



**CALIFORNIA
ENERGY COMMISSION**



**California Energy Commission
July 10, 2025 Business Meeting
Backup Materials for Regents of the University of California, on behalf of the
Davis 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

[PROPOSED]

RESOLUTION NO: 25-0710-09d

**STATE OF CALIFORNIA
STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION**

**RESOLUTION: Regents of the University of California, on behalf of the Davis
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-25-005 with the Regents of the University of California, on behalf of the Davis Campus, for a \$498,601 grant. This project will advance the scientific understanding of how species respond to outdoor lighting and propose biologically appropriate external lighting standards that balance nature conservation, energy efficiency, and environmental sustainability in a laboratory in Davis; 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 July 10, 2025.

AYE:

NAY:

ABSENT:

ABSTAIN:

Dated:

Kim Todd
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-25-005

B. Division Information

1. Division Name: ERDD
2. Agreement Manager: Julia Harnad
3. MS-:43
4. Phone Number: 916-477-1302

C. Recipient's Information

1. Recipient's Legal Name: Regents of the University of California, on behalf of the Davis campus
2. Federal ID Number: 94-6036494

D. Title of Project

Title of project: BALANCE: Biologically Appropriate Lighting Aligning Nature Conservation and Energy Efficiency

E. Term and Amount

1. Start Date: 8/14/2025
2. End Date: 12/14/2028
3. Amount: \$498,601.00

F. Business Meeting Information

1. Are the ARFVTP agreements \$75K and under delegated to Executive Director? No
2. The Proposed Business Meeting Date: 7/10/2025 .
3. Consent or Discussion? Consent
4. Business Meeting Presenter Name: Julia Harnad
5. Time Needed for Business Meeting: 10 minutes.
6. The email subscription topic is: Enter the email subscription topic name.

Agenda Item Subject and Description:

Regents of the University of California, on behalf of the Davis Campus. Proposed resolution approving agreement EPC-25-005 with the Regents of the University of California, on behalf of the Davis Campus, for a \$498,601 grant, and adopting staff's recommendation that this action is exempt from CEQA. This project will advance the scientific understanding of how species respond to outdoor lighting and will propose biologically appropriate external lighting standards that balance nature conservation, energy efficiency, and environmental sustainability, using a laboratory in Davis.

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:

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.

The project is focused on paper research and computer modeling with some stakeholder engagement. There is no alteration of the physical environment within this project. The research will utilize a combination of scientific symposiums, lab experiments, spatial analysis, ecological modeling on key species groups in California comparing the impact of two or more different lighting spectrum adjustment options, and quantitative analysis to assess the effects of different lighting spectra, shielding, and intensity on various species. Research will take place at the existing Visual Performance Laboratory (VPL) at the California Lighting Technology Center (CLTC) at the University of California, Davis Campus.

Cal. Code Regs., tit. 14, Section 15306 provides that projects which consist of basic data collection, research, experimental management, and resource evaluation activities, and which do not result in a serious or major disturbance to an environmental resource are categorically exempt from the provisions of the California Environmental Quality Act. This project falls within these parameters.



California Code of Regulations, title 14, Section 15301, “Existing Buildings,” covers the operation, maintenance, or minor alteration of existing public or private structures, facilities, mechanical equipment, involving negligible or no expansion of existing or former use. The grant activities will be conducted at an existing laboratory at UC Davis, and the stakeholder meetings will either be virtual or take place at existing meeting facilities. There will be no expansion of the existing use of the facilities, and there will not be a significant effect on the environment.

The project 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
Regents of the University of California, on behalf of the Los Angeles Campus	\$ 95,000	\$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
American Bird Conservancy	\$10,000	\$0
Clanton Engineering, Incorporated	\$75,000	\$0
DarkSky International - California Chapter	\$30,000	\$0
Evri GIS Consulting, Inc.	\$50,000	\$0

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	\$ 498,601

TOTAL Amount: \$498,601

R&D Program Area: ESB: EA

Explanation for “Other” selection Not applicable

Reimbursement Contract #: Not applicable

Federal Agreement #:

M. Recipient’s Contact Information

1. Recipient’s Administrator/Officer

Name: Cori Jackson



STATE OF CALIFORNIA
CALIFORNIA ENERGY COMMISSION

Grant Request Form
CEC-270 (Revised 01/2024)

Address: 633 Pena Dr
City, State, Zip: Davis, CA 95618-6570
Phone: 530-747-3843
E-Mail: cmjackson@ucdavis.edu

2. Recipient’s Project Manager

Name: Michael Siminovitch
Address:
City, State, Zip: ,
Phone: 530-757-3444
E-Mail: mjsiminovitch@ucdavis.edu

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-24-301
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: Julia Harnad

Approval Date: 5/28/2025

Branch Manager: Alex Horangic



STATE OF CALIFORNIA
CALIFORNIA ENERGY COMMISSION

Grant Request Form
CEC-270 (Revised 01/2024)

Approval Date: 5/29/2025

Director: Alex Horangic for Jonah Steinbuck

Approval Date: 5/29/2025

EXHIBIT A
Scope of Work
Regents of the University of California, on behalf of the Davis campus

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR¹	Task Name
1		General Project Tasks
2	X	Evaluating Species Behavior in Response to Natural Light vs. ALAN
3		Identifying California Landscapes with Significant Light Pollution Impacts on Fauna and Flora
4	X	Optimizing Risk Reduction from Biologically Appropriate Lighting
5		Biologically Appropriate Exterior Lighting Recommendations
6		Evaluation of Project Benefits
7		Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
AB32	Global Warming Solutions Act of 2006
ALAN	Artificial Light at Night
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CALGreen	California Green Building Standards Code (Title 24, Part 11)
CASE	Statewide Codes and Standards Enhancement Team led by PG&E Corporation
CEC	California Energy Commission
CPR	Critical Project Review
IOU	Investor-Owned Utility
NPP	Suomi National Polar-orbiting Partnership (Suomi NPP)
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 fund the advancement of the scientific understanding of how species respond to outdoor lighting and to propose biologically appropriate external lighting standards based on that new knowledge. The study will focus on the visual spectral responses of key taxa such as nocturnal insects, migratory birds, and pollinators—species essential to California's ecosystems in relation to external lighting properties, including spectrum, intensity, shielding methods, and duration.

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.

EXHIBIT A
Scope of Work
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B. Problem/ Solution Statement

Problem

The problem to be addressed is the significant ecological impact of artificial light at night (ALAN), which has been shown to attract and redistribute nocturnal insects and pollinators, disrupt bird migration patterns, and disorient turtle hatchlings in coastal environments. These effects, identified in a preliminary literature review, highlight the urgent need to understand and mitigate the detrimental consequences of ALAN on various species and ecosystems.

Solution

The solution to this problem is to develop and implement biologically appropriate lighting practices that balance nature conservation, energy efficiency, and environmental sustainability. This project will address the critical gaps in current lighting standards, which often overlook the biological impacts of artificial light on wildlife. By creating recommendations specifically focused on updating the California Green Building Standards Code (Title 24, Part 11 CALGreen), and also the Building Energy Efficiency Standards, including requirements in the Energy Code (Title 24, Part 6), the project will close these gaps and promote the adoption of lighting standards that support ecological sustainability. Additionally, these new standards will contribute to reduced energy use and emissions, aligning with California's Global Warming Solutions Act of 2006 (AB32) climate goals.

C. Goals and Objectives of the Agreement

Agreement Goals

The goal of this Agreement is to develop biologically appropriate lighting standards that minimize ecological impacts while ensuring energy efficiency and public safety.

Ratepayer Benefits:² This Agreement will result in the ratepayer benefits of lower costs. The project is expected to deliver substantial energy and cost savings to California Investor-Owned Utility (IOU) ratepayers by optimizing the use of lighting controls. With a projected reduction in electricity use of 50% or more annually, this translates to approximately 4,210 GWh in annual savings, benefiting ratepayers through reduced energy bills. These savings are based on a recent market assessment, which estimated that California's 12.5 million outdoor light fixtures consume around 8,420 GWh annually.

In addition to financial savings, the project will enhance environmental sustainability by minimizing light pollution and reducing greenhouse gas emissions. By focusing on biologically appropriate lighting that reduces unnecessary artificial light—particularly in the blue emission range—the project aligns with California's climate goals, such as those set by AB32, and promotes healthier ecosystems. Protecting pollinators from light pollution would also indirectly benefit California's vital agricultural sector. The project's outcomes will support both energy efficiency and ecological responsibility, providing comprehensive benefits to California IOU ratepayers.

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).

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Technological Advancement and Breakthroughs:³ This Agreement is intended to lead to technological advancements and breakthroughs by developing detailed recommendations for outdoor lighting technologies that address key barriers to achieving California’s statutory energy goals. The project focuses on reducing blue light emissions based on species’ needs identified during this effort, which will significantly mitigate ecological impacts on nocturnal species. Additionally, the integration of adaptive lighting controls and improved shielding designs will reduce light intensity by an estimated 50% during periods of human vacancy and achieve full cutoff for uplight, helping to minimize light pollution.

These innovations will not only enhance energy efficiency and public safety but also provide a science-based foundation for future updates to California’s building standards. By informing the development of new lighting technologies and standards, the project addresses critical environmental and energy efficiency challenges, supporting California’s statutory goals for greenhouse gas reduction and sustainable development.

Agreement Objectives

The objectives of this Agreement are to:

- Identify species-specific light sensitivities.
- Model lighting scenarios to understand the impact on different species.
- Propose updates to California building standards.

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:

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.

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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Scope of Work
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- 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.

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).

EXHIBIT A
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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.

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- 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.

EXHIBIT A
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- 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

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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 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

EXHIBIT A
Scope of Work
Regents of the University of California, on behalf of the Davis campus

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.

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- 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

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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)*

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

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- 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;
- 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.

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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.
- 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 Knowledge 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.

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- 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

TASK 2: EVALUATING SPECIES BEHAVIOR IN RESPONSE TO NATURAL LIGHT VS. ALAN

The goal of this task is to answer Key Research Question 1: How does the behavior of different species vary in response to naturally occurring light versus diverse exterior energy-efficient lighting properties, such as the emitted spectrum and intensity, shielding, and duration of lighting?

The Recipient shall:

- Conduct a comprehensive review of existing studies on species' responses to various lighting conditions, with a focus on behavior under natural light versus energy-efficient artificial lighting.
- Develop and host a scientific symposium series, both virtual and in-person, to engage experts in biology, ecology, and lighting and solicit their input.
- Perform simulations to observe behavioral changes in species under varying lighting properties, including spectrum, intensity, shielding methods, and duration.
- Use statistical methods to analyze behavioral changes and identify patterns related to specific lighting properties.
- Prepare *Evaluating Species Behavior in Response to Natural Light vs. ALAN Memo* to document task findings in response to Key Research Question 1.
- Prepare a *CPR Report #1* in accordance with subtask 1.3 (CPR Meetings).
- Participate in a CPR meeting.

Products:

- Evaluating Species Behavior in Response to Natural Light vs. ALAN Memo
- CPR Report #1

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TASK 3: IDENTIFYING CALIFORNIA LANDSCAPES WITH SIGNIFICANT LIGHT POLLUTION IMPACTS ON FAUNA AND FLORA

The goal of this task is to answer Key Research Question 2: Which California landscapes (urban, suburban, rural, marine) and settings with light pollution tend to have the greatest impacts on fauna and flora?

The Recipient shall:

- Map light pollution levels across California landscapes using GIS-based tools, including Visible Infrared Imaging Radiometer Suite (VIIRS) data calibrated to model sky glow.
- Collect species distribution data from diverse California environments—urban, suburban, rural, and marine—focusing on species diversity and health in areas with varying light pollution levels. Data collected from the USGS Ecoregions of California will be intersected in a GIS with data on sky brightness (such as the New World Atlas of Artificial Night Sky Brightness and the most recent annual composite of light at night from the VIIRS Day-Night Band of the Suomi NPP satellite). Wildlife by ecoregion will be characterized with State and Federal endangered species lists and sensitive species lists.
- Overlay light pollution data with ecological information, such as the GIS maps of species habitat locations provided by the California Department of Fish and Wildlife, to identify areas most exposed to light pollution. Species identified as being most negatively affected by ALAN in Key Question 1 will be prioritized.
- Characterize and analyze California’s existing outdoor lighting infrastructure in conjunction with GIS-mapping outcomes listed above, focusing on street lighting, exterior building lighting, and area lighting in parks and other open spaces. Key areas of analysis will include light source type, mounting height, pole spacing, lighting system age, hours of operation, and control type. This work will be a joint effort between UCD, UCLA and Evari GIS. The team will be conducting a literature review of outdoor lighting, and using the GIS mapping results for key hotspots, and will identify the most likely types of outdoor lighting in those areas. There will be outreach efforts to representative cities, counties or communities to sample and spot check fixture types and characteristics. Modeling and lighting simulations of hotspots will be conducted, and any necessary adjustments will be made to the models (in terms of existing fixtures and characteristics) so that they align with actual findings. Modeling new systems and updates will take place to improve impacts on key species.
- Quantify ecological impacts by correlating light pollution intensity with observed changes in species behavior, population dynamics, and existing lighting infrastructure. Prior research on light pollution effects in each wildlife ecoregion will be compiled. From these sources, priority species and sensitive taxonomic groups for each ecoregion will be identified. Ecoregions will be ranked by the degree of light pollution within them.
- Evaluate light pollution and ecological data in relation to land use groupings and Lighting Zones/Lighting Context definitions, helping to identify potential correlations and/or updates to existing Lighting Zone definitions. This analysis will assess the implications for energy codes, especially concerning biologically appropriate lighting.
- Prepare *Identifying California Landscapes with Significant Light Pollution Impacts on Fauna and Flora Memo* to document task findings in response to Key Research Question 2.

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Products:

- Identifying California Landscapes with Significant Light Pollution Impacts on Fauna and Flora Memo

TASK 4: OPTIMIZING RISK REDUCTION FROM BIOLOGICALLY APPROPRIATE LIGHTING

The goal of this task is to answer Key Research Question 3: How much can the risk reduction from biologically appropriate lighting to fauna and flora be optimized across multiple species based on experimental analyses under varying artificial lighting properties? Which taxa may still be at risk even with changes in lighting properties?

The Recipient shall:

- Model and analyze the anticipated responses of key species to biologically appropriate lighting configurations for the key species identified in Research Question 2 in Task 3. Variables for lighting configurations include light spectrum, intensity, duration, and shielding.
- Assess the effectiveness of biologically appropriate lighting in reducing risks to various species. Building on priority species and taxonomic groups identified in Task 2, the literature will be consulted to identify the potential of standardized mitigation measures to reduce or eliminate light pollution impacts. Knowledge gaps will be identified and generalized patterns identified.
- Identify taxa that remain at risk despite adjustments in lighting properties.
- Prepare *Optimizing Risk Reduction from Biologically Appropriate Lighting Memo* to document task findings in response to Key Research Question 3.
- Prepare a *CPR Report #2* in accordance with subtask 1.3 (CPR Meetings).
- Participate in a CPR meeting.

Products:

- Optimizing Risk Reduction from Biologically Appropriate Lighting Memo
- CPR Report #2

TASK 5: BIOLOGICALLY APPROPRIATE EXTERIOR LIGHTING RECOMMENDATIONS

The goal of this task is to answer Key Research Question 4: What recommendations on biologically appropriate exterior lighting can be made for future building standards that do not compromise energy efficiency, costs, and public safety. What lighting recommendations can be made for permitting and other development support for offshore wind energy?

The Recipient shall:

- Host workshops to engage lighting manufacturers and key stakeholders, providing technical advice and identifying barriers to biologically appropriate lighting standards.
- Collaborate with policymakers, industry stakeholders, and environmental organizations to develop recommendations that integrate biologically appropriate lighting into future building standards with a focus on the California Green Building Standards Code (Title 24, Part 11 CALGreen) and the Building Energy Efficiency Standards, including requirements in the Energy Code (Title 24, Part 6).
- Establish a pathway for consideration of the BALANCE recommendations in the 2031 Title 24 code cycle update process via the Statewide Codes and Standards Enhancement (CASE) Team led by PG&E Corporation.
- Evaluate proposed standards and products in a lab environment to validate their performance in terms of biological appropriateness, energy efficiency, and public safety.

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- Conduct an assessment to validate the feasibility and community acceptance of the proposed lighting solutions focusing on key stakeholder groups, including residents, business owners, local authorities, and environmental organizations. Feedback will be analyzed to refine recommendations, ensuring they balance ecological preservation with user needs and preferences.
- Assess the economic implications of implementing biologically appropriate lighting solutions to ensure cost-effectiveness while maintaining energy efficiency and public safety.
- Develop specific guidelines for exterior lighting on offshore wind structures, addressing both ecological and operational requirements.
- Prepare a *Biologically Appropriate Exterior Lighting Recommendations Memo* to document task findings in response to Key Research Question 4.

Products:

- Biologically Appropriate Exterior Lighting Recommendations Memo

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 EnergizeInnovation.fund

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- Documentation of Organization Profile on EnergizeInnovation.fund

TASK 7: 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.
- 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 Knowledge 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
- Knowledge Transfer Summary Report (draft and final)
- High Quality Digital Photographs

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.