



**CALIFORNIA
ENERGY COMMISSION**



**California Energy Commission
January 24, 2024 Business Meeting
Backup Materials for Agenda Item No 10b:
The Regents of the University of California, on behalf of the Merced Campus**

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

STATE OF CALIFORNIA
STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

**RESOLUTION: The Regents of the University of California, on behalf of the
Merced Campus**

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-23-022 with The Regents of the University of California on behalf of the Merced Campus, for a \$500,000 grant to develop a decision support system for the Federal Energy Regulatory Commission's (FERC) hydropower relicensing process that balances ecological and energy concerns in the context of climate change; 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 January 24, 2024.

AYE:
NAY:
ABSENT:
ABSTAIN:

Dated:

Kristine Banaag
Secretariat



GRANT REQUEST FORM (GRF)

A. New Agreement Number

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

New Agreement Number: EPC-23-022

B. Division Information

1. Division Name: ERDD
2. Agreement Manager: Joe O'Hagan
3. MS-:43
4. Phone Number: 916-776-0798

C. Recipient's Information

1. Recipient's Legal Name: The Regents of the University of California on behalf of the Merced Campus
2. Federal ID Number: 27-0093858

D. Title of Project

Title of project: Balancing Ecological and Energy Needs in California's Water Resources through FlowPywr: A Decision Support System for Integrating Hydropower Operations and Environmental Flows under Climate Change

E. Term and Amount

1. Start Date: 2/24/2024
2. End Date: 2/25/2028
3. Amount: \$500,000.00

F. Business Meeting Information

1. Are the ARFVTP agreements \$75K and under delegated to Executive Director? No
2. The Proposed Business Meeting Date: 1/24/2024
3. Consent or Discussion? Discussion
4. Business Meeting Presenter Name: Joe O'Hagan
5. Time Needed for Business Meeting: 5 minutes.
6. The email subscription topic is: EPIC (Electric Program Investment Charge).

Agenda Item Subject and Description:

The Regents of the University of California, on behalf of the Merced Campus. Proposed resolution approving agreement EPC-23-022 with The Regents of the University of California on behalf of the Merced Campus, for a \$500,000 grant to develop a decision support system for the Federal Energy Regulatory Commission's (FERC) hydropower relicensing process that balances ecological and energy concerns in the context of climate change, and adopting staff's determination that this project is exempt from CEQA. (EPIC funding) Contact: Joe O'Hagan (Staff Presentation: 5 minutes)

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":

Agreement will not cause direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because: Proposed project is a modeling study involving no physical alteration to the environment.

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: Tit. 14 Section 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.

Not applicable

b) Agreement **IS NOT** exempt.

IMPORTANT: consult with the legal office to determine next steps.

Not applicable

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. 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
The Regents of the University of California on behalf of the Irvine Campus	\$ 93,750	\$0
American Rivers, Inc.	\$ 36,000	\$0

I. 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
No vendors to report	\$	\$

J. 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

K. 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	21-22	301.001I	\$ 500,000

TOTAL Amount: \$ 500,000

R&D Program Area: EGRB: EA

Explanation for "Other" selection Not applicable

Reimbursement Contract #: Not applicable

Federal Agreement #: Not applicable

L. Recipient's Contact Information

1. Recipient's Administrator/Officer

Name: Sarah Naumes

Address: 5200 N LAKE RD

City, State, Zip: MERCED, CA 95343-5001



STATE OF CALIFORNIA
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Grant Request Form
CEC-270 (Revised 9/2022)

Phone: 209-285-4406

E-Mail: snaumes@ucmerced.edu

3. Recipient's Project Manager

Name: Josh Viers

Address: 5200 N Lake Rd Sponsored Reserach Services

City, State, Zip: Merced, CA 95343-5001

Phone: 530 383 3367

E-Mail: jviers@ucmerced.edu

M. Selection Process Used

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

Selection Process	Additional Information
Competitive Solicitation #	GFO-22-306
First Come First Served Solicitation #	Not applicable
Other	Not applicable

N. 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	Enter Yes or No.

Approved By

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

Agreement Manager: Joe O'Hagan

Approval Date: 12/12/2023

Branch Manager: Kevin Uy

Approval Date: 12/15/2023



STATE OF CALIFORNIA
CALIFORNIA ENERGY COMMISSION

Director: Kevin Uy on Behalf of Deputy Director

Approval Date: 12/15/2023

Grant Request Form
CEC-270 (Revised 9/2022)

Exhibit A
Scope of Work
The Regents of the University of California, Merced

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2		Update CenSierraPywr
3		Integrate Energy Grid Demand and System Vulnerability Assessment Modules
4	X	Develop and Deploy FlowPywr as a Decision Support System
5		Balancing Ecological and Energy Needs: Policy Analysis and Recommendations
6		Evaluation of Project Benefits
7		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CEC	California Energy Commission
CenSierraPywr	Daily Water Allocation Model
CMIP6	Coupled Model Intercomparison Project Phase 6
CPR	Critical Project Review
DSS	Decision Support System
FERC	Federal Energy Regulatory Commission
FlowPywr DSS	Decision Support Tool that Integrates Hydropower Operations and Environmental Flows in California's water resources management
SMEs	Subject Matter Experts
TAC	Technical Advisory Committee

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

A. Purpose of Agreement

The purpose of this Agreement is to develop a replicable decision support system for Federal Energy Regulatory Commission (FERC) hydropower relicensing that balances ecological and energy concerns in the context of climate change, aiming to better integrate hydropower into California's zero-carbon generation portfolio while simultaneously supporting and enhancing downstream ecosystem needs.

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.

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Scope of Work
The Regents of the University of California, Merced

Problem/ Solution Statement

Problem

The central challenge this project aims to tackle is developing a replicable decision support system capable of striking a delicate balance between hydropower generation and ecosystem preservation, considering the complexities of water and energy system models. As climate change intensifies and the demands on water resources escalate, there is a pressing need to address the existing gaps in knowledge and the absence of an integrated framework that captures the interdependencies between renewable energy production and environmental conservation. By creating a robust, data-driven decision support system, we seek to facilitate sustainable water management practices that account for the growing need for clean energy and the protection of vital ecosystems, ultimately enabling more efficient trade-offs and environmentally sustainable solutions.

Solution

The Recipient has developed a framework for a comprehensive and replicable decision support system that integrates advanced water-energy modeling techniques, stakeholder engagement, and interdisciplinary expertise to inform FERC relicensing processes. This framework utilizes the *CenSierraPywr* model based on *Pywr*, which incorporates environmental flows, hydropower optimization, and climate change impacts using climate realizations from the Coupled Model Intercomparison Project Phase 6 (CMIP6) to provide a holistic understanding of the complex water-energy-ecosystem nexus. By employing stakeholder-informed functional flow regimes, and energy grid integration, the decision support system will enable informed planning and management of water resources, ensuring sustainable hydropower operations that simultaneously minimize negative impacts on ecosystems. This approach will provide an innovative environmental assessment and modeling tool for FERC relicensing, addressing the challenges posed by climate change, increasing water demands, and the need for sustainable energy solutions.

B. Goals and Objectives of the Agreement

Agreement Goals

The goal of this Agreement is to:

- Develop and deploy the *FlowPywr Decision Support System* (DSS) as a comprehensive tool that integrates hydropower operations and environmental flows in California's water resources management. The project aims to improve decision-making processes, improve environmental sustainability, and advance equity in the management of water and energy resources.
- Through the development and implementation of the *FlowPywr DSS*, the project seeks to achieve a more balanced and sustainable approach to hydropower operations while addressing the challenges posed by climate change and regulatory requirements, ultimately supporting the state's statutory energy goals.

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Scope of Work
The Regents of the University of California, Merced

Ratepayer Benefits:² This Agreement will result in ratepayer benefits in several ways. Safety: By incorporating updated functional flow criteria and evaluating climate and flow scenarios, the project will enhance safety by providing decision-support tools for adaptive and proactive management of hydropower operations, reducing risks associated with extreme events such as floods. Reliability: The project will increase reliability by developing decision support tools that analyze the interactions between water resources and energy systems. Incorporating energy grid demand and system vulnerability assessment modules into the *FlowPywr DSS* will minimize risks and maximize system reliability. Affordability: Decision support tools developed in the project will enable efficient water and energy resource management, reducing costs and increasing affordability for ratepayers in California. Environmental sustainability: The project will promote environmental sustainability by integrating environmental flow strategies into the decision support tools. The project will ensure a balance between ecosystem needs and human activities by quantifying the impacts of different strategies on hydropower, flood control, and water deliveries. Equity: The project will foster equity by providing decision support tools for more equitable management of water and energy resources. Through policy analysis and recommendations, the project will address the broader challenges of water and energy management while supporting sustainable hydropower practices.

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, with a specific focus on FERC relicensing, environmental flows, and climate change. By developing and deploying the *FlowPywr DSS*, the project will provide key stakeholders with innovative tools and information to make informed decisions, balancing the needs of energy production, water management, and environmental sustainability. The *FlowPywr DSS* integrates advanced technologies to streamline FERC relicensing processes, incorporate environmental flow considerations, and address the challenges posed by climate change. These advancements will drive the achievement of California's energy goals, promoting sustainable hydropower operations and facilitating adaptive and proactive management in the face of a changing climate.

Agreement Objectives

The objectives of this Agreement are to:

- Develop and enhance the *FlowPywr DSS* to provide comprehensive decision support tools for integrating hydropower operations and environmental flows by increasing the performance and number of integrated modules and functionalities compared to current *CenSierraPywr* baseline functionality.
- Incorporate updated functional flow criteria and climate scenarios into the *FlowPywr DSS* to improve the accuracy and robustness of decision-making processes by increasing the activity of decision-makers using the system.

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.

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- Integrate energy grid demand and system vulnerability assessment modules into the *FlowPywr DSS* to enable a more comprehensive analysis of the interactions between water resources and energy systems by increasing the integration of energy grid demand and system vulnerability assessment.
- Develop and deploy the *FlowPywr DSS* as a user-friendly tool specifically designed to inform FERC relicensing processes and support decision-making related to environmental impacts by eliciting feedback from stakeholders.
- Analyze the implications of the *FlowPywr DSS* for California's water and energy policies and develop specific policy recommendations that promote the sustainable management of hydropower and address broader water and energy challenges by developing a policy report with recommendations based on the analysis of *FlowPywr DSS* outcomes and stakeholder consultations.
- Engage key stakeholders, including policymakers, operators, and researchers, to ensure their input and feedback are incorporated into the development and implementation of the *FlowPywr DSS* by conducting technical focus group meetings and integrating suggestions integrated into the *FlowPywr DSS*.
- Demonstrate the benefits and value of the *FlowPywr DSS* in improving safety, reliability, affordability, environmental sustainability, and equity in water and energy management in California through implementation assessment and facilitated knowledge transfer to promote wider adoption of the innovative decision support tool, including the presentation of project findings at relevant meetings and in relevant publications.
- Foster collaboration and knowledge exchange among project team members, consultants, and stakeholders to maximize the effectiveness and impact of the proposed work agreement by engaging the broader stakeholder community and documenting collaborative feedback.

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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:

For products that require a draft version, including the Final Report Outline and Final Report

- 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.

For products that require a final version only

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

For all products

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

Instructions for Submitting Electronic Files and Developing Software:

- **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.

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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, the Commission Agreement Officer (CAO), and any other CEC staff relevant to the Agreement. The Recipient will bring its Project Manager and any other individuals designated by the CAM to 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., WebEx), with approval of the CAM.

The administrative portion of the meeting will include discussion of the following:

- Terms and conditions of the Agreement;
- Invoicing and auditing procedures;
- Administrative products (subtask 1.1);
- CPR meetings (subtask 1.3);
- Match fund documentation (subtask 1.7);

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- Permit documentation (subtask 1.8);
- Subcontracts (subtask 1.9); and
- Any other relevant topics.

The technical portion of the meeting will include discussion of the following:

- The CAM's expectations for accomplishing tasks described in the Scope of Work;
 - An updated Project Schedule;
 - Technical products (subtask 1.1);
 - Progress reports (subtask 1.5);
 - Final Report (subtask 1.6);
 - Technical Advisory Committee meetings (subtasks 1.10 and 1.11); 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 will be reallocated to cover the additional costs borne by the Recipient, but the overall Agreement

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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 will 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. If the CAM concludes that satisfactory progress is not being made, this conclusion will be referred to the Deputy Director of the Energy Research and Development Division.
- 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 and the CAO of the following Agreement closeout items:

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The Regents of the University of California, Merced

- 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* on a USB memory stick, organized by the tasks in the Agreement.

Products:

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

REPORTS AND INVOICES

Subtask 1.5 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 monthly *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 preceding month, 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. See the Progress Report Format Attachment for the recommended specifications.
- Submit a monthly or quarterly *Invoice* that follows the instructions in the "Payment of Funds" section of the terms and conditions, including a financial report on Match Funds and in-state expenditures.

Products:

- Progress Reports
- Invoices

Subtask 1.6 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 1.6.1 Final Report Outline

The Recipient shall:

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- 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 Product:

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

Subtask 1.6.2 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

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

CAM Product:

- Written Comments on the Draft Final Report

MATCH FUNDS, PERMITS, AND SUBCONTRACTS

Subtask 1.7 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. The Recipient may only spend match funds during the Agreement term, either concurrently or prior to the use of CEC funds. 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 proposal 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 proposal 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.

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Products:

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

Subtask 1.8 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 1.9 Subcontracts

The goals of this subtask are to: (1) procure subcontracts required to carry out the tasks under this Agreement; and (2) ensure that the subcontracts are consistent with the terms and conditions of this Agreement.

The Recipient shall:

- Manage and coordinate subcontractor activities in accordance with the requirements of this Agreement.
- Incorporate this Agreement by reference into each subcontract.
- Include any required Energy Commission flow-down provisions in each subcontract, in

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addition to a statement that the terms of this Agreement will prevail if they conflict with the subcontract terms.

- If required by the CAM, submit a draft of each *Subcontract* required to conduct the work under this Agreement.
- Submit a final copy of each executed subcontract.
- Notify and receive written approval from the CAM prior to adding any new subcontractors (see the discussion of subcontractor additions in the terms and conditions).

Products:

- Subcontracts (*draft if required by the CAM*)

TECHNICAL ADVISORY COMMITTEE

Subtask 1.10 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 insure 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;

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- 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 1.11.
- 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 1.11 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* 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.

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- 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 insure 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 1.12 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

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III. TECHNICAL TASKS

TASK 2 UPDATE *CenSierraPywr*

The goal of this task is to enhance the current *CenSierraPywr* model by incorporating the latest CMIP6 downscaled hydrological data, updated functional flow criteria, and evaluating a range of climate and flow scenarios, including climate whiplash events, to provide more accurate and robust decision support for water and energy policy in California. This task provides the basis for Tasks 3-5.

The Recipient shall:

Obtain the latest CMIP6 downscaled hydrological data for the Central Sierra Nevada region and ensure compatibility with the *CenSierraPywr* model's spatial and temporal resolution requirements. Perform bias-correction on the obtained CMIP6 runoff data using established statistical techniques to ensure accuracy and consistency with historical observations. Re-evaluate model performance by replacing previous climate projections and updating its hydrologic inputs.

- Engage with the ecosystem management community to obtain the most insightful environmental flow prescriptions for achieving desired hydrogeomorphic conditions. These updated prescriptions for functional flow criteria, while specific to the Central Sierra Nevada region, will elicit feedback on other features for later Tasks. Ensure that the flow criteria are well-defined and based on the latest scientific understanding. Modify the *CenSierraPywr* model to incorporate the updated functional flow criteria, adjusting water allocation policies, operational rules, and other relevant model components as necessary. Document flow prescriptions and provide an evaluation of outcomes (i.e., reliability, shortages, infeasibility).
- Validate the updated *CenSierraPywr* model by comparing its results with historical observations and evaluating its performance in simulating the various climate and flow scenarios. Document the model updates and the findings to facilitate knowledge sharing and stakeholder engagement.
- Assess a range of climate and flow scenarios for the updated *CenSierraPywr* model, considering events such as climate whiplash and other extreme conditions. Assess the model's performance under these scenarios to better inform water and energy policy decisions in California.

Products:

- Report updated *CenSierraPywr* climate change data and scenarios.
- Report updated *CenSierraPywr* flow prescriptions.
- Summary on *CenSierraPywr* model validation.
- Document updated climate and flow scenarios.

TASK 3 INTEGRATE ENERGY GRID DEMAND AND SYSTEM VULNERABILITY ASSESSMENT MODULES INTO *CenSierraPywr*

The goal of this task is to enhance the *CenSierraPywr* model by incorporating energy grid demand and system vulnerability assessment modules, enabling a more comprehensive analysis of the interactions between water resources and energy systems in California.

The Recipient shall:

- Develop a new module within the *CenSierraPywr* model to represent energy grid

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demand and integrate the module into the model. The module will consider such factors such as seasonal and diurnal fluctuations, population growth, and changing energy consumption patterns. Incorporate relevant data sources, such as utility load forecasts, to calibrate and validate the module.

- Develop a system vulnerability assessment module to evaluate the resilience and vulnerability of the water-energy system under various climate and flow scenarios. Incorporate the system vulnerability assessment module into the *CenSierraPywr* model, Prepare a CPR Report and participate in CPR meeting per subtask 1.3 and run scenarios under different climate and flow scenarios.
- Engage with TAC and related stakeholders, such as utility operators and environmental managers, to share the insights gained from the updated *CenSierraPywr* model and its new energy grid demand and system vulnerability assessment modules. Document the model updates, scenario analyses, and findings to facilitate knowledge sharing and collaboration among stakeholders.

Products:

- Energy Grid Demand Module Development and integration Report (Draft and Final)
- System Vulnerability Assessment Module Development, Integration, and Scenario Analysis Report (Draft and Final)
- Stakeholder Engagement Report (Draft and Final)

TASK 4 DEVELOP AND DEPLOY FlowPywr AS A DECISION SUPPORT SYSTEM

The goal of this task is to develop and deploy a user-friendly decision support system based on the *CenSierraPywr* framework, but explicitly for informing FERC relicensing. The prototypical *FlowPywr* model will be developed as a lightweight computational model that can be easily extended to new project areas with a minimalist interface for model specification and parameterization, supply-demand node architecture, underlying source data, and prescription of functional flow criteria for evaluation. Modules for power grid and system vulnerability will also be included.

The Recipient shall:

- Using the *CenSierraPywr* modeling framework, develop an open-source code base that allows for easy integration of new project areas as well as developing a user interface.
- Work with TAC and subject matter experts to refine the architecture of the model as well as to update eco-geomorphic and functional flow criteria into *FlowPywr* to ensure that the system can prescribe flows that are ecologically robust. Prepare a CPR Report and participate in CPR meeting per subtask 1.3.
- Test and validate the *FlowPywr* model using historical and current data, as well as simulations of various climate and flow scenarios to ensure accuracy and reliability.
- Create plain language primer and provide training to stakeholders on model use.
- Document FlowPywr deployment to GitHub (or equivalent) as open-source code repository.
- Prepare a *CPR Report #1* in accordance with subtask 1.3 (CPR Meetings).
- Participate in a CPR meeting.

Products:

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- Document development of *FlowPywr* open-source code module and user interface
- Stakeholder Feedback Summary
- *FlowPywr* Testing and Validation Summary
- Document *FlowPywr* training and provide primer
- Document deployment to *GitHub* or equivalent repository
- CPR Report #1

TASK 5 BALANCING ECOLOGICAL AND ENERGY NEEDS POLICY ANALYSIS AND RECOMMENDATIONS

The goal of this task is to analyze the implications of the *FlowPywr* decision support system for California's water and energy policies, and to develop specific policy recommendations that support the sustainable management of hydropower and ecosystems while addressing broader water and energy challenges.

The Recipient shall:

- Conduct a comprehensive review of existing water and energy policies in California, including FERC relicensing processes, state-level water management regulations, and energy policies related to renewable energy integration and grid reliability. Identify key areas where policy improvements or modifications can support the sustainable management of hydropower and ecosystems.
- Using the beta *FlowPywr* decision support system, develop and analyze a sample of policy scenarios that reflect different approaches to balancing hydropower generation, environmental flows, and power grid considerations. These scenarios should consider potential changes in regulatory frameworks, market incentives, and infrastructure investments.
- Conduct targeted consultations with a diverse group of stakeholders, including policymakers, water and energy utilities, environmental organizations, and community representatives, to gather input on policy preferences, potential barriers to implementation, and opportunities for collaboration.
- Assess the potential environmental, social, and economic impacts of the proposed policy scenarios, including their implications for hydropower generation, ecosystem health, grid reliability, and broader water and energy management goals in California.
- Develop a set of evidence-based policy recommendations that build on the findings of the scenario analysis and stakeholder engagement, and that address key challenges and opportunities in California's water and energy policy landscape. These recommendations should be tailored to specific decision-makers and regulatory bodies, such as FERC, the California Public Utilities Commission (CPUC), and the State Water Resources Control Board (SWRCB).
- Share the policy recommendations with relevant decision-makers, stakeholders, and the broader public through targeted outreach, workshops, presentations, and publications. Collaborate with partners and allies to advocate for the adoption and implementation of the proposed policy changes.

Products:

- Comprehensive Policy Review Documentation (Draft and Final)
- Scenario Analysis Results Documentation (Draft and Final)

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- Stakeholder Engagement Summary
- Policy Recommendations Report (Draft and Final)
- Outreach Efforts Summary

TASK 6: 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 \(www.energizeinnovation.fund\)](http://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 \(www.energizeinnovation.fund\)](http://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 Energize Innovation.fund
- Documentation of Organization Profile on Energize Innovation.fund

TASK 7 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

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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.
- 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)

The goal of this task is to ensure the technological learning that resulted from the demonstration(s) is captured and disseminated to the range of professions that will be responsible for future deployments of this technology or similar technologies.

The Recipient Shall:

- Develop and submit a *Project Case Study Plan* that outlines how the Recipient will document the planning, construction, commissioning, and operation of the technology or system being demonstrated. The Project Case Study Plan should include:
 - An outline of the objectives, goals, and activities of the case study.
 - The organization that will be conducting the case study and the plan for conducting it.
 - A list of professions and practitioners involved in the technology's deployment.

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- Specific activities the recipient will take to ensure the learning that results from the project is disseminated to those professions and practitioners.
 - Presentations/webinars/training events to disseminate the results of the case study.
- Present the draft *Project Case Study Plan* to the TAC for review and comment.
- Develop and submit a *Summary of TAC Comments* that summarizes comments received from the TAC members on the draft *Project Case Study Plan*. This document will identify:
 - TAC comments the recipient proposes to incorporate into the final *Technology Transfer Plan*.
 - TAC comments the recipient does not propose to incorporate with and explanation why.
- Submit the final *Project Case Study Plan* to the CAM for approval.
- Execute the final Project Case Study Plan and develop and submit a Project Case Study.
- When directed by the CAM, develop presentation materials for a 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:

- Project Case Study Plan (draft and final)
- Summary of TAC Comments
- Project Case Study (draft and final)
- High Quality Digital Photographs

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.