

GRANT REQUEST FORM (GRF)New Agreement EPC-15-010 (To be completed by CGL Office)

Division	Agreement Manager:	MS-	Phone
ERDD	Ross Zelen	51	916-445-5281

Recipient's Legal Name	Federal ID Number
Center for Sustainable Energy	33-0936366

Title of Project
Expanding Energy-Related Career Pathways in the Electrical Industry: Increasing Workforce Development Opportunities in Disadvantaged Communities and Delivering Training on Automated Demand Response Communication Equipment to Inside Wireman Apprentices

Term and Amount	Start Date	End Date	Amount
	12/8/2015	3/31/2020	\$ 4,476,189

Business Meeting Information
 ARFVTP agreements under \$75K delegated to Executive Director.

Proposed Business Meeting Date	11/12/2015	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Discussion
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Business Meeting Presenter	Ross Zelen	Time Needed:	minutes
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Please select one list serve. EPIC (Electric Program Investment Charge)

Agenda Item Subject and Description

CENTER FOR SUSTAINABLE ENERGY. Proposed resolution approving Agreement EPC-15-010 with Center for Sustainable Energy for a \$4,476,189.00 grant to expand energy-related career pathways and increase workforce development opportunities in disadvantaged communities through delivering training on Automated Demand Response communication equipment. (EPIC funding) Contact: Ross Zelen. (Staff presentation: 5 minutes)

California Environmental Quality Act (CEQA) Compliance

- Is Agreement considered a "Project" under CEQA?
 - Yes (skip to question 2) No (complete the following (PRC 21065 and 14 CCR 15378)):
 - 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
 - If Agreement is considered a "Project" under CEQA:
 - a) Agreement **IS** exempt. (Attach draft NOE)
 - Statutory Exemption. List PRC and/or CCR section number: _____
 - Categorical Exemption. List CCR section number: 14 CCR 15301 "Existing Facilities"
14 CCR 15302 "Replacement or Reconstruction"
 - Common Sense Exemption. 14 CCR 15061 (b) (3)
 - Explain reason why Agreement is exempt under the above section:
 - The project funds workforce training on Automated Demand Response communication equipment. The training involves installation, commissioning, and maintenance of Automated Demand Response equipment. The classroom training will be conducted at existing training facilities, and the on-the-job training will be conducted at existing commercial buildings. Therefore, the project consists of minor alterations of existing facilities involving negligible or no expansion of use, and replacement or reconstruction of existing structures or facilities on the same site having substantially the same purpose and capacity as the structure replaced.
 - b) Agreement **IS NOT** exempt. (Consult with the legal office to determine next steps.)
- Check all that apply
- | | |
|---|---|
| <input type="checkbox"/> Initial Study | <input type="checkbox"/> Environmental Impact Report |
| <input type="checkbox"/> Negative Declaration | <input type="checkbox"/> Statement of Overriding Considerations |
| <input type="checkbox"/> Mitigated Negative Declaration | |

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CEC-270 (Revised 02/13)

CALIFORNIA ENERGY COMMISSION



List all subcontractors (major and minor) and equipment vendors: (attach additional sheets as necessary)	
Legal Company Name:	Budget
California LMCC IBEW-NECA	\$ 890,000
Regents of the University of California, Davis	\$ 265,936
California Labor Federation	\$ 300,000
ASWB Engineering	\$ 1,250,000
ICF International	\$ 99,000
Retail Industry Leaders Association	\$ 80,000
DOE- Lawrence Berkeley National Laboratory	\$ 90,000
Energy Solutions International	\$ 90,000
Ridge and Associates	\$ 90,000
James W. Davenport Instructional Design Company	\$24,000
Northern California Chapter, National Electrical Contractors	\$60,000
Alameda County Electrical Joint Apprenticeship and Training Committee	\$93,750
Fresno JATC	\$93,750
Los Angeles County Electrical Joint Apprenticeship and Training Committee	\$93,750
Orange County Electrical Joint Apprenticeship and Training Trust	\$93,750
Riverside – San Bernardino JATC	\$93,750
Sacramento County Electrical JATC	\$93,750
San Mateo County Electrical JATC	\$93,750
Redwood Empire JATC	\$93,750

List all key partners: (attach additional sheets as necessary)
Legal Company Name:

Budget Information			
Funding Source	Funding Year of Appropriation	Budget List No.	Amount
EPIC	14-15	301.001B	\$4,476,189
			\$
			\$
R&D Program Area:	EDMFO: EDMF	TOTAL:	\$4,476,189
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

Recipient's Administrator/ Officer		Recipient's Project Manager	
Name:	Jack Clark	Name:	Lindsey Hawes
Address:	9325 Sky Park Ct Ste 100	Address:	9325 Sky Park Ct Ste 100
City, State, Zip:	San Diego, CA 92123-4380	City, State, Zip:	San Diego, CA 92123-4380
Phone:	858-244-1187 / Fax: - -	Phone:	858-633-1390 / Fax: - -
E-Mail:	Jack.Clark@energycenter.org	E-Mail:	Lindsey.hawes@energycenter.org

Selection Process Used	
<input checked="" type="checkbox"/> Competitive Solicitation	Solicitation #: GFO-15-302
<input type="checkbox"/> First Come First Served Solicitation	

GRANT REQUEST FORM (GRF)



The following items should be attached to this GRF

1. Exhibit A, Scope of Work	<input checked="" type="checkbox"/>	Attached
2. Exhibit B, Budget Detail	<input checked="" type="checkbox"/>	Attached
3. CEC 105, Questionnaire for Identifying Conflicts	<input checked="" type="checkbox"/>	Attached
4. Recipient Resolution	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Attached
5. CEQA Documentation	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Attached

Agreement Manager **Date** **Office Manager** **Date** **Deputy Director** **Date**

EXHIBIT A
Scope of Work
Center for Sustainable Energy

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2		Establish On-The-Job Training Locations
3		Recruit Workers From Disadvantaged Communities
4	X	Provide Classroom and On-The-Job Training to Workers From Disadvantaged Communities
5		Develop AutoDR Communications Equipment Operation Manuals
6		Provide Technical Coordination & Assistance to Contractors and Building Owners
7	X	Develop Measurement & Verification Plan
8		Evaluation of Project Benefits
9		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
AB 758	Assembly Bill 758
AutoDR	Automated Demand Response Communications Technologies
CALCTP	California Advanced Lighting Controls Training Program
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CPR	Critical Project Review
IBEW-NECA program	International Brotherhood of Electrical Workers –National Electrical Contractors Associations inside wireman electrical apprenticeship program
IOU	Investor Owned Utilities
JATCs	Joint Electrical Training Centers
OJT	On-the-Job Training
OpenADR	Open Standards for Demand Response Automation
RPS	Renewable Portfolio Standard
SB 535	Senate Bill 535
SMB	Small and Medium Buildings
TAC	Technical Advisory Committee

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

A. Purpose of Agreement

The purpose of this Agreement is to fund classroom and on-the-job workforce training in Senate Bill 535 (SB 535)-designated disadvantaged communities in Investor Owned Utilities (IOU) service territories.² Electrical apprentices will learn to install and maintain automated demand-response (AutoDR) communications equipment in existing buildings to improve grid reliability, lower IOU ratepayer costs, increase safety and advance the goals of Assembly Bill 758.³

B. Problem/ Solution Statement

Problem

The California Independent System Operator has identified an increasing need for demand-side flexibility as more intermittent renewable power supplies are added to the California grid.⁴ By adding additional AutoDR capabilities to the grid system, variations in generation and increased demand during peak load events can be mitigated. AutoDR is therefore a critical tool for both grid stability and transitioning to a much higher penetration of renewables as called for by the current 33% Renewable Portfolio Standard (RPS) and the new 50% RPS goal established by Governor Brown in January 2015.

AutoDR equipment and communications standards have evolved significantly over the past decade. The technology and communications infrastructure used in AutoDR originated from an initial conceptual design developed in 2002 at Lawrence Berkeley National Laboratory with funding from the California Energy Commission (Energy Commission). The Energy Commission's Public Interest Energy Research (PIER) program played a major role in organizing efforts to develop open standards for demand response automation (OpenADR). However, advances in AutoDR technology and communications standards have not been adequately translated into training programs to prepare a workforce capable of installing and maintaining AutoDR equipment. Two project partners—ASWB Engineering and Energy Solutions—have extensive experience as AutoDR Program Verification Engineers for the three California IOUs AutoDR incentive programs, and consistently report inadequate supply of capable contractors, poor installations and faulty commissioning of installed systems.

² Senate Bill 535 (De León, 2012) directs that a quarter of the proceeds from the Greenhouse Gas Reduction Fund must go to projects that provide a benefit to disadvantaged communities. A minimum of 10 percent of the funds must be for projects located within those communities. For more information: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120SB535

³ Assembly Bill 758 (Skinner, 2009) requires the Energy Commission, in collaboration with the California Public Utilities Commission and stakeholders, to develop a comprehensive program to achieve greater energy efficiency in the state's existing buildings. For more information:

http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200920100AB758

⁴ <http://www.aiso.com/documents/dr-eeroadmap.pdf>

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Solution

The Recipient will recruit workers from disadvantaged (SB 535-designated) communities into the International Brotherhood of Electrical Workers – National Electrical Contractors Associations (IBEW-NECA) electrical apprenticeship program, and provide them with additional classroom and on-the-job training on the installation and maintenance of AutoDR communications equipment in small and medium buildings and public buildings in disadvantaged communities within the IOU service territories. The Recipient will also build demand for additional AutoDR installations by removing obstacles inhibiting greater participation by small and medium buildings (SMB) and public facilities in IOU AutoDR incentive programs. The Recipient will require AutoDR training recipients to sign a letter of intent to complete their apprentice training including the AutoDR elective.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

- Advance the goals of AB 758 to achieve greater energy savings in existing buildings.
- Achieve greater grid reliability and lower costs for California ratepayers by increasing participation and improving the effectiveness of utility demand response programs.
- Develop a skilled workforce to properly install, commission, operate and maintain grid-connected AutoDR communications technologies.
- Increase economic opportunity in disadvantaged communities through local workforce development and energy savings in existing buildings.
- Support the deployment of AutoDR technologies and communications standards previously funded by the California Energy Commission through the PIER Electric program.

Ratepayer Benefits:⁵ This Agreement will result in ratepayer benefits of greater electricity reliability, lower costs, and increased safety by advancing the deployment of market-ready AutoDR technology and increasing participation in IOU AutoDR programs in disadvantaged communities where energy costs tend to be a higher portion of operating costs for building owners and tenants. Adding additional AutoDR capabilities to the grid will increase demand-side flexibility and the ability to mitigate variations in generation and increased demand during peak load events. This will improve reliability and safety by reducing the possibility of brownouts, and will reduce costs for ratepayers by reducing surge pricing associated with expensive “peaker plants” during peak load events.

⁵ 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:⁶ This Agreement will lead to technological advancement and breakthroughs to overcome barriers to the achievement of the State of California's statutory energy goals by developing a workforce qualified to install and maintain AutoDR communications equipment, thus enabling this critical energy efficiency and grid reliability technology to be deployed in the market at scale. The project will support deployment of market-ready AutoDR technology and communications standards funded and supported by the California Energy Commission PIER Electric program.

Agreement Objectives

The objectives of this Agreement are to:

- Recruit, pre-qualify, and enroll a minimum of 250 individuals from disadvantaged communities into the International Brotherhood of Electrical Workers – National Electrical Contractors Associations (IBEW-NECA) inside wireman electrical apprenticeship program.
- Enlist a minimum of 200 SMB and public facilities into the California IOU AutoDR incentive programs, and accelerate the installation of AutoDR communications equipment in disadvantaged communities as defined by SB 535.
- Develop a new California Advanced Lighting Controls Training Program (CALCTP) course focused on proper selection, installation, commissioning, and maintenance of AutoDR communications equipment.
- Provide classroom (lecture) and hands-on (laboratory) training for 250 existing electrical apprentices from disadvantaged communities in the new CALCTP-AutoDR curricula.
- Provide on-the-job training installing, commissioning, and maintaining AutoDR communications equipment in existing buildings in disadvantaged communities for 250 existing electrical apprentices from disadvantaged communities.
- Demonstrate the effectiveness of AutoDR communications technology and the Energy Commission-funded OpenADR communications standard in saving energy and reducing costs for California ratepayers in disadvantaged communities.
- Identify and disseminate best practices in AutoDR incentive program administration and workforce development, and demonstrate a plan for long-term sustainability of the project beyond the grant period.

⁶ 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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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)**. 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 Energy Commission’s 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 or CD-ROM.

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The following describes the accepted formats for electronic data and documents provided to the Energy Commission 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.
- Documents intended for public distribution will be in PDF file format.
- The Recipient must also provide the native Microsoft file format.
- 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 Energy Commission'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:

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- Attend a “Kick-off” meeting with the CAM, the Commission Agreement Officer (CAO), and any other Energy Commission 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;
- Administrative products (subtask 1.1);
- CPR meetings (subtask 1.3);
- Match fund documentation (subtask 1.7);
- 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 and invoices (subtask 1.5);
 - Final Report (subtask 1.6);
 - Technical Advisory Committee meetings (subtasks 1.10 and 1.11); and
 - Any other relevant topics.
- Provide an *Updated Project Schedule*, *List of Match Funds*, and *List of Permits*, 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:

- Updated Project Schedule *(if applicable)*
- Updated List of Match Funds *(if applicable)*
- Updated List of Permits *(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 Energy Commission funding, and if so whether any modifications must be made to the tasks, products,

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schedule, or budget. CPR meetings provide the opportunity for frank discussions between the Energy Commission 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 Energy Commission.

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 amount will not increase. CPR meetings generally take place at the Energy Commission, 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 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.
- Submit the CPR Report along with any other *Task Products* that correspond to the technical task for which the CPR meeting is required (i.e., if a CPR meeting is required for Task 2, submit the Task 2 products along with the CPR Report).
- 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* and 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)
- Task Products (draft and/or final as specified in the task)

CAM Products:

- CPR Agenda
- List of Expected CPR Participants
- Schedule for Providing a Progress Determination

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- 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 Energy Commission 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:
 - Disposition of any state-owned equipment.
 - Need to file a Uniform Commercial Code Financing Statement (Form UCC-1) regarding the Energy Commission's interest in patented technology.
 - The Energy Commission'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 *All Draft and Final Written Products* on a CD-ROM or USB memory stick, organized by the tasks in the Agreement.

Products:

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

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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 Fund 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. The CAM will review the Final Report, which will be due at least **two months** before the Agreement end date. When creating the Final Report Outline and the Final Report, the Recipient must use the Style Manual provided by the CAM.

Subtask 1.6.1 Final Report Outline

The Recipient shall:

- Prepare a *Final Report Outline* in accordance with the *Style Manual* provided by the CAM. (See Task 1.1 for requirements for draft and final products.)

Recipient Products:

- Final Report Outline (draft and final)

CAM Product:

- 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

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Outline, 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)
- Ensure that the document is written in the third person.
- Ensure that the Executive Summary is understandable to the lay public.
 - Briefly summarize the completed work. Succinctly describe the project results and whether or not the project goals were accomplished.
 - Identify which specific ratepayers can benefit from the project results and how they can achieve the benefits.
 - If it's necessary to use a technical term in the Executive Summary, provide a brief definition or explanation when the technical term is first used.
- Follow the Style Guide format requirements for headings, figures/tables, citations, and acronyms/abbreviations.
- Ensure that the document omits subjective comments and opinions. However, recommendations in the conclusion of the report are allowed.
- Include a brief description of the project results in the Abstract.
- 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
- Consider incorporating all CAM comments into the Final Report. 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 Final Report and responses with comments within 10 days of notice by the CAM, unless the CAM specifies a longer time period or approves a request for additional time.
- Submit one bound copy of the *Final Report* to the CAM along with *Written Responses to Comments on the Draft Final Report*.

Products:

- Final Report (draft and final)
- Written Responses to Comments on the Draft Final Report

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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 Energy Commission 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 Energy Commission 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 Energy Commission 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.
- A copy of 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.

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- Include any required Energy Commission flow-down provisions in each subcontract, in 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 the 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.

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

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- 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.

Products:

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

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IV. TECHNICAL TASKS

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

TASK 2: ESTABLISH ON-THE-JOB TRAINING LOCATIONS

The goal of this task is to enroll at least 200 SMB and public facilities in IOU AutoDR incentive programs. These buildings will be located in SB 535-designated disadvantaged communities in IOU service territories.

The Recipient shall:

- Develop and provide an *Outreach Plan and Marketing Materials for Recruiting Buildings*, including, but not limited to fact sheets and talking points for SMB and public facilities (with up to 3 multi-lingual translations depending on neighborhood composition).
- Develop and provide *AutoDR Fact Sheets* regarding IOU AutoDR Incentive Programs
- Engage local Chambers of Commerce, the Retail Industry Leaders Association California School Board Association, Councils of Governments and other recruitment partners and provide *Recruitment Partnership Development Meeting Notes* from discussions.
- Train recruitment partners and coordinate recruitment efforts.
- Identify AutoDR systems appropriate for SMB and public facilities.
- Conduct an incentive program roadshow for SMBs and public facilities in disadvantaged communities.
- Connect interested business to technical coordinator.
- Enroll 200 SMB and public facilities, and aggregate *List of Recruited SMB and Public Facilities*.

Products:

- Outreach Plan and Marketing Materials for Recruiting Buildings
- AutoDR Fact Sheets
- Recruitment Partnership Development Meeting Notes
- List Of Recruited SMB and Public Facilities

TASK 3: RECRUIT WORKERS FROM DISADVANTAGED COMMUNITIES

The goal of this task is to recruit at least 250 individuals from disadvantaged communities into the IBEW/NECA Inside Wireman Electrical Apprenticeship Program.

The Recipient Shall:

- Develop and provide *Workforce Recruitment Outreach Materials* in multiple languages. Materials should include, but are not limited to, pamphlets and brochures. Languages should include, but are not limited to, Spanish and English.
- Monitor apprenticeship openings and timelines at the participating Joint Electrical Training Centers (JATCs).
- Conduct and provide an *Outreach and Recruitment Plan* that targets SB 535 designated disadvantaged communities to recruit new workers. Outreach should include, but are not

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limited to, meeting with local leaders, community college officials, and local construction groups.

- Coordinate additional outreach efforts by partners in disadvantaged communities, involving partners/subcontractors.
- Prepare and provide an *Apprenticeship List* to include at least 250 apprentices from disadvantaged communities recruited and indentured into Inside Wireman Apprenticeship Programs at participating JATCs.

Products:

- Workforce Recruitment Outreach Materials
- Outreach and Recruitment Plan
- Apprenticeship List

TASK 4: PROVIDE CLASSROOM AND ON-THE-JOB TRAINING TO WORKERS FROM DISADVANTAGED COMMUNITIES

The goal of this task is to provide classroom and on-the-job training to workers from disadvantaged communities. Training will take place as part of the IBEW/NECA Inside Wireman Electrical Apprenticeship Program with additional CALCTP-AutoDR elective course.

The Recipient Shall:

- Develop a complete CALCTP-AutoDR communications equipment elective course and certification test.
- Train JATC instructors on new CALCTP-AutoDR curriculum and provide to CAM a *Copy of Course Outline and Certification Test for JATC Instructors*.
- Develop an online training course on AutoDR communications equipment for electrical contractors who employ and supervise apprentices during their on-the-job training.
- Require AutoDR training recipients to sign a letter of intent to complete their apprentice training including the AutoDR elective and provide to CAM *Copies of Signed Letters of Intent*.
- Develop *AutoDR Training Materials For JATCs*, including, but not limited to, laboratory, hands on training materials and training boards for the 8 participating JATCs.
- Develop and post AutoDR training course online for Journeyman contractors.
- Enroll 250 existing apprentices from disadvantaged communities into CALCTP-AutoDR elective course, and aggregate *List of Apprentices*
- Provide CALCTP-AutoDR communications equipment elective course to 250 existing apprentices in year 4 or 5.
- Develop on-the-job training (OJT) locations for apprentices in disadvantaged communities in IOU service territories, and provide to CAM a *List of OJT Locations*.
- Provide on-the-job training (OJT) for apprentices in disadvantaged communities in IOU service territories.
- Develop and provide a job placement strategy to ensure that apprentices can find consistent work to install advanced energy efficiency measures after completing the full apprenticeship program. Develop and provide to CAM a *Job Placement Strategy Memo* that outlines how recipient will remain available to graduates as a resource while they seek full-time employment in the industry.
- Participate in CPR as described in task 1.3 and provide a *CPR Report*

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Products

- Copy of Course Outline And Certification Test for JATC Instructors
- Copy of signed letters of intent
- AutoDR Training Materials For JATCs
- List of Apprentices
- List of OJT Locations
- Job Placement Strategy Memo
- CPR report

TASK 5: DEVELOP AUTODR COMMUNICATIONS EQUIPMENT OPERATION MANUALS

The goal of this task is to develop two customizable AutoDR communications equipment operation manuals: one for business owners/tenants, and one for building operators.

The Recipient Shall:

- Develop and provide an *AutoDR Communications Equipment Operation Manual for Business Owners/Tenants* with installation-specific equipment details.
- Develop and provide an *AutoDR Communications Equipment Operation Manual for Building Operators*, with installation-specific equipment details.
- Develop and provide a minimum of 200 customized AutoDR communications equipment operation manuals between the AutoDR Communications Equipment Operation Manual for Business Owners/Tenants and AutoDR Communications Equipment Operation Manual for Building Operators.

Products:

- AutoDR Communications Equipment Operation Manual for Building Operators
- AutoDR Communications Equipment Operation Manual for Business Owners/Tenants

TASK 6: PROVIDE TECHNICAL COORDINATION & ASSISTANCE TO CONTRACTORS AND BUILDING OWNERS

The goal of this task is to provide technical assistance to electrical contractors and building owners as they navigate the AutoDR equipment installation and incentive program enrollment. This task will supplement the on-the-job training for contractors to help them navigate obstacles encountered during their first few AutoDR installations.

The Recipient Shall:

- Assist contractors with utility incentive program paperwork (as necessary to develop internal knowledge within contractor).
- Conduct quality control oversight operations to ensure that contractors are implementing quality installations.
- Serve as intermediary between business owner/building owner, contractor and IOUs.
- Document and provide a *Personalized Technical Assistance Services Report* for each contractor and building participating in the on-the-job AutoDR installation training supported by the EPIC funds

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Products:

- Personalized Technical Assistance Services Report

TASK 7: DEVELOP MEASUREMENT & VERIFICATION PLAN

The recipient will prepare an M&V plan that establishes the methodology required to evaluate the success of the EPIC workforce development program. The evaluation methodology falls generally into three categories which are described below:

The Recipient shall:

- Develop and provide a *Measurement and Verification Plan* to assess the effectiveness of the educational component by administering a basic skill set evaluation at the beginning of the training to establish a baseline for the education effort; a second evaluation will be performed at the conclusion of each training sequence.
- Track paperwork documenting the success of each AutoDR installation performed through establishing and providing to CAM a *Report on AutoDR Installation Performance Database* to monitor progress.
- Develop and provide to CAM a series of *AutoDR Installation Milestones Report* that mark the progress of the installations and document correlation to respective IOUs's AutoDR programs.
- Develop field installation reports, invoices, test results, AutoDR program enrollments, and other relevant documents to track effectiveness of AutoDR installations and provide to CAM a *Summary of Field Installation and Related Documents*.
- Track and provide to CAM a *Participation Measurement and Verification Report* summarizing participation of AutoDR project installed under the program. Participation is expected to include: program enrollment persistence, number of events participated in, load shed level and duration, and other parameters as may be defined.
- Participate in CPR as described in task 1.3 and provide a CPR Report.

Products:

- Measurement and Verification Plan (Draft and Final)
- Report on AutoDR Installation Performance Database
- AutoDR Installation Milestones Report
- Summary of Field Installation and Related Documents
- Participation Measurement and Verification Report
- CPR Report

TASK 8: EVALUATION OF PROJECT BENEFITS (*Mandatory task*)

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

The Recipient shall:

- Complete three Project Benefits Questionnaires that correspond to three main intervals in the Agreement: (1) *Kick-off Meeting Benefits Questionnaire*; (2) *Mid-term Benefits Questionnaire*; and (3) *Final Meeting Benefits Questionnaire*.
- Provide all key assumptions used to estimate projected benefits, including targeted market sector (e.g., population and geographic location), projected market penetration,

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baseline and projected energy use and cost, operating conditions, and emission reduction calculations. Examples of information that may be requested in the questionnaires include:

- For Product Development Projects and Project Demonstrations:
 - Published documents, including date, title, and periodical name.
 - Estimated or actual energy and cost savings, and estimated statewide energy savings once market potential has been realized. Identify all assumptions used in the estimates.
 - Greenhouse gas and criteria emissions reductions.
 - Other non-energy benefits such as reliability, public safety, lower operational cost, environmental improvement, indoor environmental quality, and societal benefits.
 - Data on potential job creation, market potential, economic development, and increased state revenue as a result of the project.
 - A discussion of project product downloads from websites, and publications in technical journals.
 - A comparison of project expectations and performance. Discuss whether the goals and objectives of the Agreement have been met and what improvements are needed, if any.
- Additional Information for Product Development Projects:
 - Outcome of product development efforts, such copyrights and license agreements.
 - Units sold or projected to be sold in California and outside of California.
 - Total annual sales or projected annual sales (in dollars) of products developed under the Agreement.
 - Investment dollars/follow-on private funding as a result of Energy Commission funding.
 - Patent numbers and applications, along with dates and brief descriptions.
- Additional Information for Product Demonstrations:
 - Outcome of demonstrations and status of technology.
 - Number of similar installations.
 - Jobs created/retained as a result of the Agreement.
- For Information/Tools and Other Research Studies:
 - Outcome of project.
 - Published documents, including date, title, and periodical name.
 - A discussion of policy development. State if the project has been cited in government policy publications or technical journals, or has been used to inform regulatory bodies.
 - The number of website downloads.
 - An estimate of how the project information has affected energy use and cost, or have resulted in other non-energy benefits.
 - An estimate of energy and non-energy benefits.
 - Data on potential job creation, market potential, economic development, and increased state revenue as a result of project.
 - A discussion of project product downloads from websites, and publications in technical journals.

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- A comparison of project expectations and performance. Discuss whether the goals and objectives of the Agreement have been met and what improvements are needed, if any.
- Respond to CAM questions regarding responses to the questionnaires.

The Energy Commission may send the Recipient similar questionnaires after the Agreement term ends. Responses to these questionnaires will be voluntary.

Products:

- Kick-off Meeting Benefits Questionnaire
- Mid-term Benefits Questionnaire
- Final Meeting Benefits Questionnaire

TASK 9: TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES (*Mandatory task*)

The goal of this task is to develop a plan to make the knowledge gained, experimental results, and lessons learned available to the public and key decision makers.

The Recipient shall:

- Prepare an *Initial Fact Sheet* at start of the project that describes the project. Use the format provided by the CAM.
- Prepare a *Final Project Fact Sheet* at the project's conclusion that discusses results. Use the format provided by the CAM.
- Prepare a *Technology/Knowledge Transfer Plan* that includes:
 - An explanation of how the knowledge gained from the project will be made available to the public, including the targeted market sector and potential outreach to end users, utilities, regulatory agencies, and others.
 - A description of the intended use(s) for and users of the project results.
 - Published documents, including date, title, and periodical name.
 - Copies of documents, fact sheets, journal articles, press releases, and other documents prepared for public dissemination. These documents must include the Legal Notice required in the terms and conditions. Indicate where and when the documents were disseminated.
 - A discussion of policy development. State if project has been or will be cited in government policy publications, or used to inform regulatory bodies.
 - The number of website downloads or public requests for project results.
 - Additional areas as determined by the CAM.
- Conduct technology transfer activities in accordance with the Technology/Knowledge Transfer Plan. These activities will be reported in the Progress Reports.
- When directed by the CAM, develop *Presentation Materials* for an Energy Commission-sponsored conference/workshop on the results of the project.
- Prepare a *Technology/Knowledge Transfer Report* on technology transfer activities conducted during the project.

Products:

- Initial Fact Sheet (draft and final)
- Final Project Fact Sheet (draft and final)

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- Presentation Materials (draft and final)
- Technology/Knowledge Transfer Plan (draft and final)
- Technology/Knowledge Transfer Report (draft and final)

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: CENTER FOR SUSTAINABLE ENERGY

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

RESOLVED, that the Energy Commission approves Agreement EPC-15-010 from GFO-15-302 with Center for Sustainable Energy for a \$4,476,189 grant to expand energy-related career pathways and increase workforce development opportunities in disadvantaged communities by delivering training on Automated Demand Response communication equipment and

FURTHER BE IT RESOLVED, that the Executive Director or his/her designee shall execute the same on behalf of the Energy Commission.

CERTIFICATION

The undersigned Secretariat to the Commission 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 California Energy Commission held on November 12, 2015.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Tiffani Winter,
Secretariat