer-reviewed scientific and social science manuscripts which are related to California's electric grid and climate adaptation.
    - Coordinate with ongoing federal, regional and statewide efforts to responsibly use LLM within climate adaptation planning (e.g. work with Argonne National Laboratory to explore bringing their LLM to Cal-Adapt).
- Liaise with CEC staff or other state agency staff, as directed by CAM, who are considering AI/ML uses of data within state planning.
- Clearly characterize ratepayer benefits to LLM development within Cal-Adapt.
- Summarize all findings within the *Memorandum on AI Possibilities*.

Product:
- Memorandum on AI Possibilities

Subtask 4.3: Comprehensive UI/UX of All Tools, Components and Website Features
The goal of this subtask is to systematically evaluate the tools, functions and components of Cal-Adapt: Data Explorer and Cal-Adapt.org in their usability, efficacy and quality to support users being able to access Cal-Adapt resources in ways that are responsive to their needs and uses.

The Recipient shall:
- Develop user personas (e.g. casual user, middle tier user, power/advanced users) to characterize target audience for tool developments.
- Build on previously sponsored heuristic evaluation to inform the re-factor of Cal-Adapt.org website (Subtask 4.1) and existing tools within Legacy Cal-Adapt (Subtask 3.2).
- Perform user testing on userbase, including but not limited to: assigning users tasks and observing their ability to complete tests; performing A/B testing for user interface assessment; eye-tracking or heatmap analysis to identify high use aspects of DE.
- Systematically assess websites, tools and assorted functions for website functionality assessment (e.g. do tools/site load quickly enough, are they accessible for color blind individuals, usability on a range of devices – mobile and computer).
- Evaluate tool quality through performance of edge case testing and other systematic evaluations which identify tool fail points and unanticipated behavior.
- Survey active users periodically to identify functionality gaps.
- Validate that data generation pipelines, and pre-processed data layers are devoid of errors and meet the highest standards of data quality by use of unit and integration tests for code and statistical evaluations of data before their incorporation into DE.
- Support compliance of high scientific standards by assigning senior and seasoned climate and physical scientists to evaluate the work of programmers and developers.
- Evaluate the capacity of tools and models to produce expected scientific and statistical outcomes (e.g. ensuring the multi-model, or ensemble mean values are correct).
- Characterize, summarize and synthesize outcomes of all activities within Subtask 4.3 in a *Memorandum on Improvements to Useability of Cal-Adapt.org.*

- Include progress on activities in *CPR Report* and attend CPR meeting in accordance with subtask 1.3 (CPR Meetings).

Product:
- Memorandum on Improvements to Useability of Cal-Adapt.org
- CPR Report

TASK 5: USER TRAINING, SUPPORT, AND OUTREACH
The goal of this task is to increase ratepayer benefits from Cal-Adapt: Data Explorer by providing resources for users to translate outputs from tools into actionable pieces of information which can inform climate adaptation planning in California's electricity sector.

The Recipient shall:
- Develop user support documentation (within tools, and guidance, and best practices documentation) that enables users to retrieve information and sufficient context from DE.

- Provide active support for DE users (e.g., regularly scheduled office hours which will provide access to trained support specialists who can help users troubleshoot questions).
- Develop internal communication and scheduling tools (*see Task 6)* that enable support staff leading office hours to get technical or scientific support, such as a decision tree of internal technical and scientific expertise to reduce the burden on internal coordination.
- Develop documentation that builds a historical record of help provided and can be turned into website content (e.g. blog post outlining the successful work process supported, FAQ).
- Develop a ticket system for help requests (e.g., GitIssues or similar), utilizing a template format so users know which information is required:
    - Explore methods to make this record publicly available.
    - Index and/or optimize searchability of ticket system so that users performing web searches can relate to pre-existing answers, for example through FAQ answers.
- Create new guidance materials focused on more accessible introductory materials and summaries of advanced guidance, to serve the introductory and middle-tier DE users.
- Synchronize guidance development with tool development.
- Enhance the navigability of the current guidance system, including exploring advanced knowledge-based management systems with internal search capabilities such as autofill.
- Build a reputable knowledge management system:
    - Leverage guidance materials developed in other agreements, such as EPC-20-007 and EPC-23-024.
    - Develop guidance documentation which is shared across all elements of Cal-Adapt Enterprise.
- Develop *training materials for Cal-Adapt.org* for dissemination for users, including:
    - Video tutorials and blog posts which describe workflows beyond just using a tool;
    - Webinars on key scientific and technical advances;
    - Development of materials for an accessible FAQ.
- Leverage requests for support from non-energy sector users to benefit energy (e.g. creating support scripts and website materials that direct non-energy sector users of DE to others [such as staff at the Governor's Office of Land Use and Climate Innovation] –who perform climate data services for non-energy users, using inquiries to identify technical issues or bugs with platform).
- Perform proactive outreach with electricity sector users who are not maximizing rate payer benefits through use of Cal-Adapt: Data Explorer, potentially including:
    - 1:1 meetings with disengaged users;
    - Sharing recorded working group and/or webinars;
    - Developing an e-mail list of energy sector users to receive updates from DE;
    - Leveraging engagements with EPIC grantees and Fifth Assessment research.
- Characterize user support activities in a summarized form through regular readouts to CAM and in *User Guidance & Best Practices for Cal-Adapt Enterprise.*

Products:

- Training Materials for Cal-Adapt.org
- User Guidance & Best Practices for Cal-Adapt Enterprise

TASK 6: MANAGEMENT OF CAL-ADAPT: DATA EXPLORER AND COORDINATION WITH CAL-ADAPT ENTERPRISE

The goals of this subtask are to (1) provide well-resourced, expert project management to increase efficiency of visualization and tool development process; and to (2) provide engagement needed to connect Cal-Adapt: Data Explorer with external partners; (3) create

capacity for coordination with the research team that is funded by other EPIC funded researchers and in turn maximize the ratepayer benefits of this and additional CEC funded research efforts.

The Recipient shall:

- Develop an internal messaging system to enable efficient communication between ERA staff, subrecipient staff and vendor staff:
  - Invite CAM and other CEC staff to utilize the messaging system.
- Create a *Task Management System* which visualizes identified tasks, enables characterization of urgency of tasks and provides capacity to prioritize tasks:
  - Grant CAM access to *Task Management System* for visibility into progress.
- Reduce visualization and tool development time under professional project management by:
  - Minimizing unproductive work by creating clear opportunities for users and CAM to advise on visualization/tool requirements before any development time occurs.
  - Utilize Agile principles to break down work into small incremental deliverables.
  - Use *Task Management System* to communicate to internal project staff.
- Reduce the administrative burden on CAM and project staff by:
  - Developing standing meeting agendas that can support Monthly Call Logs, Quarterly Progress Reports and other bureaucratic documents.
  - Using Task Management System to extract key markers of progress to inform Project Evaluation Metrics.
- Provide the engagement needed to connect Cal-Adapt with other ongoing research efforts:
  - Ensure that this project and the larger Cal-Adapt Enterprise is well-coordinated.
  - Structure communications to be short, frequent and focused on outcomes, with a small audience to touchpoint on ongoing research.
  - Appraise CAM of external interactions and provide updates at monthly meetings.
  - Engage in frequent, short, focused meetings with other researchers (e.g., Group 2) prioritizing removing obstacles, highlighting risks, and preparing for dependencies.
  - Coordinate with other CEC-funded grants for which there are shared data products (e.g. from Group 2) to identify and name inter-grant dependencies.
  - Communicate with Recipients of related grants (e.g. Groups 2 and 3) to continue communication regarding inter-grant dependencies.

Product:
Task Management System

TASK 7: EVALUATION OF PROJECT BENEFITS

The goal of this task is to report the benefits resulting from this project.

The Recipient shall:

- Complete *the Initial Project Benefits Questionnaire*. The Initial Project Benefits Questionnaire shall be initially completed by the Recipient with 'Kick-off' selected for the 'Relevant data collection period' and submitted to the CAM for review and approval.
- Complete the *Annual Survey* by January 31st of each year. The Annual Survey includes but is not limited to the following information:
  - Technology commercialization progress;
  - New media and publications;
  - Company growth;
  - Follow-on funding and awards received.

- Complete the *Final Project Benefits Questionnaire*. The Final Project Benefits Questionnaire shall be completed by the Recipient with 'Final' selected for the 'Relevant data collection period' and submitted to the CAM for review and approval.
- Respond to CAM questions regarding the questionnaire drafts.
- Complete and update the project profile on the CEC's public online project and recipient directory on the Energize Innovation website (www.energizeinnovation.fund), and provide *Documentation of Project Profile on EnergizeInnovation.fund*, including the profile link.
- If the Prime Recipient is an Innovation Partner on the project, complete and update the organizational profile on the CEC's public online project and recipient directory on the Energize Innovation website (www.energizeinnovation.fund), and provide *Documentation of Organization Profile on EnergizeInnovation.fund*, including the profile link.

Products:

- Initial Project Benefits Questionnaire
- Annual Survey(s)
- Final Project Benefits Questionnaire
- Documentation of Project Profile on EnergizeInnovation.fund
- Documentation of Organization Profile on EnergizeInnovation.fund

TASK 8: TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

The goal of this task is to ensure the scientific and techno-economic analysis and tools developed under this agreement are utilized in the energy policy, and/or planning decisions at the state and/or local levels, academic community and/or commercial sector.

The Recipient Shall:

Develop and submit a *Knowledge Transfer Plan* that identifies the proposed activities the recipient will conduct to meet the goal of the task. The *Knowledge Transfer Plan* should include at a minimum:

  - Specific policy and planning efforts this project is expected to inform.
  - Specific stakeholder groups and energy policy and planning practitioners who will utilize the results of this project.
  - Proposed activities the Recipient will conduct to ensure the tools and results from this project will be utilized and adopted by the groups identified above.
  - Description of how the Cal-Adapt: Data Explorer could be transferred to the CEC or its designee at the end of the agreement term, if directed by the CAM, including training, user guides, and documentation.
- Present the *Draft Knowledge Transfer Plan* to the TAC for feedback and comments.
- Develop and submit a *Summary of TAC Comments* that summarizes comments received from the TAC members on the *Draft Knowledge Transfer Plan*. This document will identify:
  - TAC comments the Recipient proposes to incorporate into the *Final Knowledge Transfer Plan*.
  - TAC comments the Recipient does not propose to incorporate with and explanation why.
- Submit the *Final Knowledge Transfer Plan* to the CAM for approval.

- Implement the activities as described in the *Final Knowledge Transfer Plan.*
- Develop a *Knowledge Transfer Summary Report* that includes high level summaries of the activities, results, and lessons learned of tasks performed relating to implementing the Final Technology Transfer Plan. This report should not include any proprietary information.
- When directed by the CAM, develop presentation materials for an CEC- sponsored conference/workshop(s) on the project.
- When directed by the CAM, participate in annual EPIC symposium(s) sponsored by the California CEC.
- Provide at least (6) six High Quality Digital Photographs (minimum resolution of 1300x500 pixels in landscape ratio) of pre and post technology installation at the project sites or related project photographs.

Products:

- Knowledge Transfer Plan (draft and final)
- Summary of TAC Comments
- Technology Transfer Summary Report (draft and final)
- High Quality Digital Photographs

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.